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Book 1

# Canadian Railway and Marine World

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## GENERAL INDEX FOR 1918

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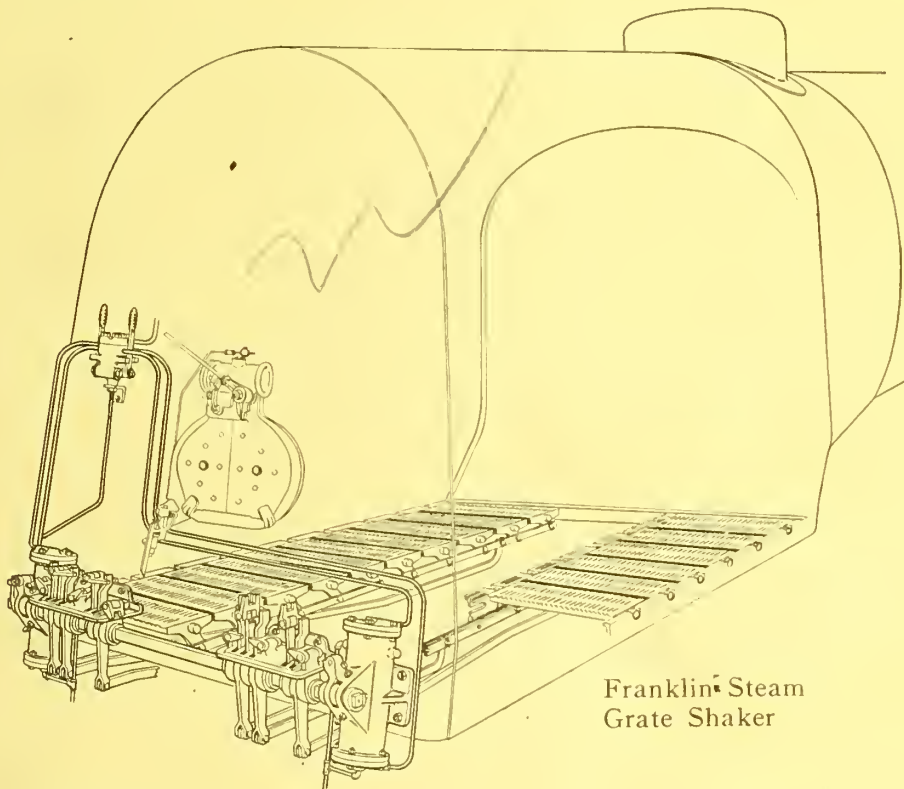
# Canadian Railway AND Marine World

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Subscription Rates, Page 23



Franklin Steam  
Grate Shaker

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For example one street railway company purchased ten new safety cars a year ago. These were placed in service on only one of their divisions, and have resulted in a saving of more than \$6000 up to this time.

It is significant that the first Safety Car Control equipment was developed to perfect a method of operation to improve an undesirable financial situation on a street railway property in a large Western city.

*Write our nearest office for full particulars.*

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WE would like every Electrical man to become acquainted with our organization and our various departments of service in connection with the equipping of Railway, Light, Power and Industrial Plants.

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Lists and other informations, regarding our service and equipment will be furnished gladly. Write or call.

**202 Canadian Pacific Building, TORONTO**

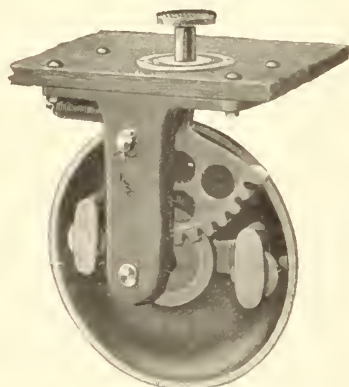
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## Faraday Car Signal Systems

Operates from line voltage—no batteries. Faraday Push Buttons, Buzzers and Resistances furnish an ideal, failure-proof car signal system.



## Keystone Rotary Gongs

A louder gong and more continuous to meet requirements resulting from modern, heavy, noisy traffic in cities.



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To light up a path of safety for your cars. Only their famous reflectors can project the distinctive "Golden Glow" light.



## Safety Car Lighting Fixtures

To light up your cars scientifically, efficiently and safely. To save you money.



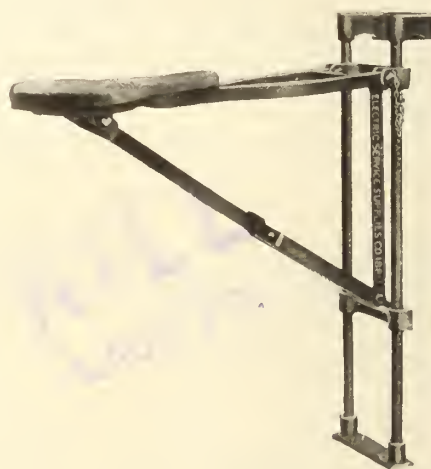
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To protect your overhead construction from "flying" poles, thus preventing delays and tie-ups.



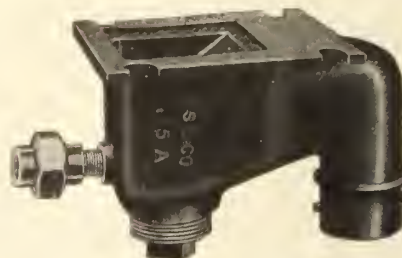
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With these signs destination names can easily be changed and cars rerouted. Well labeled cars make more money.



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If valve leaks, remove worn plates,

**Presto !**

A New Valve.





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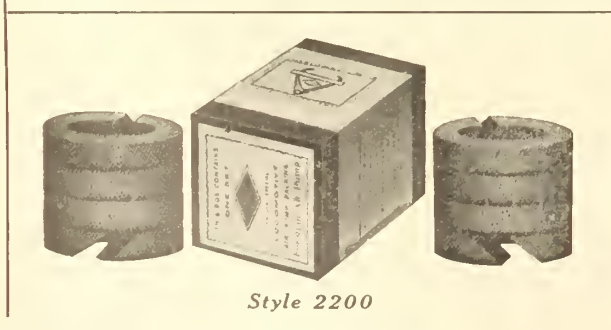


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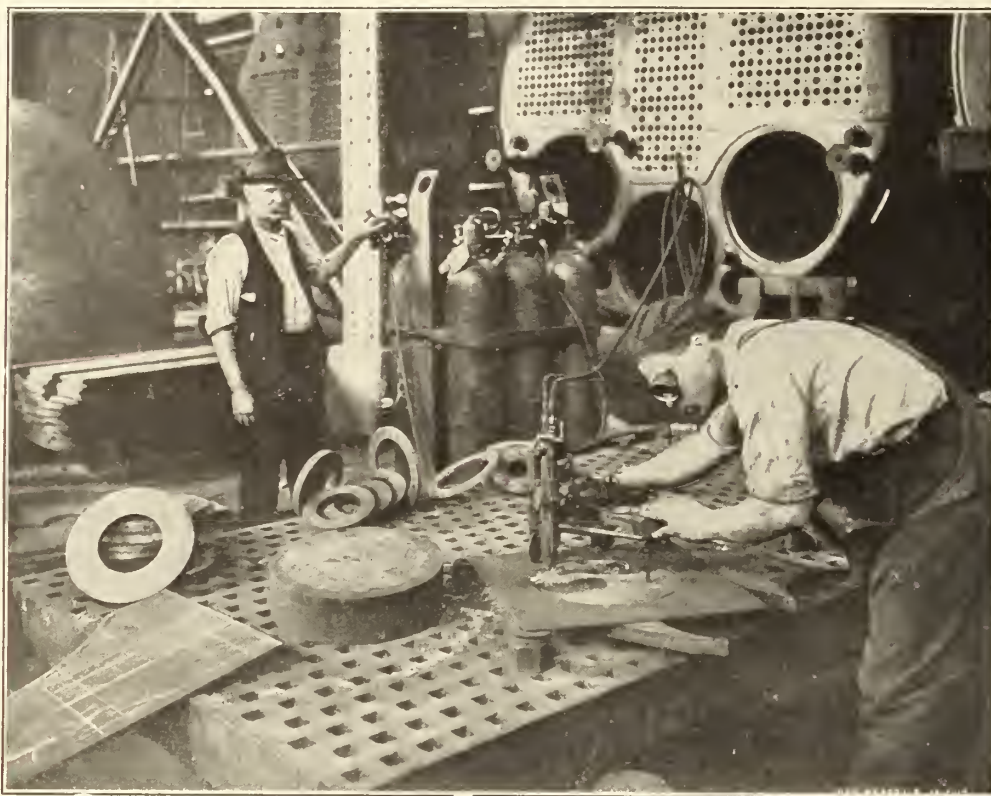
for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

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has never been so fully demonstrated as during the past year of government preparations and demands upon the foundries, steel mills, munition plants, and the entire metal-working industry, and particularly in the great shipbuilding program.



The Radiograph, an exclusive Davis-Bournonville development for mechanical cutting with the Oxy-Acetylene or Oxy-Hydrogen flame, in the New York Shipbuilding yard, being used for circular cutting of steel plate. Note the true and finished cut and the thicknesses of the several pieces.—Photo by New York Shipbuilding Corp.

Exclusive developments in mechanical cutting and welding with Oxy-Acetylene and Oxy-Hydrogen have been of invaluable assistance to metal workers, coupled with highest efficiency in results and lowest operating cost. The Radiograph cuts from  $\frac{1}{2}$ -in. to 20-in. steel plate, in straight lines or circles. The Oxygraph cuts in any direction, according to pattern or drawing, along straight lines, curves or sharp angles. Speed from 3 to 18 inches per minute according to thickness.

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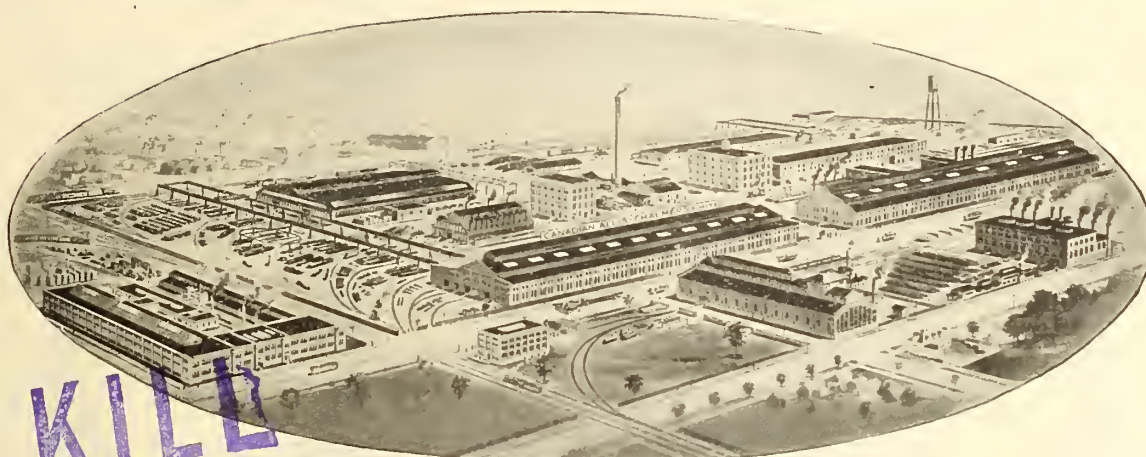


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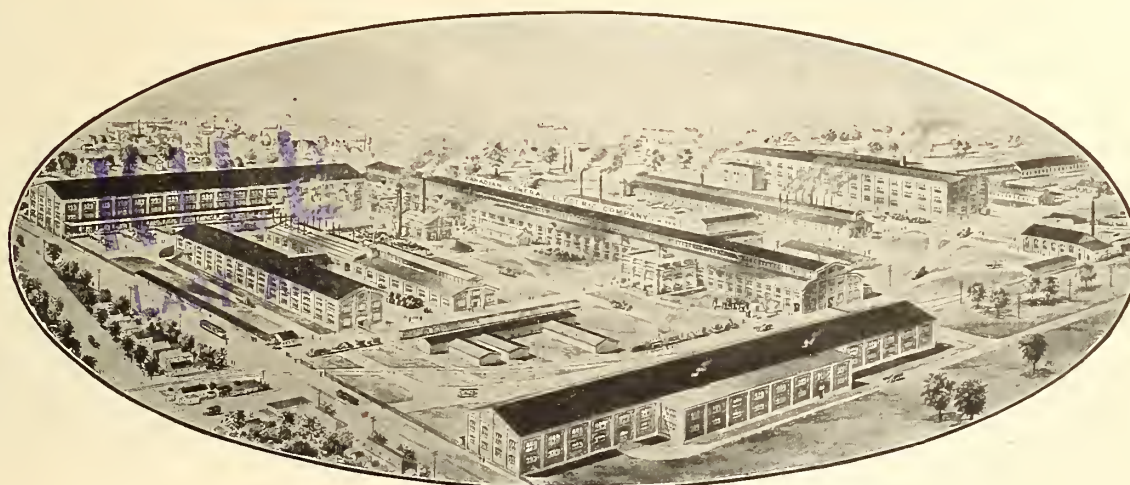


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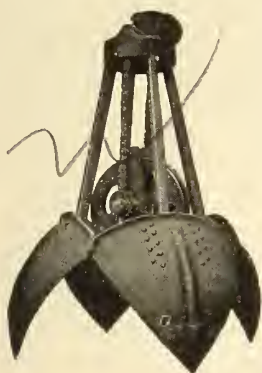
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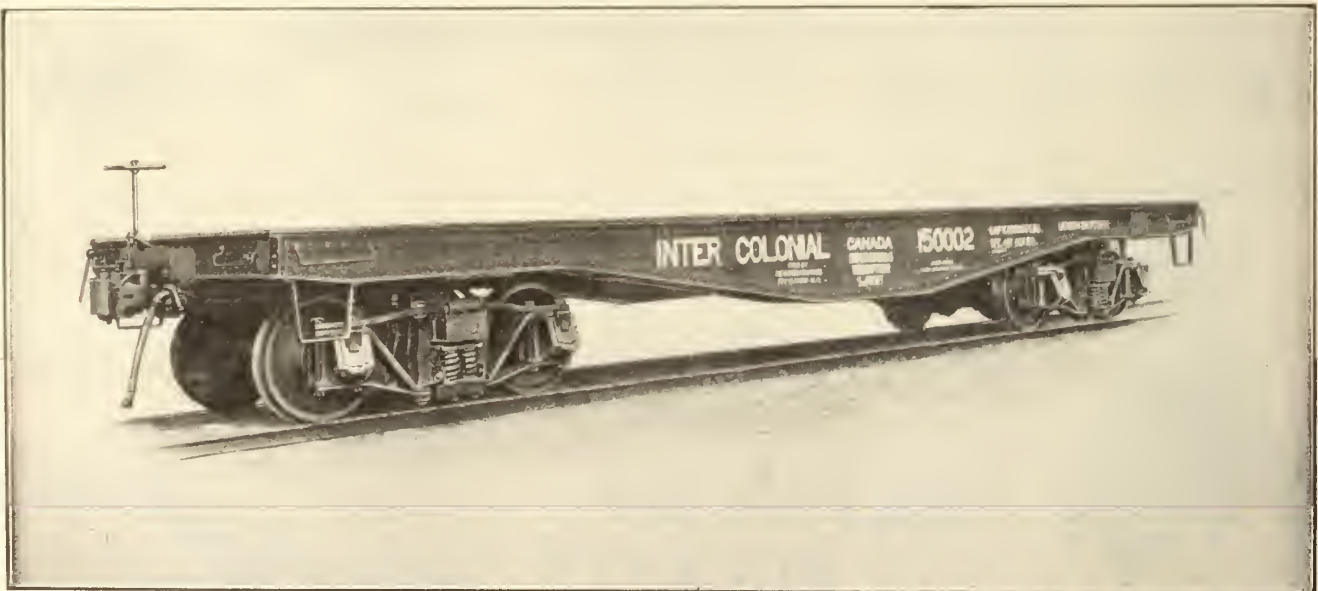
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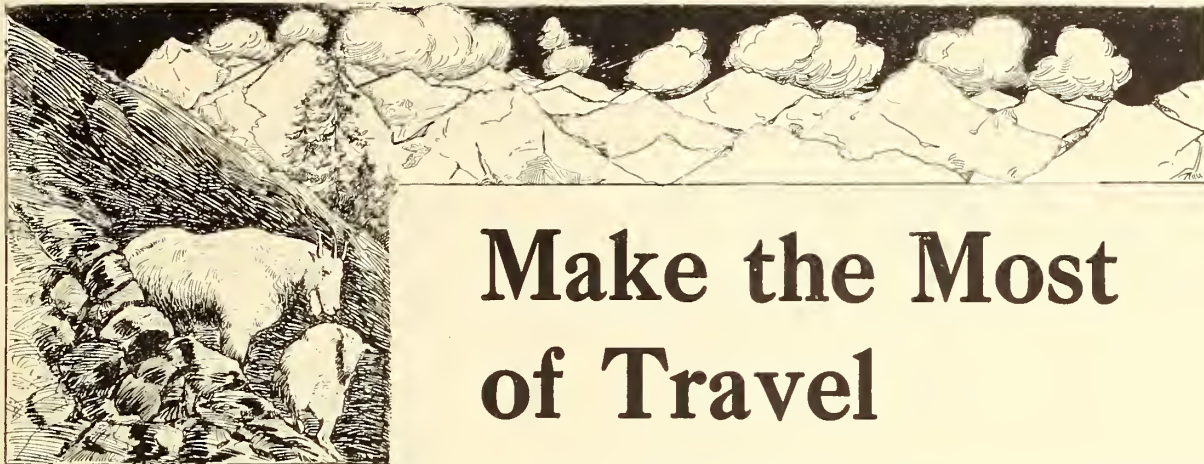
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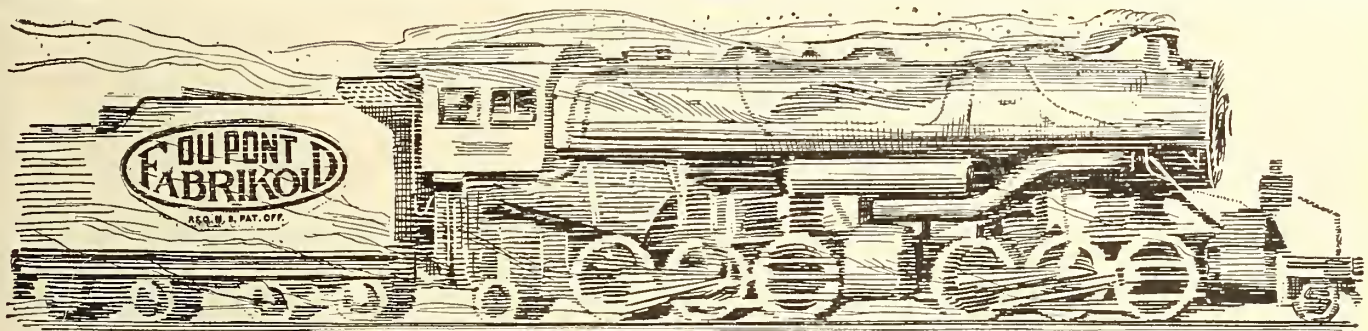
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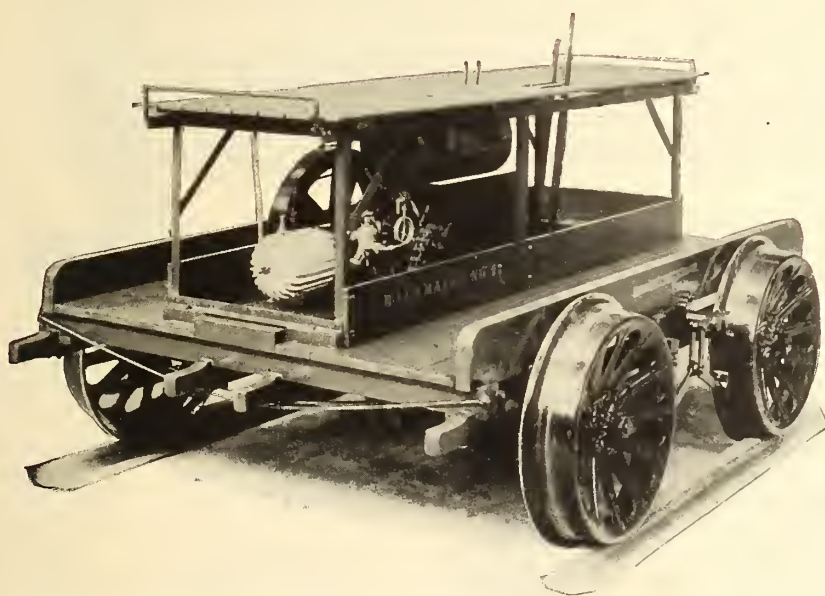
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For Section Gangs. A sturdy, easy-running car for rough use.

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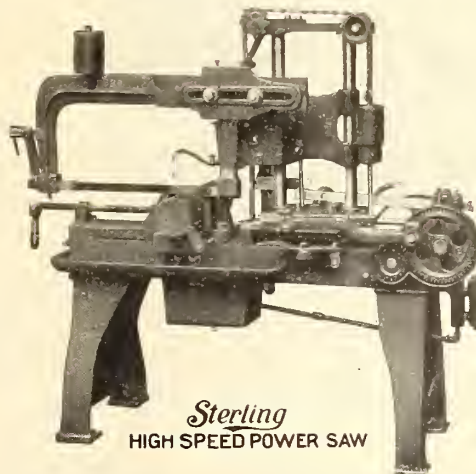


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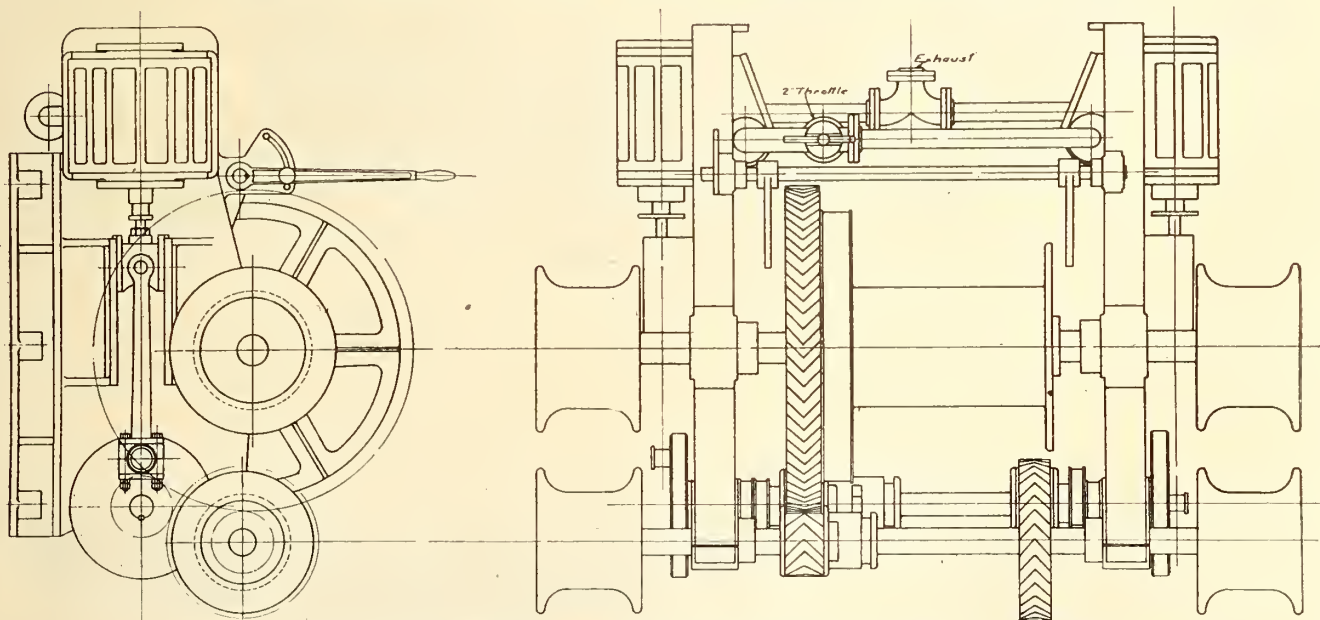


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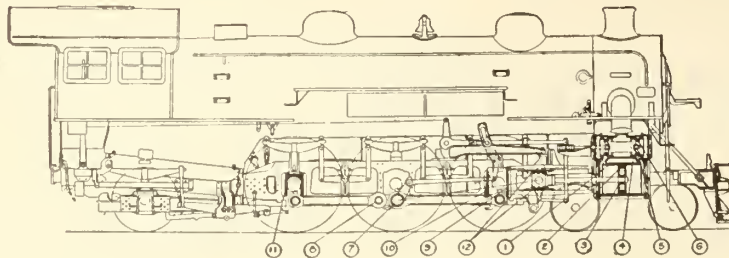
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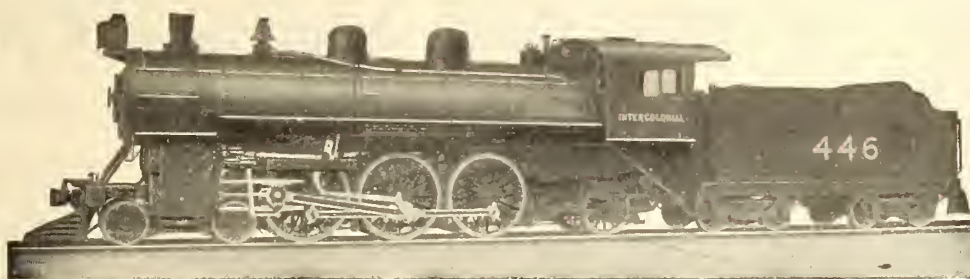
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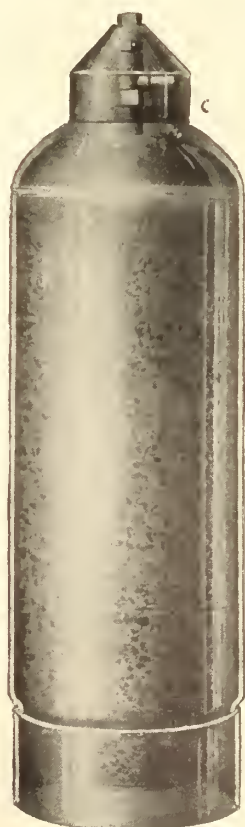
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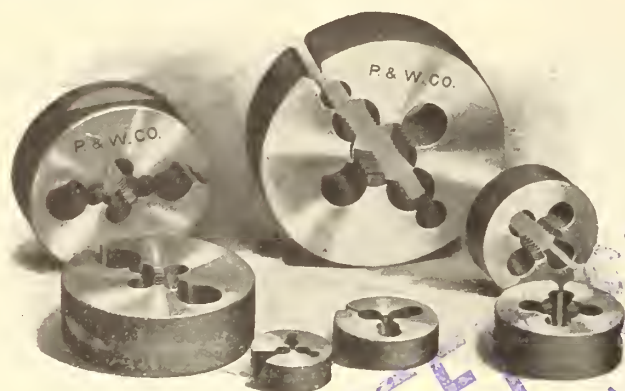
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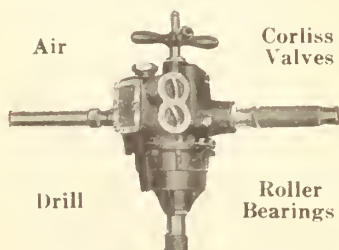
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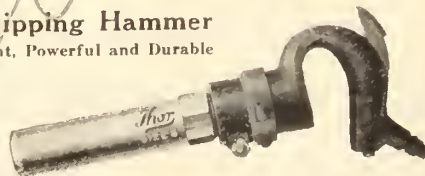
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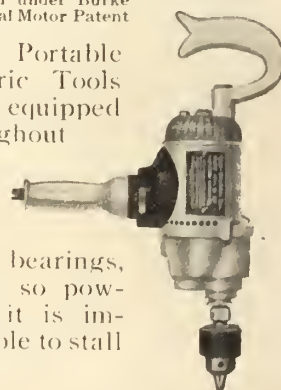
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October 23, 1917.

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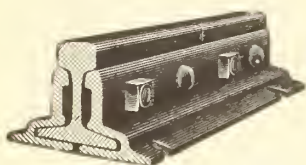
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CONTINUOUS

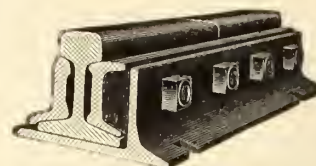


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*Compliments of the Season* and our  
best wishes for a

HAPPY, PROSPEROUS  
NEW YEAR.

**Canadian Consolidated Rubber Co., Limited**  
Montreal, Canada

# Canadian Railway and Marine World

January, 1918.

## Oxy-Acetylene and Electric Welding and Cutting Processes in Locomotive Shops.

By A. F. Dyer, General Foreman, Welding Department, Grand Trunk Railway, Montreal.

With the present prices of material, scarcity of labor, and difficulty of obtaining steel and iron, welding and cutting by both the above mentioned processes have proved a great boon and an almost indispensable factor in railway repair shops. Seven years ago we employed one man as an acetylene welder, and owing to failures, through his lack of experience, the process was nearly condemned, but as we gathered experience, both gas and electric welding developed, so that now instead of one man we employ 18 and have often to work them overtime.

The low pressure acetylene gas system is used, and the whole shops are piped for the acetylene, every other repair pit has a drop connection, in locomotive houses we use Prest-O-Lite dissolved acetylene in cylinders, which saves the expenses of a generator and piping where the process is only in use occasionally. There is a great difference in opinion as to the relative merits of high or positive pressure and low pressure gas, the manufacturers of pressure outfits contending that you save oxygen by using their type of generators and that you cannot get so near to a neutral flame with the low pressure gas as you can with the high. The makers of the low pressure outfits claim that by the use of an injector embodied in the torch or welding head, a neutral flame can easily be obtained. We find we can obtain a flame as nearly neutral as can be obtained, with the outfit we use, although with pressure gas you can obtain a much larger flame for the same sized head than with the low pressure. The principal factor, however, that made us decide on the low pressure outfit was the fact that our main supply pipes are carried overhead throughout the shops, and as nearly all, if not all, oil, steam and water pipes are overhead, we had to consider a very well known motto, viz., safety first, for if a man was working overhead and by mistake broke a joint of the gas pipe, his torch or candle might cause an explosion which might wreck the shop. Though we have been using acetylene gas for eight years, we have never had an explosion of any sort. Our low pressure generator went through a big fire two years ago, and we were enabled to repair it and use it for several weeks, till we received our new outfit.

There are many kinds of electric welding outfits on the market, and, of course, each one is claimed to be the best by its respective makers; each has its advantages and, whisper it, its disadvantages, and the old prejudice very often exists among operators that the machine they are using and are familiar with is the best, and they will stick to that opinion until they become accustomed to a new machine. A new equipment, using alternating current instead of the direct current, is now being put on the market, and only weighs 150 lb., and gives from 20 to 200 amperes, and is about 50% cheaper than any d.c. machine on the market. The electric welding outfit consists of two generators, each operating four welding circuits; the shops are wired and at convenient places

connection boxes are placed, and only need a lead and ground wire connected to them and the work on which the welder is engaged. The outfit used has panel controls, which allow each man to control his amperes independent of the other welders.

The processes have proved themselves fit to be ranked amongst the greatest time and labor savers, and also we may safely say money savers, introduced for a long period. For instance, in the not very distant past, a locomotive with a broken frame had to stay several days in the shops before the men could strip down one side and remove the frame to the smith's shop, weld it and perhaps have it machined and then replaced. Now we drop the pair of wheels which may cover the break, cut out the crack with the cutting torch, to the shape of a double V, at an angle of 90°, clean off the oxide caused by cutting, and weld up with the metal electrode, using soft steel or Swedish iron, a frame 4 x 5 in. being cut and welded in under 14 hours, and it can be done in less time by having two operators on the frame at once, but the men do not like facing each other's arcs, as when they are changing their filling rods their eyes get sore.

Frames, when worn by brake gear and stays, are built up, and worn holes are plugged and welded, instead of reaming them out to a larger size and thereby weakening the frame. In rebuilding and superheating engines, the same boilers are seldom used on their original frames, and as in very few cases do the various holes in angle irons, furnace bearers, etc., come into alignment with frames or boilers, the holes are welded up and redrilled.

The present price of tool steel demands that none shall be wasted, therefore we use it down to the last inch, by welding it to tire steel. Twist drills, taps, and reamers, when broken near the socket end, are welded and put into use again. For this purpose we use either the electrode or gas, but in both cases we use vanadium steel filling rods, as we find this gives the best results. Spokes of driving wheels are welded, and flat spots on tires have been successfully welded up when it was necessary to do so.

We have not had much success on cast iron, with the iron electrode, although with the carbon you can make a fair job, but the gas is unquestionably the best for any of this material. We have successfully welded with the gas, steam shovel engine frames, slides and cylinders, by welding in patches of cast iron where worn or broken. When our contract for shells was completed and the lathes that were used for this purpose were being overhauled, it was found that most of the V slide beds were worn down by the tool carriers; these were built up with the gas, which saved machining these beds down in many cases  $\frac{3}{4}$  in.

Most of the boiler welding is done with the iron electrode, using a mild steel or Swedish iron as a filler. It is found that the electric process localizes the heat more than the gas does though it is the writer's opinion that gas makes a closer

and neater weld, as all welds made by the electrode are more or less porous, unless hammered up. It pays better, whenever possible, to do so, to put quarter or half sides, in order to get out of the fire line, in preference to putting in a patch, for, as a rule, however well the patch is welded it generally gives out in from 12 to 18 months service, and the same applies to cracks, whereas the half or quarter side should last as long as the firebox.

When a nest of small cracks is found round the staybolts, the bolts are removed and the holes countersunk and welded up. This method has been found to be very successful. Corner patches are welded in by running the patch into the tube or back sheets, as the case may be, at the same time removing the flanges. If it is decided to do away with a number of tubes, plugs are welded in the holes, first countersinking the holes and having the plugs punched by a countersunk die which gives the proper bevel for welding.

A great deal of trouble was experienced in welding in the superheater flues and tubes when it was first started, but after a little experience much better success was arrived at. Some operators prefer the tubes belled, and others prefer them beaded; some prefer the water in the boiler and others do not. The operators I am connected with like the belled methods best and with the water in the boiler. This keeps the tube sheet from heating, especially round the smaller tubes. Tubes are set in with copper ferrules set back 1/32 in. and the flues are belled out 3/16 in. to 7/32 in. and the small tubes 3/16 in. The sheet is roughened all round the tubes and flues, and the oil is then burnt off with the oxy-acetylene flame and tubes, and flues welded in with electrode, using  $\frac{1}{8}$  in. mild steel or Swedish iron; the latter is preferred if caulking is needed.

A sample of an average day's work is as follows, for a gang of 12 men: 14 rivet holes in smokebox and 4 peg holes in foundation ring; 10 tube holes in upper portion of firebox tube sheet; 2 air pipes which were worn through. In the tool room: 1 ratchet for jack (2 teeth replaced); 1 gear spindle built up; 1 chuck screw, key end built up; 1 boring shaft built up from 2½ to 2¾ in.; 2 tool holders, rebuilt; 1 air hammer handle repaired; 6 teeth in lathe gear, built in; 1 cone, small end filled up solid; 2 1¼ in. holes in top rail of frame filled up; 4 cracks 18 in. long in right side sheet welded; 14 bottom tube holes built up for re-tapping in round head; cut out frame for welding and started welding same; welded bushes in pony truck stays; cut out 3 sets of boiler tubes; cut out one set of superheater flues; build up caulking edge of fire hole; heated corners of tube sheet for closing; welded broken superheater damper bracket; built up reversing lever where worn; built up 2 side rods where worn; cut out 48 flexible staybolts in firebox; welded 2 cracks in throat sheet. Air brake department: 1 broken flange of air brake cylinder. In addition to this list two men are engaged con-



tinuously on cutting around the shops.

For cutting steel and wrought iron, the oxy-acetylene process has practically no competitor, it being impossible with the carbon point to cut as fast, or as fine and neatly, as the gas torch, although for scrapping fireboxes and frames, the carbon point is cheaper, if time is no object and labor cheap.

The foregoing examples only enumerate a very small fraction of the uses to which the two methods of welding and cutting are being put in locomotive repairing and machine shops and fresh uses are being found for it every day. No locomotive house should be without an oxy-acetylene outfit, both for repair work and as a part of the wrecking outfit, many days are lost by locomotives being tied up through parts having to be sent to the nearest big shops for repair, which could be repaired on the spot with a welding and cutting outfit. All large locomotive houses should have both processes, as they would pay for themselves over and over again. Though there are many different opinions as to which is the best

process, no shop is complete unless it has both equipments, although the gas has really the widest range, but, on the other hand, a heavy piece of steel or iron needs no preheating with the electrode but welding can be commenced as soon as your arc is drawn. Ninety-five per cent. of the failures which occur instead of being laid on the process should be placed on the shoulders of the operators.

Welding should not be treated as a side line of the machinists' or boilermakers' business, but as a trade in itself, as it really is, for it needs the entire concentration of a man's mind, careful study, plenty of practice and a conscientious man to make a welder. Wherever possible a separate building or suitable space should be provided for bench work, and should be equipped with a suitable furnace for heating and annealing castings, and also have plenty of floor room, to allow of charcoal fires being built for preheating cast iron jobs for welding.

The foregoing paper was read before the Canadian Railway Club in Montreal recently.

11, 1863.

Ross Thompson, ex Chief Engineer, and Managing Director, St. John and Quebec Ry., Fredericton, N.B., born at Newry, Ireland, Jan. 1, 1865.

T. H. White, Chief Engineer, Canadian Northern Pacific Ry., Vancouver, B.C., born at St. Thomas, Ont., Jan. 27, 1848.

A. Wilcox, General Superintendent, Central District, Canadian Northern Ry., Winnipeg, born at Kincardine, Ont., Jan. 2, 1865.

### Strength of Oxy-Acetylene Welded Joints.

The Illinois University's Engineering Experiment Station has completed a series of tests of the strength of oxy-acetylene welded joints in mild steel plates. The tests were made in the laboratories at Urbana under three conditions of loading: (1) static load in tension, (in a testing machine); (2) repeated load (bending), and (3) impact in tension (in a drop testing machine).

For joints made with no subsequent treatment after welding, the joint efficiency for static tension was found to be about 100% for plates  $\frac{1}{2}$  in. thick or less, and to decrease for thicker plates. For static tension tests, the efficiency of the material in the joints welded with no subsequent treatment was found to be not greater than 75%. The joints were strengthened by working the metal after welding and were weakened by annealing at 800 degrees C. For static tests and for repeated stress tests, the joint efficiency sometimes reaches 100%; the efficiency of the material in the joint is always less. This indicates the necessity of building up the weld to a thickness greater than that of the plate. The impact tests show that oxy-acetylene welded joints are decidedly weaker under shock than is the original material; for joints welded with no subsequent treatment, the strength under impact seems to be about half that of the material. In general, the test results tend to increase confidence in the static strength and in the strength under repeated stress of carefully made oxy-acetylene welded joints in mild steel plates.

The results of the tests have been published by the Engineering Experiment Station as Bulletin 98, copies of which may be obtained free by addressing C. R. Richards, Director, Urbana, Ill.

**Canadian Northern Ry. Vancouver Station Suit.**—Gibb & Co. have secured a verdict for \$4,000 against Canadian Northern Construction Co. and Carter, Hall, Aldinger Co., for breach of contract. The plaintiffs were to supply certain stone for the building of the C.N.P.R. station at False Creek, Vancouver, for which work the other companies were the contractors. The question at issue was whether or not a contract, as contemplated by the Sales of Goods Act, existed. There was a verbal contract, and a document to which was appended the printed name of one of the defendant companies, with the rubber stamped name of the other, and these two names were connected by the written word "and," which the jury found had been written in by the secretary-treasurer of one of the defendant companies before it was handed to the plaintiffs. Justice Murphy, upon the motion to enter judgment for the \$4,000, declined to give a decision upon the sufficiency of the document as a contract. This matter will be taken to a higher court.

## Birthdays of Transportation Men in January.

Many happy returns of the day to:—  
J. Abrams, Wharf Freight Agent, C.P.R., Vancouver, B.C., born at Manchester, Eng., Jan. 24, 1870.

W. U. Appleton, General Master Mechanic, Canadian Government Railways, Moncton, N.B., born there, Jan. 29, 1878.

R. Armstrong, Superintendent, Souris Division, Manitoba District, C.P.R., Souris, born at Kingston, Ont., Jan. 27, 1865.

L. E. Ayer, General Agent, Canadian Northern Ry., St. Louis, Mo., born at Henderson, Ia., Jan. 11, 1877.

F. X. Belanger, General Freight and Passenger Agent, Temiscouata Ry., Riviere du Loup, Que., born at Chlorydormes, Que., Jan. 20, 1876.

G. McL. Brown, European Manager, C.P.R., London, Eng., born at Hamilton, Ont., Jan. 20, 1866.

F. J. Buller, Cashier and Paymaster, Eastern Lines, Canadian Northern Ry., born at Lindsay, Ont., Jan. 30, 1874.

W. A. Cowan, A.M.Can.Soc.C.E., General Superintendent, Western Lines, Canadian Government Railways, Cochrane, Ont., born at Galt, Ont., Jan. 22, 1877.

J. E. Dahymple, Vice President, G.T.R., G.T.P.R., and Central Vermont Ry., Montreal, born there Jan. 1, 1869.

A. Davidson, Commercial Agent, Grand Trunk Pacific Ry., and G.T.P. Coast Steamship Co., Vancouver, B.C., born at St. Henri, Montreal, Jan. 29, 1885.

G. J. Desbarats, C.M.G., Deputy Minister of Naval Service, Ottawa, Ont., born at Quebec, Que., Jan. 27, 1861.

J. E. Everell, Superintendent, Montmorency Division, Quebec Ry., Light and Power Co., Quebec, Que., born at Cap Rouge, Que., Jan. 1, 1863.

J. E. Giles, Locomotive Foreman, Canadian Northern Ry., Lucerne, B.C., born at Toronto, Jan. 18, 1882.

Gordon Grant, Chief Engineer, Quebec and Saguenay Ry., Ottawa, born at Dufftown, Scotland, Jan. 2, 1861.

G. F. Hichborn, formerly Agent, Great Eastern Fast Freight Line, New York, born at Boston, Mass., Jan. 13, 1875.

C. Hood, Local Freight Agent, C.P.R., Saskatoon, Sask., born at Edinburgh, Scotland, Jan. 20, 1864.

D. W. Houston, Superintendent, Regina Municipal Ry., Regina, Sask., born at Bathurst, N.B., Jan. 3, 1879.

Carl Howe, Traffic Manager, Michigan Central Rd., Chicago, Ill., born at Berrien Springs, Mich., Jan. 11, 1870.

H. J. Humphrey, Superintendent, Brownville Division, Quebec District, C.P.R., Brownville Jct., Me., born at Berrys Mills, N.B., Jan. 26, 1879.

W. C. Hunter, ex-Manager New Brunswick Coal and Ry. Co., now of Montreal, born at St. John, N.B., Jan. 4, 1865.

H. G. Kelley, President, G.T.R. and G.T.P.R., Montreal, born at Philadelphia, Pa., Jan. 12, 1858.

W. J. Lynch, General Manager, Quebec Ry., Light, Heat and Power Co., Quebec, Que., born there, Jan. 17 1882.

C. R. Mackenzie, General Manager's Assistant, Western Lines, Canadian Government Railways, Winnipeg, born at Toronto, Jan. 10, 1883.

John Macrae, Locomotive Foreman, C.P.R., Swift Current, Sask., born at Springburn, Glasgow, Scotland, Jan. 30, 1879.

P. A. Macdonald, Manitoba Public Utilities Commissioner, Winnipeg, born at Gananoque, Ont., Jan. 6, 1857.

William Phillips, Canadian Representative, Cunard Steamship Co., Montreal, born at Toronto, Jan. 31, 1870.

W. Pratt, General Superintendent, Sleeping and Dining Cars and Hotels, Canadian Northern Ry., Winnipeg, born at Sibbertoft, Northamptonshire, Eng., Jan. 18, 1870.

John Pullen, President, Canadian Express Co., Montreal, born at Shepton Mallet, Eng., Jan. 23, 1863.

Ralph M. Reade, Superintendent, City and Quebec County Railways, Quebec Railway, Light & Power Co., Quebec, born at Llanelly, Wales, Jan. 1, 1863.

L. J. Rouleau, Commercial Agent, G.T.R., Quebec, Que., born at Montreal, Jan. 6, 1879.

C. Senay, Assistant Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, born at St. Cesaire, Que., Jan. 31, 1873.

A. F. Stewart, M.Can.Soc.C.E., Chief Engineer, Eastern Lines, Canadian Northern Ry., Toronto, born at West Bay, N.S., Jan. 1864.

J. G. Sullivan, M.Can.Soc.C.E., Chief Engineer, Western Lines, C.P.R., Winnipeg, born at Bushnells Basin, N.Y., Jan.



## Umbrella Roofs at C.P.R. Stations at Montreal and Quebec.

The C.P.R. has completed recently umbrella roofs over four of its passenger platforms at Place Viger Station, Montreal, three being each 496 ft. long and one 403 ft. long. The baggage platforms which occur between each passenger platform are not covered. The umbrella roofs consist of reinforced concrete throughout. The posts are symmetrical 2-armed units,

face and gives a very pleasing effect from below.

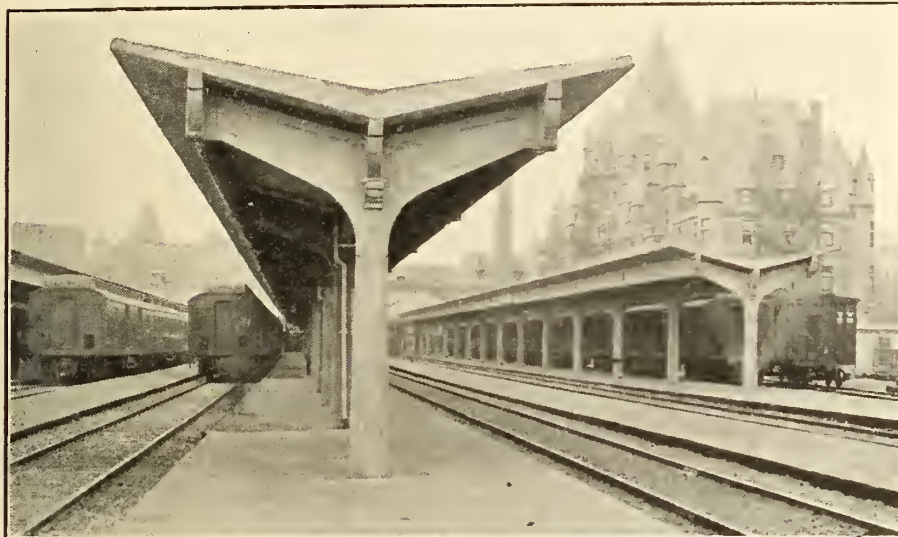
Where down pipes occur in the roof, the Siegwart beams were made of shorter length and trap castings were cast into a small section of solid concrete poured on the work. The rain water pipes are of Toncan metal and are located at every second panel, 62 ft. c. to c., and connect

was done immediately the forms were taken off, by rubbing down with sand and wooden floats. The structural steel hangers were manufactured previously in a structural shop, and after erection they were painted to match the general color of the concrete.

The wiring for the whole structure is laid in standard conduit work, with the necessary outlet boxes. The conduits pass through pre-cast holes in the posts, and two lights per panel are attached to fixtures on the lower side of the centre purlins. This gives ample light at night, and the fact that the outer edges of the roof slabs are 18 in. above the top of cars, provides ample light during the day, even when both tracks adjacent to a platform are occupied by trains.

Similar work was carried out at the Union Station, Quebec, in substantially the same manner as described above for Place Viger, with a few exceptions, one of which was that a few of the posts were poured on their sides, and were lifted up later and grouted into the pockets already referred to in the pedestals. Generally, however, the posts were cast in a vertical position, after the reinforcement had been put together and stood up in its final vertical position. This method was found more convenient, from the point of view of maintenance of traffic on platforms. The roof slabs are of mill construction, 3 in. thick timber instead of Siegwart beams as at Place Viger.

The accompanying illustrations show the general appearance of the finished work, including the connection of the new platform covers with the existing midway space at Place Viger station. This consists of 1½ in. mortar work, floated on expanded metal reinforcement attached to the existing structural steel work, which gives a pleasing appearance, as can be seen from the illustrations, from both inside and outside of the midway.



Umbrella Roofs, Place Viger Station, Canadian Pacific Railway, Montreal.

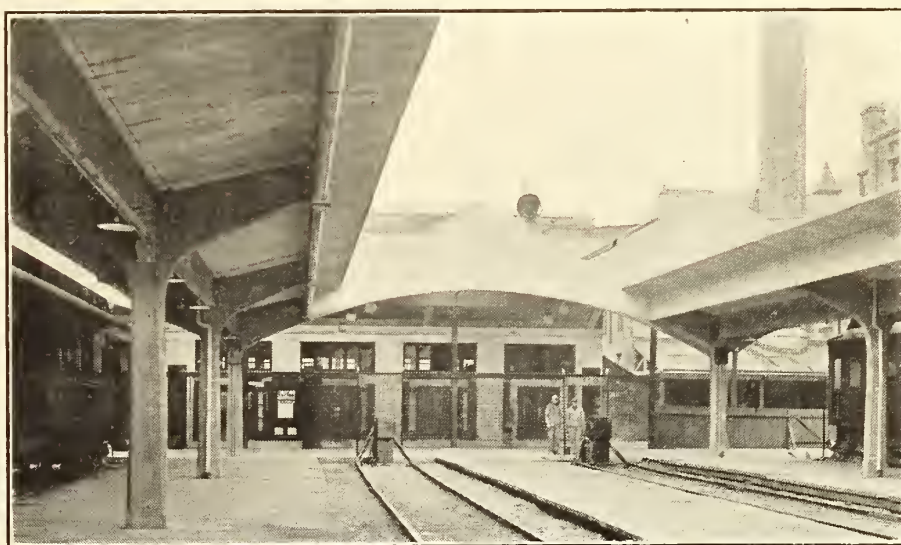
on which are supported reinforced concrete purlins, which in turn support the reinforced concrete roof slabs, which are waterproofed with the usual membrane and asphalt covering. This unit system of construction, constitutes a very interesting, and what is believed to be, an original method of construction.

The actual method of construction was as follows: The pedestals were first built in their proper locations, an oblong pocket 1 ft. x 1 ft. 10 in. being left in them for the reception of the posts, which were intended to be manufactured as units, and later to be inserted and grouted into the pockets. It was found, however, in some cases, more economical to erect the reinforcement as units in the pockets, clamp the forms around them, and then, when all adjustments had been made, to pour the concrete from a travelling crane platform. After the forms had been removed, the structural steel slings were put in place. In the meantime the purlins had been cast as units in the yard and they were erected from the same traveller. This having been accomplished, the reinforced concrete roof slabs were laid as if they were ordinary mill construction wood work. All reinforcement of the posts and purlins consisted of rails, bent where necessary, and securely attached to one another. This construction lent itself readily to a systematic and speedy erection. It allowed the work to be proceeded with without interfering with passenger traffic on the platforms, or with train operation on the tracks.

When the skeleton was erected the roof slabs were lifted up into place from the deck of a flat car by a light travelling crane. These roof slabs are of special construction known as Siegwart beams, a Belgian design. They are 4 x 12½ in. wide. They were specially manufactured with one end closed and all lower edges had a ½ in. chamfer, which gives the impression of a series of V joints 12½ in. apart. This served to break up the sur-

with the existing drainage system in the yard.

The roof covering consists of a membrane, composed of 5 ply roofing felt, laid in pitch, with a continuous galvanized iron reinforcing piece along the edge of the roof; the function of this reinforcing piece being to keep the membrane in contact with the end of the roof slab and prevent a tendency to curl up. In addition to



Umbrella Roofs, Place Viger Station, Canadian Pacific Railway, Montreal.

this it provides a uniform drip edge which extends ¾ ins. below the lower surface of the slab. Details of the manner in which the first layer of roofing material was folded back and attached to the upper side of the membrane are clearly shewn on the plans. The upper surface of the membrane is protected against abrasion by snow shovelling, by a layer of asphalt.

The surface finish of the whole work

The work at both Montreal and Quebec was executed under the supervision of J. M. R. Fairbairn, Assistant Chief Engineer, the designs being made by P. B. Motley, Engineer of Bridges, and the work was carried out by J. E. Beatty, District Engineer. The Atlas Construction Co. were the contractors for the Montreal work, and the Byers Construction for the Quebec work.



## Increased All Rail Freight Rates from Eastern Points to Port Arthur and the West.

Canadian Railway and Marine World for July published general order 210, passed by the Board of Railway Commissioners, dismissing complaints of Winnipeg, Calgary, Regina, and Saskatoon Boards of Trade and the Canadian Manufacturers Association, against Tariffs C.R.C. 3 and 4, effective Sept. 1, 1917, filed on behalf of the railway companies by the Canadian Freight Association's Manager, providing increased all rail freight rates from Eastern Canada to points west of and including Port Arthur. Following is the full text of the judgment, given by Commissioner McLean, and concurred in by the Assistant Chief Commissioner, D'Arcy Scott.

Judgment was given by the board on March 29, 1917, finding that certain increases proposed on local lake and rail rates from stations in Canada to Fort William and other lake ports were reasonable, and said rates were allowed to become effective April 2, 1917. The relation of the lake and rail rates, which were thus allowed to become effective, to the water rates are set out in the judgment as follows: "The new lake and rail rates will so far as is known be the following number of cents per 100 lb. over the maximum all water rates for the season of 1917 in the classes mentioned: 1st class, 5c; 2nd class, 4c; 3rd class, 4c; 4th class, 3c; 5th to 10th classes, inclusive, 2c. And the proposed rates will be under the present all-rail rates to Fort William, 45c per 100 lb. first class, and 12c per 100 lb. 5th class from Toronto; and 35c first class and 7c fifth class from Montreal."

Thereafter tariffs were filed by the Canadian Freight Association providing for increases in rail, lake and rail rates from points in Eastern Canada to points in Western Canada, to become effective April 23. The scope of these rates was set out in the Assistant Chief Commissioner's judgment of April 7, 1917. As explained in this judgment, the situation was as follows: "In framing the new tariffs, the railways have not increased the proportion of the rate covering the rail haul from the head of the lakes to destination. Therefore, the advances that are proposed in the new tariffs are the same to all points west of Fort William. As an example, the proposed class rate to Winnipeg and to Vancouver both show the same advance in each class. The class rates advances to all points west of Fort William are for 100 lb. 1st class, 6c; and, 3rd and 4th classes, 3c; 5th class, 2c; 6th to 10th classes, 1c. Advances ranging from 1c to 6c per 100 lb. in rates on different commodities are proposed in the commodity tariff."

Protests were received from the boards of trade of the western cities and the Canadian Manufacturers' Association's Prairie Provinces' Branch, asking the Board to suspend lake and rail furtherance rates until the railway companies had justified the proposed increases. The position taken by the railway companies was that the increases were concerned with a water competitive situation. The board was of opinion that the action in the local rail and lakes rates case above referred to should not be taken by the companies as a necessary justification for the increase in rail, lake and rail rates to western points; and the opinion was expressed that there might be principles applicable to the proposed western rates, or

circumstances and conditions to be considered which had no application to the local rates to Fort William. The matter was suspended so that further representations of the parties interested could be hearing in the west. Sittings were held in different western cities; and thereafter general order 197 was issued permitting the tariffs as filed to become effective, with the exception of rates on sugar to Port Arthur, Fort William and Westfort for furtherance, said excepted rates being limited by the proviso that the existing rail and water rates on sugar to Port Arthur, Fort William and Westfort were to be continued in effect until further order by the board.

The subject matter of the present complaint relates itself to what has been above set out. Effective Sept. 1, 1917, tariffs were filed advancing all rail, class and commodity rates to points west of Fort William and Port Arthur. The history of the class rates involved is set out in detail later on. There are three sets of routes and rates involved in connection with a movement for furtherance beyond Fort William; first of all, there is the lake route and rate; then comes the lake and rail route, with a rate exceeding the lake rate by a given difference; and then there is the all rail route and rate, which rate exceeds the lake and rail rate by a given difference; this for a period of years, as later explained, having been 25c. What is involved in the rates which are the subject matter of the present complaint is that the lake and rail rate for furtherance having been increased by 6c on 1st class, the all rail rate is increased by the hitherto existing differences between the lake and rail and all rail rates; i.e., the first class rate would become 81c instead of 75c as hitherto. The other classes scale in proportion. The rate to a point beyond Fort William from the east is made up of the addition of the all rail proportional, as referred to, to the rate from Fort William west. Increases are also set out in the case of commodity rates. In the case of iron ore, brick, charcoal, salt cake, the rates have been advanced 1c per 100 lb., 10th class. Other articles which are moving under commodity rates have also been advanced 1c, which is the advance proposed in the 7th class. Fifth class commodities have advanced 2c, which is the advance proposed in the 5th class rate. Where the same commodity is shown in both tariffs 3 and 5, 3 being the lake and rail and 5 the all rail, the same advance is made in the all rail rate as in the lake and rail, with the exception of bog iron ore, where no advance was made in the lake and rail rate, as last season's lake and rail rates were on the all rail basis. The list of commodities carried in the all rail tariff is more extensive than that contained in the lake and rail tariff. The general relation may be summarized. When a commodity is common to both tariffs, the increase in the all-rail does not exceed the lake and rail. When the all-rail tariff carries a commodity not contained in the lake and rail tariff, the increase, if any, has as its maximum the increase in the class in which the commodity is rated in the classification.

An application for suspension was made. The provisions of the board's regulations as to suspension of tariffs having in the board's opinion, not been met, it was decided that a prima facie case for

suspension had not been made out. As to the procedure that the board has adopted in regard to suspension, reference may be made to the complaint against the proposed rate on canned goods and hardware consigned to points on the Pacific coast, also to the Regina Board of Trade's complaint against proposed tariffs increasing minimums and rates on carload traffic from West Coast to Regina, Sask.; and complaint of H. G. Smith, Limited, Regina, Sask., against C.P.R. tariffs or supplements to existing tariffs, advancing freight rates on dried fruits and canned salmon from Pacific Coast points to Regina. The matter was set down for hearing at Ottawa to be spoken to, and it was also spoken to at Calgary, Edmonton, Saskatoon, Regina, Winnipeg and Fort William.

The matter was spoken to by the railways' representatives at the different points. The general position taken by them was that the situation was a water competitive one. It was set out that the all rail rates had been reduced from a higher basis to a lower basis because of water competition; and it was contended that rates having been reduced to meet water competition, the companies were within their rights, under the Railway Act, in increasing the rates when the water competition was less active.

The position taken by the boards of trade was, in substance, that the increases proposed should be justified both from a cost and from a necessity basis. To the plea that a water competitive condition created a special set of circumstances, the boards of trade in general rejoined that the same conditions as to justification arose here as in regard to rates where water competition was not pleaded. The Edmonton and Fort William boards stated they had no protest to make. At Regina, it was stated on behalf of the Moose Jaw Board of Trade that the increases were so slight that no objection would be made by it. At the hearing at Winnipeg, the Manitoba Government was represented; and its counsel stated, in substance, that the plea as to competitive conditions on the lakes was untenable and that the rates charged had been so adjusted that there was no competition in effect.

The board has recognized the effect of water competition. In the decision in the Western Rates Case, 17 Can. Ry. Cas., 123, the board used the following language: "So far as water competition is concerned, it has been recognized over and over again that the extent to which water competition shall be met is in the discretion of the railway. The board has also held that it is the privilege of a railway in its own interest to meet water competition, and, further, that it is not the privilege of the shipper to demand less than normal rates because of such competition, unless the railway in its own interest chooses to meet it. The principle of water competition has been again recognized practically by all rate regulating commissions. Reference, however, may be made to the board's judgment in Canadian Oil Cos. v. G.T., C.P. and C.N.R. Cos., 12 C.R.C., 351, and the Blind River Board of Trade Case, 15 C.R.C. 146."

In the board's decision in the matter of lake and rail rates from stations in Eastern Canada to Fort William and other lake ports, above referred to, the following language was used: "The justi-



fication of the proposed increases submitted by the railway companies was that the rates sought to be increased were exceptionally low rates put in to meet water competition, which the companies had the right to cancel or increase at any time they decided to disregard the water competition, and that conditions had so changed that the railway companies did not desire any longer to meet water competition. \* \* \* The board has no jurisdiction over the rates charged or the division of lake and rail rates demanded by the different steamship companies operating boats on the St. Lawrence or the Great Lakes, other than the rates on steamers operated by the C.P.R. I understand the steamship companies desire to charge higher rates during the coming season than they have been charging in the past. The extraordinary demand for ocean tonnage, due to the war, has caused the Canada Steamship Lines, the corporation which operates the largest number of boats on the lakes, to remove its largest and best lake boats and put them into ocean service. Doubtless other lake boat owners have done the same thing. The result is a scarcity of tonnage on the lakes. With increased water rates and a scarcity of lake tonnage, it is only natural that the railway companies should decide that the present was an opportune time to cancel their old water compelled rates. \* \* \* As already indicated, the railway companies may in their discretion meet water competition if they see fit to do so, and may also determine the extent to which they shall meet it; and, therefore, the board cannot interfere with the tariffs filed."

The board's decision in the Western Rates Case recognized the pervasive spread of water competition east of Port Arthur and Fort William. It said: "In the matter of water competition, there can be no doubt at all as to the efficiency of the waterways spread through Eastern Canada, from its easterly coast, and terminating with the western limit of the most westerly division of the east—at Port Arthur and Fort William."

Again, it dealt in the same judgment with water competition in extenso, to which reference may be made. One sentence may be taken as indicative of what was set out: "There can be no doubt whatever, as I have already pointed out, of the fact that, generally speaking, water competition in the east is effective."

The board has thus recognized water competition as having a determinative effect in connection with rates east of Fort William. The position has been taken that competitive conditions as between rail and water carriers do not exist, and that this is evidenced by the fact that certain differences between the scales of rates concerned have since 1908 existed without change; and it was argued that even in normal times there was no effective water competition on the Great Lakes.

In the sittings of the House of Commons committee on the Railway Bill, evidence was given during May, 1917, regarding a proposition to give the board control over lake carriers, in addition to those which are at present subject to the board's jurisdiction, on the ground that they are owned, chartered, maintained, used or worked by railway companies. The position that there should be such control put in the board's hands was favored by various fruit and vegetable growers' associations in Ontario and British Columbia, and was also supported by the Grain Growers' Grain Co., the United Farmers of Alberta, and the Manitoba

Grain Growers' Association. The measure was opposed by a considerable number of boards of trade, shippers' organizations and individual shippers. The Toronto Board of Trade opposed the proposition, on the ground that it wanted water competition to be as free and untrammelled as it was in the absence of the proposed legislation. The Chatham Board of Trade, in opposing the legislation, said it favored "free and unmolested traffic on inland waters." The Mayor of Chatham said that most of the shippers were opposed, since they thought the present elasticity was preferable. The Border Chamber of Commerce, representing the Ford, Walkerville, Windsor, Sandwich, and Ojibway Boards of Trade in submitting their opposition said the freedom of trade and competition on the waterways should remain free to every one. Opposition to the proposal was submitted by the Sarnia Board of Trade, which said the legislation would "cause undue and undesirable restrictions on the freedom of trade and competition on the waterways." The Hamilton Board of Trade, while not expressing a final opinion, as it had not had time to compile sufficient data, said it felt it would be "a mistake to hamper the present steamship arrangements." The Quebec Board of Trade, in opposing the proposal, said the result would be that "our shippers would lose the advantage of competition during the season of navigation." The Montreal Board of Trade, said that "the jurisdiction of the Board of Railway Commissioners would tend to limit competition between the water carriers themselves, which in turn would tend to decrease the competition between water carriers and railways;" and it also said that it did not believe that in respect of water borne traffic there should be any controlled rates. Mr. McMaster of the Steel Co. of Canada, who appeared as spokesman for the Montreal Board of Trade, was queried by the Minister of Railways as to the existing situation in which rates had increased because of scarcity of ships, and in reply, said: "That question would take care of itself. These waters are free; it only needs the investment in one, two or three steamers to enable a man to take part in that traffic, and if the rates are so promising and remunerative men will be willing to invest their capital in that enterprise; the traffic is open to anybody to take part in it." Mr. Tilston, who appeared for the Montreal Corn Exchange, expressed the opinion that "there was not the slightest doubt that the waterways do compete with the railways and influence the railway rates." The Kingston Board of Trade's marine committee expressed the opinion that competition on the lakes was necessary in the best interests of the Dominion. The Winnipeg Board of Trade, in protesting against the proposed control, telegraphed: "Proposed legislation place all water carriers plying between Canadian ports under jurisdiction of the Railway Commission in the matter of rates is measure so detrimental to interests of this country that Winnipeg Board of Trade desires to protest most emphatically against it. To us it looks as though parliament would say to shippers: 'There shall be no competition in rates for evermore.' Please have this bill killed at the earliest possible moment."

The position of the Canadian Manufacturers' Association, as presented at the hearing, was, in summary form, that the legislation as suggested would to a very large extent destroy competition. Mr. Walsh, on behalf of the association, said: "My argument has been against any in-

terference at all with the waterways. We say they have been made free to the people of Canada for the purpose of affording some kind of competition, and I think if you place these carriers under the control of the Board of Railway Commissioners you are going to kill initiative to a very considerable extent and wipe out the smaller carrier." In answer to Mr. Armstrong he said, in substance, that the manufacturers whom he represented had their primary interests in the westbound movement. Representations were made by different shippers. The Dominion Glass Co. protested against any legislation which would "in any way interfere with the freedom of these boats to name such rates and charges as they see fit. \* \* \* it would absolutely prevent the making of fair rates to such points as are most favorably located as far as water shipments are concerned." The Dominion Sugar Co., of Chatham, in opposing the legislation, said "So many varying conditions enter into water traffic that we believe waterways of Canada should be open and free to every one." The Western Salt Co., of Courtright, Ont., in opposing the legislation, said it would be detrimental to their interests and the interests of other shippers. The legislation was also opposed by the Thor Iron Works, of Toronto, and by the International Harvester Company. Protests against the legislation were made by various grain companies doing business in Winnipeg. Parrish & Heimbecker, while recognizing that there were very few boats left on the lakes, opposed the proposal to place the traffic under the commission, on the ground that it would restrict competition. The Canada Atlantic Grain Co. of Winnipeg said "Such an act would practically eliminate competition on the lakes in so far as the movement of grain between Canadian lake ports is concerned." What is said is of interest in showing the most recently recorded detailed opinion of shippers' interest in regard to the rate situation on the lakes and adjacent thereto as affected by water competition.

In dealing with a competitive rate situation, the board had before it in *Dominion Millers' Association v. G.T.R. and C.P.R. Cos.*, 12 Can. Ry. Cas., 363, a condition where competitive joint rates and furtherance rates had been increased by the railways, the justification advanced for this increase being the lessening of competition; and it was recognized that it was within the discretion of the railways to vary their competitive joint rates or competitive joint furtherance rates within the limits fixed by the normal rates, subject, of course, to their meeting any attack made on any of the rates so changed on the ground that they are discriminatory.

Prior to 1908 and as far back as the board's records go, viz. to 1904, the spread between the lake and rail and all rail class rates to points west of Fort William was as follows:

	1	2	3	4	5	6	7	8	10	classes
From Toronto points . . . .	40	33	22	11	10	5	10	10	10	cents
From Montreal points . . . .	55	47	32	18	16	10	15	15	15	"

In 1908, the all rail rates were reduced and were made the same from Toronto and Montreal points, the spread being as follows:

	1	2	3	4	5	6	7	8	10	classes
	25	20	14	10	6	5	5	5	5	cents

This spread has been continued from 1908 into the present tariffs and that under review. The regular tariff from the head of the lakes west is common to both routes. The previous through lake and



rail rates were the sum of the Toronto-Fort William lake and rail rates and the current tariff from Fort William west, applied from both Toronto and Montreal points; in other words, the through rates were the combination of the locals on the Toronto basis. (The Fort William locals from Montreal were and are higher than Toronto, by 10c in the 1st class and 5c in the 5th.)

The new through lake and rail rates permitted to become effective by the Board's General Order 197 are not up to the full Toronto basis combination, so that, relatively speaking, they are lower than hitherto. The new Toronto-Fort William locals are

1	2	3	4	5
60	53	45	38	30c

while the through rates are based on—

1	2	3	4	5
56	47	41	34	27c

The through all rail rates, on the other hand, bear no relation to the all rail locals to Fort William; they are related to the lake and rail rates, the relationship being expressed by the spread above referred to. The all rail rates to Port Arthur and Fort William, for local deliveries, in force since 1908, and the proportionals to the same points on which the through rates are based, are shown below as "present," and those under review as "new"—

	1	2	3	4	5	6	7	8	10	classes
Present locals	105	85	70	50	42	36	36	35	35	cents
" proposals	75	64	52	41	31	30	25	25	25	"
New locals	111	89	73	53	44	37	37	36	36	"
" proposals	81	67	55	44	33	31	26	26	26	"

In order to determine whether the new local rates to Fort William are reasonable, compared with the rates allowed by the board in the Eastern Rates Case, predicated though they were on the lower so-called "town" or Schedule A scale, the longest single line haul available for the purpose is that from Windsor, Ont., to Megantic, Que., 726 miles. The most important, and the base, class is the 5th. The 5th class rate Windsor to Megantic is 38c. Tapering this rate in accordance with the approved Eastern Standard Mileage Tariff (the only one in true proportion) for the distance, Toronto to Fort William, viz., 814 miles, the result is 44c, which is the exact 5th class rate proposed from Toronto to Fort William. For the extreme distance from Montreal to Fort William, viz., 998 miles, the result would, of course, be greater, it would be 57c. Tapering the Fort William 5th class rate to the Toronto-Winnipeg distance of 1,233 miles, the result is 76c, while the proposed rate is 71c. In this instance, the result from Montreal would be the same, viz., 76c.

So far as the proportions west of Fort William are concerned, the rates west of Winnipeg to the Pacific Coast are in accordance with the scale prescribed by the board in the Western Rates Case. The board has more than once stated that comparisons with rates in United States territory are not conclusive of the reasonableness or otherwise of Canadian rates, unless the conditions are on all fours. Subject to this caution, reference to rates in similar U. S. territory, while not conclusive, may be informative. The 1st class lake and rail basing rate from Toronto to Fort William is 56c. This is the same as the all water rate from Buffalo to Duluth. The all rail rate from Buffalo to Duluth is not strictly comparable with the all rail rate from Toronto to Fort William, as in the former case the rate is made on Chicago, involving at least a two-line movement. Subject to this caution, it may be pointed out that the all rail rate from Buffalo to Duluth is \$1.12; the all rail local rate from Toronto to Fort William is \$1.11. The rate from

Buffalo to Chicago, through dense traffic territory, is 62c first class for 536 miles. If this rate is tapered on the eastern standard tariff for 814 miles, in the same way as above set out, the result would show a rate of \$1.04, as compared with 81c in the new tariff.

In dealing with the eastern rates situation as affected by water competition, it was said in the Western Rates Case, 17 Can. Ry. Cas., 159-160: "It should, however, be borne in mind that while water competition is urged as being a reason for a low rate standard in the east, the water rate with resultant low freight has probably played a greater part than any other factor in the prosperity of the West. The additions to water facilities which from time to time have been made are largely demanded by the necessities of providing the cheapest and quickest outlet for the ever-increasing productions of Western Canada. This affords but an additional instance of the fact that the interests of Eastern and Western Canada are closely interwoven, and that an enforced lower rate structure in the East is not as much productive of injury to the West as has been claimed."

In the Eastern Rates Case, the following language was used: "In general, a case for increase has been made out. Apart from the merits of the application, having regard to the situation in Eastern Canada alone, the general railway situation in Canada demands that eastern rates should be increased when the different industries can fairly and reasonably bear such increases. While, as has been set out at greater length in the Western Rates Case, differences of conditions do exist between Eastern and Western Canada, and while western freight rates have already been materially reduced, the general schedule there obtaining is still higher, notwithstanding the fact that certain western rates that may be instanced are lower. There is no doubt but what the act requires, and the general public interest of the country as a whole demands, that, if practicable, eastern rates should be advanced so that the different schedules may more nearly approach a parity. I am aware that an absolute parity is impracticable, but, as conditions become similar, a reasonable parity ought to be obtained."

While the class rates concerned are rates for a movement within the territory east of Fort William, they affect the west, because they are furtherance rates. The rates as charged are concerned with a movement through an area in which water competition exists, although because of altered conditions water competition is not so effective at present as it once was, and the difference in level of the rates as now before us is a measure of the difference in the efficiency of competition. As already pointed out, the board has laid down the position that a rate reduced to meet water competition may be brought up more closely to the normal level when the water competition becomes less effective. As tested by a tapering on the basis which the board has affirmatively approved as reasonable, the proposed rates meet the conditions of this basis. The rates may be permitted to continue.

**Railway Smoke.**—The Windsor, Ont., City Council instructed the city solicitor recently to take proceedings against the Grand Trunk Ry. in order to have the smoke nuisance from its locomotive house abated. It is claimed that the smoke has caused a depreciation of \$200,000 in the value of adjoining house property.

## Transportation and Storage of Grain.

A Dominion order in council passed in June and only promulgated recently, providing means whereby grain grown in Canada in excess of domestic requirements may be made available for purchase by the British and allied governments, and so that domestic requirements may be controlled in such a manner as to prevent any undue inflation or depreciation of values by hoarding supplies, or by other means. For this purpose the Board of Grain Supervisors of Canada, is established, consisting of not more than 12 members, who shall be paid travelling expenses while engaged on the board's duties, but shall receive no other remuneration.

The board shall make investigations from time to time to ascertain what supplies are, or will be, available, the location and ownership of such grain, the transportation and elevator facilities in connection therewith, as well as the conditions of marketing and the market price, and for such purposes shall have the powers of a commissioner under the Inquiries Act.

The board shall have power to fix the price at which grain stored in any elevator may be purchased, and the conditions and destination under which the grain may be moved, and also what grain may be sold to milling firms, what grain shall be sent to the United Kingdom and allied powers, and shall facilitate at all times the transportation and delivery of grain in excess of domestic requirements. Any prices fixed by the board are to be subject to the chairman's approval. The board may appoint an executive committee of not less than three, of whom the chairman shall be one, and may assign to the executive committee its duties and powers.

The board shall have power to receive offers for the purchase of grain from millers, and from the Wheat Export Co., Ltd., or from any other person or company referred to as "overseas purchasers," acting for the United Kingdom or the allied powers, and it shall fix the prices at which the grain shall be sold. It shall also have power to take possession of, and sell to millers or overseas purchasers, grain stored in any elevator, and to pay to the owners the proceeds of such sale after deducting the expenses of taking possession and of delivery, and as far as possible shall fix a uniform price throughout Canada for grain of the same quality, and grade.

Notwithstanding anything in the Grain Act, or the Railway Act, the Board of Railway Commissioners shall have power to order any railway to provide cars and other transportation facilities for grain handled by the Board of Grain Supervisors. The word elevator in the order, covers any terminal, country, private, public and hospital elevator, and any elevator licensed by the Board of Grain Commissioners.

Power is also given to appoint representatives, clerical staffs, etc., and to create a fund for defraying the cost of carrying wheat in store, where no other provision is made to meet the cost, or for any other purposes, and in order to raise the necessary money the board may require millers, exporters, etc., to pay such sums as it may prescribe, not exceeding 4c a bushel.

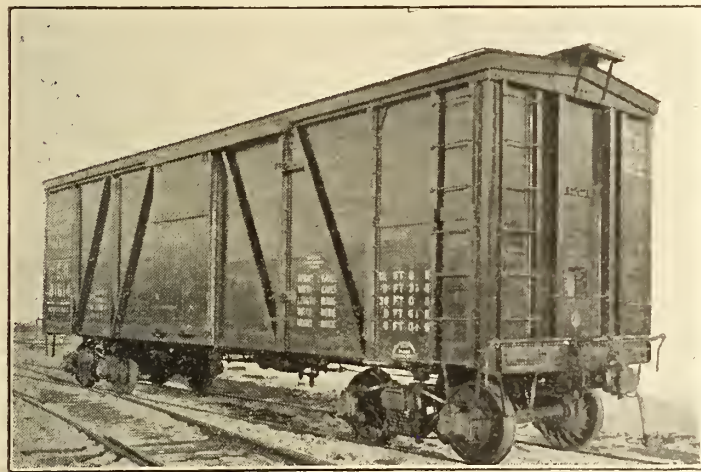
Railway time tables are being revised to eliminate unnecessary service.



## Forty-Ton Box Cars for Canadian Government Railways.

The 5,000 forty-ton box cars which the Canadian Government Railways have ordered from Canadian Car and Foundry Co. during the past few weeks have the following general dimensions: Length inside, 36 ft.; width inside, 8 ft. 6½ in.; length inside, from pulling face of couplers, 40 ft. 1¼ in.; from centre to centre of truck, 26 ft. 10 in.; height from rail to top of running board, 13 ft. 4¾ in.

The cars are of the inside sheathed steel frame type, underframe consisting of two 15 in. channels and 8 in. side sill channels, having bolsters and crossbearers built up of pressed steel diaphragms, with top and bottom cover plates, together with Z bar floor supports, conveniently spaced; all of which in turn support Z bar stringers, running from end sill to end sill, forming support for wooden floor. The side framing is built up from structural shapes, securely riveted to side sill and side plate. The cars have an exceedingly strong end frame consisting of two 5 in. Z bars and two 3 in. Z bars, together with 5 x 5 in corner post; the Z bars being



Forty-ton inside sheathed box cars for Canadian Government Railways.

riveted to the inside face of end sill and top of the pressed steel end plate. All of the cars are being equipped with one rail end door, located 2 ft. 1½ in. from top of floor, to centre of door, facilitating easy loading of rails, also door at top of car at ends for loading lumber.

Four thousand of the cars will have a special application of brakes. The truck bottom connection, instead of passing under spring plank, as in ordinary cases, is connected to the centre hole truck lever connection, passing through the truck directly above the truck bolster tension plate. By this arrangement all the truck brake rigging is located above the bottom of the spring plank. This arrangement also allows for an adjustment of brakes to take place at the fulcrum lever instead of the old system at the top of the dead lever, and instead of having two points for adjustment, it will be only necessary to take up any slack or make any adjustments to the brakes at one point.

**Oil Fuel on Indian Railways.**—The Indian Government has entered into a contract with the Anglo-Persian Oil Co., for a supply of fuel oil for locomotives on the Karachi section of the North Western Ry. Only a small percentage of the locomotives on this section have been converted into oil burners, but it is intended to convert all of them.

## Track Section Prize Competition on Eastern Lines, Canadian Pacific Railway.

For the past five years an annual track section prize competition has been carried out on the Eastern Lines, C.P.R., which has aroused a healthy spirit of rivalry and keen competition among the officers and section forces of the different divisions and districts. Sixty-two prizes are awarded in the competition, as follows:—A General Manager's prize to the foreman having done the best season's work on Eastern Lines. Four general superintendent's prizes, to the foreman on each district who has done the best season's work, exclusive of the winner of the General Manager's prize. Fourteen division superintendent's prizes, to the foreman on each division who has done the best season's work, exclusive of winners of higher prizes. Forty-three roadmaster's prizes, to the foreman on each roadmaster's territory who has done the best season's work, exclusive of winners of higher prizes.

Under this system no man can win

son is usually a criterion of the amount and quality of the work done thereon throughout the season. Where special conditions affect such work they are taken into consideration. Some idea of the care exercised in judging a foreman's work can be formed by following the work in connection with the selection of a prize section. Towards the end of the season, on each of the 43 roadmasters' territories, a section is picked out as the most deserving in point of work done during the season with the material and labor available. These are carefully inspected by the superintendent and resident engineer, who select the best one on each district for inspection by the general superintendent and division engineer. All divisions of a district are covered by these two officers, and the section selected which they consider eligible for the General Manager's prize. The judging for the General Manager's prize is done personally by the General Manager, the Engineer,



more than one prize, and all foremen have an equal chance, as the quality of the work done throughout the season is the deciding factor, and not the actual physical condition of the section at the end of the season. The basis on which the sections are judged is entirely efficiency, and careful consideration is given throughout the season to the condition of, and work done on, ditches, gauge, spiking, line, surface, bolts, rail wear, so far as it can be controlled by the section forces, switches, sidings, right of way and station grounds, track signs, cattle guards and fences. The amount of work done and the hours of labor put in, both by regular force and extra gang, are also carefully considered, and the foreman accomplishing the best work with the least amount of labor—the physical condition of the section, as to grades, alignment, drainage, and character of roadbed being taken into consideration—wins the first prize.

The number of hours of regular labor and the number of hours of extra labor on the section are figured against the number of ties renewed, tie plates installed or changed, rails changed over on curves and ditching done, etc. The amount of track handled, right of way, spikes and bolts is fairly uniform on all sections, so that the condition with respect to these items at the end of the sea-

son is usually a criterion of the amount and quality of the work done thereon throughout the season. Where special conditions affect such work they are taken into consideration. Some idea of the care exercised in judging a foreman's work can be formed by following the work in connection with the selection of a prize section. Towards the end of the season, on each of the 43 roadmasters' territories, a section is picked out as the most deserving in point of work done during the season with the material and labor available. These are carefully inspected by the superintendent and resident engineer, who select the best one on each district for inspection by the general superintendent and division engineer. All divisions of a district are covered by these two officers, and the section selected which they consider eligible for the General Manager's prize. The judging for the General Manager's prize is done personally by the General Manager, the Engineer,

Maintenance of Way, the Assistant Engineer, Maintenance of Way, and district officers.

The following are the successful section foremen for 1917: General Manager's prize, H. Hoyst, section 6, Havelock Subdivision, Ontario District. General Superintendents' prizes: New Brunswick District, Wm. Hunter, section 12, St. John Subdivision; Quebec District, T. Mattingly, section 3, Chalk River Subdivision; Ontario District, Geo. Muma, section 11, Galt Subdivision; Algoma District, J. Purich, section 6, White River Subdivision.

**Railway Lands Patented.**—Letters patent were issued during October, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary and Edmonton Ry. ....	2,560.00
Canadian Northern Ry. ....	478.00
Canadian Pacific Ry. grants ....	196.43
Canadian Pacific Ry roadbed and station grounds .....	3.03
Edmonton, Dunvegan and British Columbia Ry. ....	368.94
QuAppelle, Long Lake and Saskatchewan Rd. and Steamboat Co. ....	2,075.90
Total .....	5,682.30

The Board of Railway Commissioners has approved the Elgin and Havelock Ry. standard maximum freight mileage tariff C.R.C. 3, cancelling its C.R.C. 1.



## The Connaught Tunnel Construction Suit.

The British Columbia Court of Appeal gave judgment at Victoria Nov. 5, dismissing the appeal against Justice Clement's decision fixing the damages in the case of McIlwee & Sons vs. Foley, Welch & Stewart, at \$575,595.78 and costs. The action arose out of an alleged breach of contract in connection with the boring of the C.P.R. tunnel at Rogers Pass, B.C.

The C.P.R. in 1913 let a contract to Foley, Welch & Stewart for the construction of a tunnel about five miles long, with lines connecting it with the C.P.R. main line, in order to secure a better gradient through Rogers Pass. In 1914 the general contractors let a subcontract to McIlwee & Sons, of Denver, Col., for boring the pioneer and heading tunnels. In addition to a general contract price for this work, the subcontract contained provision for the payment of a bonus of \$1,000 a foot for every foot bored in excess of a stipulated amount per month, the limit being fixed at \$250,000.

In Sept., 1914, after McIlwee & Sons had been at work on their contract for four months, and had proceeded with such rapidity that they claimed that they had earned \$215,000 bonus, in addition to the profits of their contract, troubles arose between them and Foley, Welch & Stewart. The engineer for Foley, Welch & Stewart complained that the McIlwees were using too much compressed air for

their machines and fans and hindering the other workmen. After considerable trouble and counter charges by the McIlwees that the chief contractors were purposely holding back the work, the McIlwees were ordered to stop work on the ground of disobedience of instructions given by the chief contractors' engineer. Later, after some six weeks of negotiations, Foley, Welch & Stewart offered to allow McIlwees to resume work. Instead of resuming work the McIlwees entered suit, claiming the full amount of the bonus and profits on the contract. After a protracted trial the judge decided that the McIlwees should have returned to work on Nov. 9, 1914, when invited to do so, and that their failure to return to work prevented them from obtaining damages for breach of contract. He disallowed the claim for bonus, and gave judgment for \$32,000, which comprised damages at the rate of \$600 a day unearned profits for the period from the time of stoppage of work until Nov. 9.

Both the plaintiffs and defendants appealed from the judgment and the B.C. Court of Appeal on Aug. 10, 1915, allowed the McIlwee appeal in full with costs and dismissed defendants' appeal. A majority of the court found that McIlwee & Sons were entitled to the full amount of the bonus claimed and also to all the damages for loss of profits they could show on reference to the trial judge. Subsequently leave was granted to amend the statement of claim in accordance with this finding and this was done, the total

claimed for bonus and damages being put at over \$800,000. Foley, Welch & Stewart then appealed to the Judicial Committee of the Imperial Privy Council, which unanimously sustained the B.C. Court of Appeal's judgment. The Privy Council's judgment was given in Canadian Railway and Marine World for July, 1916, pg. 275.

The case subsequently came up again in a British Columbia court for the purpose of fixing the amount of the damages for which judgment was to be entered. After a lengthy hearing judgment was finally given in favor of plaintiffs for \$575,595.98 and costs. Notice of appeal against the judgment was at once given and as a condition of the consent the defendants were required to pay into court a marked cheque for \$600,000 as security for the payment of the judgment in case the appeal was not sustained. As an additional precaution, the plaintiffs served a garnishee on the C.P.R., attaching the funds due on the contract, which it was stated had not been paid out. This action on the part of the plaintiff was opposed, and the garnishee order was refused by Justice Morrison. The application was then taken to the Court of Appeal and the garnishee order made. So that in addition to a marked cheque for \$600,000, the plaintiffs had a garnishee on the C.P.R. as security for the payment of their judgment if they were finally successful.

Argument on the appeal was heard in Victoria lasting for 10 days. The final result was a unanimous judgment of the appeal court dismissing the appeal.

## Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

26747. Nov. 19.—Authorizing G.T.R. to build bridge across main track at milepost 3.38 from Harrisburg, Ont.

26748. Nov. 15.—Extending to Dec. 15, time within which G.T.R. shall build crossing on road allowance between Cons. 11 and 12, near Stevensville, Ont.

26749. Nov. 19.—Ordering Great Northern Ry. to provide a weekly train service to and from Clayton Spur, via Cloverdale, B.C.

26750. Nov. 20.—Authorizing Railways and Canals Department to divert, temporarily, Lake Shore Road, and built two crossings, at grade, over Niagara, St. Catharines and Toronto Ry. near Ten Mile Creek, Ont.

26751. Nov. 20.—Relieving G.T.R. from providing further protection at Victoria St., Thamesville, Ont.

26752. Nov. 20.—Authorizing G.T.R. to build siding and spur for Ontario Sewer Pipe Co., East Flamborough Tp.

26753. Nov. 19.—Approving agreement Oct. 10, between Bell Telephone Co. and Innerkip Rural Telephone Co., Oxford County, Ont.

26754. Nov. 16.—Authorizing C.P.R. to build siding 3,393 ft. long from Sec. 5, Tp. 1, Range 7, West of 1st Meridian, to International Boundary in same section, near Windygates, Man.

26755. Nov. 17.—Dismissing application of E. S. Newman Co., Winnipeg, Man., for joint rates between C.P.R., G.T.R., and C.N.R., and Edmonton, Dunvegan & British Columbia Ry.

26756. Nov. 19.—Rescinding order 20173, Aug. 26, 1913; and permitting G.T.R. to take up siding therein referred to, at Milton, Ont.

26757. Nov. 21.—Amending order 26615, Oct. 9, re handling of fish by express companies at St. Thomas, Ont.

26758. Nov. 22.—Further extending, ofr six months from date time during which Lake Erie & Northern Ry. pending installation of interlocking plant, may operate over crossing at Brantford, Ont.; crossing to be protected by L. E. & N. R. watchmen.

26759. Nov. 22.—Authorizing G.T.R. to build spur for David Christner, Kitchener, Ont.

26760. Nov. 21.—Authorizing C.P.R. to build spur for G. C. Goodfellow, Outremont, Que.

26761. Nov. 21.—Approving deviation of Essex Terminal Ry., as located but not built, at stake 582-95.16, Sandwich West Tp., Ont.

26762. Nov. 22.—Approving plan and specifications of drain under G.T.R. and across Cedar Rapids Transmission Co.'s lands in Charlottetown Tp., Ont.

26763. Nov. 21.—Authorizing C.P.R. to build extension to spur from Rutley Lumber Co., Regina, Sask.

26764. Nov. 21.—Authorizing James Bay and Eastern Ry. (Canadian Northern) to open for traffic its line from Roberval to end of track at St. Felicien, Que., mileage 13.82 to 30.13.

26765. Nov. 23.—Exempting C.P.R. from submitting gplan, profile and book of reference of revision in line of its Shuswap Subdivision, near mileage 29, and approving same.

26766. Nov. 23.—Amending order 8755, Nov. 25, 1909, re Canadian Northern Ontario Ry. crossing of, and connecting with G.T.R. at Brooklyn, Ont.

26767. Nov. 23.—Amending order July 21, 1905, re crossing of G.T.R. by James Bay Ry. (C.N.R.) in East Gwillimbury Tp., Ont.

26768. Nov. 23.—Ordering Canadian Northern Ry. to maintain former schedule of trains 9 and 10, between Deseronto and Toronto, as directed by order 25427, Sept. 15, 1916.

26769. Nov. 24.—Approving Michigan Central Rd. standard freight mileage tariff, C.R.C. 2725, cancelling C.R.C. 848.

26770. Nov. 23.—Amending order Nov. 12, 1906, allowing Canadian Northern Ontario Ry. to cross G.T.R. spur at rail level to Edwards mill's premises at Rockland, Ont.

26771. Nov. 26.—Approving Elgin & Havelock Ry. standard maximum freight mileage tariff, C. R.C. 3, cancelling C.R.C. 1.

26772. Nov. 23.—Extending for 60 days from date time within which G.T.R. shall erect freight shed at Beauharnois, Que.

26773. Nov. 24.—Ordering G.T.R. to lower culvert under its tracks at South River, Ont., and deepen water course by May 31, 1918.

26774. Nov. 23.—Ordering Town of Virden, Man., to pay C.P.R. \$5,241.22, being half of progress estimate of subway required by order 25751, Nov. 29, 1916, and that security put up by the town be left undisturbed.

26775. Nov. 22.—Authorizing Hull Electric Co. to build spur for R. H. Wright, Aylmer, Que.

26776. Nov. 26.—Approving Northern Express Co. bylaw passed Oct. 13.

26777. Nov. 29.—Authorizing James Bay and Eastern Ry. to build Y at St. Felicien, Que.

26778. Nov. 29.—Amending order 903, Jan. 27, 1906, re crossing of G.T.R. by James Bay Ry. (C. N. R.) near Wishago or Rama Island, Ont.

26779. Nov. 29.—Rescinding order 21232, July 2, 1914, in so far as it restricts Canadian Northern Ry. trains to 22 miles an hour over Vegreville-Calgary line, between mileage 48 and 75.

26780, 26781. Nov. 29.—Authorizing Crows Nest Southern Ry. to build spurs for Adolph Lumber Co., near Mott and near Baynes, B.C.

26782. Nov. 30.—Authorizing C.P.R. to build spur for C. C. Robins, in Lot 6, Sec. 20, Tp. 23, Range 4, east principal meridian.

26783. Nov. 30.—Authorizing Niagara, St. Catharines and Toronto Ry. to open for traffic its temporary diversion in Stamford Tp., Ont., as approved by order 26710, Nov. 5.

26784. Nov. 29.—Extending, for six months from date time during which Lake Erie & Northern Ry. was authorized to operate over crossing in Brantford, Ont., pending installation of interlocking plant.

26785. Dec. 1.—Authorizing C.P.R. to remove station agent at Melville, Ont.

26786. Dec. 1.—Amending order 26722, Nov. 7, re C.P.R. spur for Hydro Electric Power Commission, Toronto.

26787. Nov. 30.—Authorizing C.P.R. to operate over G.T.R. sidings into Libby, McNeill and Luby and Pittsburg DesMoines Co.'s premises, Chatham, Ont.

26788. June 21.—Extending to Dec. 31, 1917, time within which G.T.R. shall complete spur for W. H. Banfield & Sons, Toronto.

26789. Dec. 1.—Approving clearances at siding serving Dominion Cannery, Ltd., St. Catharines, Ont.

26790. Dec. 1.—Authorizing Canadian Northern Ontario Ry. to build spur for Laforest & Clemow, Captha, Ont.

26791. Dec. 1.—Relieving G.T.R. from providing further protection at crossing near Paynes station, Ont.

26792. Dec. 1.—Approving agreement between Bell Telephone Co. and Dunnville Consolidated Telephone Co., Haldimand, Lincoln, Welland, and Brant Counties, Ont., Nov. 6.

26793. Dec. 3.—Authorizing G.T.R. to build spur for National Shipbuilding Co., Goderich, Ont.

26794. Dec. 3.—Rescinding order 26036, Apr. 17, 1917, respecting certain supplements to G.T.R. and C.P.R. tariffs.

26795. Nov. 8.—Relieving G.T.R. from providing further protection at crossing of Albert St., West Hawkesbury Tp. (Wassons), Ont., in so far as its southbound trains are concerned; trees on northwest angle to be trimmed so as not to obstruct view.

26796. Nov. 30.—Ordering C.P.R., G.T.R., Canadian Northern Ontario Ry. and Toronto Ry. to pay City of Toronto \$115,000, \$30,000, \$135,000, and \$80,000, respectively, in addition to any amounts heretofore paid by them, if any, on account of cost of and damages incidental to the elimination of level crossing at Queen St., Toronto, under order 7813; without prejudice to contentions in regard to correctness of accounts submitted, or any item therein.

26797. Dec. 4.—Authorizing C.P.R. to build highway diversion in s.w. ¼ Sec. 14, Tp. 11, Range 10, west 3rd meridian, and close diverted portion of road allowance; and rescinding order 21880, May 26, 1914.

26798. Dec. 4.—Ordering that each of crossings of Devonshire Road by G.T.R. and Pere Marquette



Ry., in Walkerville, Ont., be protected by gates, operated by day and night watchmen; both sets to be operated from same tower, and apportioning cost.

26799. Dec. 5.—Relieving C.P.R. from providing further protection at Millers Crossing, near Smithfield, Ont.

26800. Dec. 6.—Authorizing C.P.R. to build floating raft on north pier of bridge over McKellar River, Port William, Ont.

26801. Dec. 6.—Authorizing Canadian Northern Ry. to cross and divert north and south government road allowance in Mistowasis Indian Reserve 103, Tp. 47, Range 5, west 3rd meridian.

26802. Dec. 6.—Ordering Kettle Valley Ry. to lay a culvert, at least 12 in. diameter, on north side of road crossing in lot 104, Penticton, B.C.

26803. Dec. 6.—Authorizing Toronto, Hamilton and Buffalo Ry. to build spur, for National Abrasive Co., Hamilton, Ont.

26804. Dec. 6.—Authorizing Niagara, St. Catharines & Toronto Ry. to open for traffic its branch from Ontario and St. Paul Sts. to G.T.R. station, St. Catharines, Ont., 4,700 ft.

26805. Dec. 3.—Ordering that crossings of Walker Road, Walkerville, Ont., by G.T.R. and Pere Marquette Ry. be protected by gates, operated from a tower by day and night watchmen; and apportioning cost.

26806. Dec. 5.—Ordering Canadian Northern Ry. to install standard two-car pen at Rochester, Alta.; to be completed by July 1, 1918.

26807. Dec. 5.—Relieving G.T.R. from providing further protection at crossing between Laclede and Henrysburg, Que.

26808. Dec. 5.—Authorizing C.P.R. to build spurs for Macdonald Crawford Co. and Kimball Lumber Co., Swift Current, Sask.

26809. Dec. 7.—Authorizing C.P.R. to build mining entries or ways under and adjacent to Canadian Northern Ry. right of way across Manitoba South Western Colonization Ry. Cos mining lands, in Sec. 19, Tp. 2, Range 6, west 2nd meridian, Sask; plans to be first approved by Board's engineer.

26810. Dec. 6.—Authorizing C. P. R. to build spur for Coast Lumber Co., Moose Jaw, Sask.

26811. Dec. 7.—Extending to May 31, 1918, time within which G. T. R. shall complete sidings for Toronto Harbor Commissioners, in Toronto Harbor Industrial District, as authorized by order 25502, Oct. 5, 1916.

26812. Dec. 10.—Extending to June 30, 1918, time within which G.T. Ry. shall complete station at Lyster, Que.

26813. Dec. 4.—Authorizing Toronto, Hamilton & Buffalo Ry. to divert Phipps St., Thompson Rd., Bowen Rd., and road allowance between Cons. 3 and 4 in lots 8 and 9, Welland and Bertie Tps., Ont.; company to extend Thompson Road subway; and all companies concerned to divert their pole or pipe lines; and reserving apportionment of cost.

26814. Dec. 10.—Authorizing Quebec & Lake St. John Ry. to build bridge at crossing of St. Anne River at St. Raymond, Que.; and rescinding order 25155, July 13, 1916.

26815. Nov. 23.—Ordering C.P.R. forthwith to stop train 356 on affg at Terrebonne, Que., for passengers to points beyond Lanoraie.

26816. Dec. 11.—Relieving G.T.R. from providing protection at Third Canadian crossing in Ops Tp, Ont.

26817. Dec. 11.—Approving plan showing interchange track to be built in Sec. 4, Tp. 39, Range 19, west 4th meridian, Alta.; and ordering Canadian Northern to complete same by Jan. 21, 1918; main line switches to be wire locked with distant signals of interlocking plant, and derrails installed at each end of interchange track.

26818. Dec. 11.—Authorizing G.T.R. to rebuild bridge over track between Lots 5 and 6, Broken Front Concession, Nicol Tp., Ont.

26819. Dec. 13.—Exempting Vancouver, Victoria & Eastern Ry. & Navigation Co. and Northern Pacific Ry. from complying with conditions as to notice and consent of shareholders, and recommending to Governor in council for sanction, agreement dated Aug. 11, 1913, granting N.P.R. right to use V. V. & E. Ry. & Nav. Co. tracks, between Sumas, Wash., and Vancouver, B.C., subject to condition that unless otherwise extended by Parliament, contract shall continue for not exceeding 21 years from Aug. 11, 1913, as limited by Sec. 364 of Railway Act.

26820. Dec. 12.—Authorizing Greater Winnipeg Water District to lay pipe line under C.P.R. at St. Boniface yards, Man.

26821. Dec. 13.—Approving agreement, Sept. 25, between Bell Telephone Co. and Laurentide Telephone Co., Ottawa, County, Que.

26822. Dec. 12.—Approving plans of McKenney drain, to be built under G.T.R. between Lots 25 and 26, Con. 8, Malahide Tp., Ont.

26823. Dec. 12.—Authorizing Grand Trunk Pacific Ry. to build sidings for Edmonton Collieries, Ltd., North Alberta District, Alta.

26824. Dec. 12.—Authorizing C.P.R. to divert road allowance on east boundary of Sec. 26, Tp. 8, Range 18, west 3rd meridian, Sask.; and close diverted portion within right of way limits.

26825. Dec. 14.—Limiting speed of Canadian Northern Ry. trains to 10 miles an hour over Bridge St., Bancroft, Ont.

26826. Dec. 14.—Authorizing C.P.R. to remove station agent at Edrans, Man., caretaker to be appointed to see to express and l.c.l. freight.

26827. Dec. 14.—Authorizing Town of Dunnville, Ont., to build crossings over G.T.R. at Centre and Helena Sts.

26828. Dec. 14.—Authorizing Crows Nest Southern Ry. to build spur for Adolphe Lumber Co., Dorr, B.C.

26829. Dec. 14.—Authorizing Canadian Northern Ry. to enter lands of J. E. Potvin, approximately between mileage 691.91 and 692.41, north side of Vermilion Subdivision, Alta., for building a fire guard, in accordance with board's regulations.

26830. Dec. 15.—Limiting speed of Pere Marquette Ry. trains to 10 miles an hour over Lansdowne Ave., Kingsville, Ont.

26831. Dec. 14.—Rescinding order 26008, Apr.

12, directing Canadian Northern Ry. to file tariff showing rates from Toronto, by lake and rail, to stations west of Port Arthur, not to exceed published rates from points east of Toronto same destinations, via rail to Toronto and lake and rail to destination.

26832. Dec. 14.—Authorizing G.T.R. and Toronto Ry. to operate over joint crossing overhead, south of Eastern Ave.; and over crossing of T.R. and Don industrial spur across G.T.R. leading to Don industrial district at grade; trains and cranes to stop at grade crossing and proceed only when signal has been received from watchman in charge that way is clear; reserving question of interlocking protection to be provided until G.T.R. spurs are moved to permanent location to the north.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and a Public Elevators in the East.

Week ended Dec. 7—	Wheat, bushels.	Oats, bushels.	Barley, bushels.	Flax, bushels.	Totals, bushels.
Port William—					
C. P. R. ....	360,684	320,873	86,399	.....	767,956
Consolidated Elevator Co. ....	184,878	109,418	52,646	55,475	402,367
Empire Elevator Co. ....	160,093	368,934	58,903	76,416	664,346
Ogilvie Flour Mills Co. ....	281,559	51,448	60,970	.....	393,977
Western Terminal Elevator Co. ....	82,659	99,345	12,787	154,117	348,908
G. T. Pacific . . . . .	531,919	1,219,788	136,682	73,330	1,961,719
Grain Growers' Grain Co. ....	156,458	296,061	62,800	.....	515,319
Port William Elevator Co. ....	62,116	177,953	69,323	83,954	393,346
Eastern Terminal Elevator Co. ....	107,876	87,634	14,341	.....	209,851
Northwestern . . . . .	101,809	.....	.....	.....	101,809
Port Arthur—					
Port Horn Elevator Co. ....	445,544	769,339	288,126	49,742	1,562,751
D. Horn & Co. ....	75,908	71,373	23,792	69,975	241,048
Canadian Government Elevator . . .	200,186	145,529	52,451	102,462	500,628
Thunder Bay . . . . .	161,941	248,433	57,071	26,827	494,272
Davidson & Smith . . . . .	307,882	233,975	64,417	282	606,556
Total Terminal Elevators . . . . .	3,221,462	4,200,103	1,040,708	702,580	9,164,853
Saskatoon Dom. Govt. Elevator . . .	2,992	684,620	1,288	104	689,004
Moose Jaw Dom. Govt. Elevator . . .	43,305	402,573	.....	1,066	426,944
Calgary . . . . .	35,262	169,136	9,730	1,885	216,013
Vancouver . . . . .	6,369	.....	3,345	.....	9,714
Total Interior Terminal Elevators . .	87,928	1,256,839	14,363	3,055	1,361,675
Depot Harbor . . . . .	1,311,915	.....	.....	.....	1,311,915
Midland—					
Aberdeen Elevator Co. ....	350,897	425,440	19,997	.....	796,334
Midland Elevator Co. ....	697,683	178,663	67,595	.....	943,941
Tiffin, G. T. P. . . . .	1,725,973	147,733	239,923	.....	2,113,629
Port McNicol . . . . .	3,259,110	414,323	125,045	.....	3,798,478
Collingwood . . . . .	95,317	.....	.....	.....	95,317
Goderich . . . . .	722,488	176,840	50,948	13,599	963,875
Western Canada Flour Mills Co. Ltd..	143,397	.....	.....	.....	643,397
Kingston—					
Montreal Transportation Co. ....	432,555	.....	.....	.....	432,555
Commercial Elevator Co. ....	1,932	32,103	1,633	.....	35,668
Port Colborne . . . . .	1,538,847	728,082	7,575	.....	2,274,504
Prescott . . . . .	.....	.....	.....	.....	.....
Montreal—					
Harbor Commissioners No. 1 . . . . .	919,892	198,890	12,655	.....	1,131,437
Harbor Commissioners No. 2 . . . . .	1,370,102	87,472	55,327	.....	1,512,901
Montreal Warehousing Co. ....	1,947,391	18,309	1,240	.....	1,966,940
Quebec Harbor Commissioners . . . . .	1,855	12,442	.....	.....	14,297
West St. John, N.B. . . . .	406,131	15,821	211,890	.....	633,842
Halifax, N.S. . . . .	.....	.....	.....	.....	.....
Total Public Elevators . . . . .	15,425,485	2,436,118	793,828	13,599	18,669,030
Total quantity in store . . . . .	18,734,875	7,892,550	1,848,899	719,234	29,195,558
Statement, showing total quantities of each kind of grain shipped from Port William and Port Arthur, from Sept. 1 to official closing of navigation, Dec. 14, 1917, in Canadian and U. S. vessels and to Canadian and U. S. ports.					
	Wheat, Bushels.	Oats, Bushels.	Barley, Bushels.	Flax, Bushels.	
Canadian vessels—					
251 cargoes . . . . .	39,693,246.40	2,830,706.05	1,550,910.45	296,159.10	
U. S. vessels—					
218 cargoes . . . . .	47,312,845.30	4,720,892.23	676,867.46	1,545,216.11	
Total—469 cargoes . . . . .	87,006,092.10	7,551,598.28	2,227,777.91	1,841,375.21	
To Canadian ports . . . . .	46,376,480.00	4,917,382.33	1,601,528.15	296,903.25	
To U. S. ports . . . . .	40,629,612.10	2,634,215.95	626,250.28	1,584,471.96	
Total . . . . .	87,006,092.10	7,551,598.28	2,227,777.91	1,841,375.21	
Statement, showing total quantities of each kind of grain shipped from Port William and Port Arthur in Canadian and U. S. vessels during the 1917 season of navigation, as compared with the three previous seasons.					
	Wheat.	Oats.	Barley.	Flax.	
622 Canadian vessels . . . . .	85,423,280.40	17,632,755.03	3,270,098.36	988,499.29	
507 U. S. vessels . . . . .	79,476,033.00	19,256,198.13	1,906,245.57	4,704,690.53	
1,129 cargoes . . . . .	159,899,313.40	36,888,973.16	5,176,344.35	5,693,190.26	
1916.					
895 Canadian vessels . . . . .	97,288,766.10	44,015,292.25	6,235,464.38	1,715,590.52	
565 U. S. vessels . . . . .	84,397,225.40	13,805,947.02	2,651,818.35	3,859,396.36	
1,460 cargoes . . . . .	181,685,991.50	57,821,239.27	8,887,283.25	5,574,987.32	
1915.					
687 Canadian vessels . . . . .	68,537,524.50	23,057,013.24	2,718,499.05	967,830.23	
452 U. S. vessels . . . . .	98,827,699.00	4,174,796.12	2,074,004.44	1,436,547.43	
1,139 cargoes . . . . .	167,365,223.50	27,231,810.02	4,792,504.01	2,404,378.10	
1914.					
751 Canadian vessels . . . . .	64,881,194.03	22,473,825.00	4,026,886.46	1,793,747.50	
138 U. S. vessels . . . . .	22,886,876.00	3,490,095.02	1,069,595.19	5,777,907.54	
889 cargoes . . . . .	87,768,070.03	25,963,920.02	5,096,182.17	7,571,655.48	



# Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We would be glad to be favored in this respect.

Canadian Pacific Ry. Ontario employes have contributed \$500 to the Toronto and York County Patriotic Association, being their 24th contribution, and making the total paid to the fund \$21,225.

Canadian Pacific Ocean Services' Employes.—Up to Oct. 31, 1917, some 420 of the company's employes had joined the army or the navy. One, Lieut. R. N. Stuart of the s.s. Monmouth, has been awarded the V.C., the D.S.O., and a bar to the latter. The Distinguished Service Order has been conferred on Engineer-Commander J. Carmichael, chief officer of the s.s. Princess Margaret; Commander E. Outram of the s.s. Alsatian; Second Engineer J. Quine of the Pacific service; and Engineer-Commander R. Wilson of the s.s. Alsatian. The Distinguished Service Cross has been awarded to Lieut. H. J. Ferguson, first officer of the s.s. Montford; and Commander J. Turnbull of the s.s. Empress of Britain has been mentioned in dispatches. Second Lieutenant Mearnes has been awarded the Military Cross, and Sergt.-Major R. M. McLachlan of the Liverpool staff has received the Distinguished Conduct Medal. A Russian decoration has been awarded to Engineer E. Gordon, of the Pacific service.

Canadian Railway Troops.—The importance of the work being done by troops in France is indicated by a brief report through the Militia Department on Dec. 21, which states that part of their work consists in extending light railway systems to enable ammunition to be carried up to new gun positions. When an advance of any distance is made, necessitating a change of gun positions, the railways have to be extended accordingly. These light railway lines are frequently broken by hostile shell fire and have to be repaired by the troops. In addition to work on standard gauge and light railways, the railway troops are sometimes employed in constructing dug-outs and gun positions, as well as sidings for hospitals, bakeries, garages and quarries. Work of very great importance has sometimes to be done under heavy German shell fire. The Director of Light Railways some time ago reported favorably on the work of the Canadian railway troops.

James Carruthers' Airplanes. — The British War Office is stated to have decided that the four battle planes presented by James Carruthers, President, Canada Steamship Lines, Ltd., Montreal, will be named Montreal, Toronto, Winnipeg, and Edmonton, respectively.

The Light Railways Company's Work. The Canadian Press Correspondent cabled from the Canadian front in Flanders, Dec. 24.—"Some day the full history will be written of the light tramways at the front, and figures will be given to show what they saved in animal power, in time, and in man power. German trucks of a 1916 pattern form not a little of the rolling stock. For the pre-

sent I will only give the briefest of summaries based on the war diary of the Tramway Company for April—the Vimy show. In the first week, preparing for the advance on one section alone, 793 trucks covered 2,260 miles and hauled a total tonnage of 4,154. Five petrol tractors and 400 mules were used, 4 and 5 on a train. It was a period of continuous construction, mules being employed over the new rail sections. Time and again the line was torn by shell fire and repaired. On the night of April 9, the first attack, the tramways were preparing to advance with the infantry. Advance they did, laying their new track behind our attack. In 16 days, 4,600 metres of new track was laid in one section. During the battle operations this section alone supplied 80% of the field ammunition for one division, delivered to the batteries at a maximum rate of 1,200 rounds a day. The same section supplied 95% of trench mortar bombs and grenades for the same division. The tramways altogether hauled 234 trucks of water in the month, 1,463 ammunition, 212 rations, 829 steel, 73 ballast, 67 salvage and 77 trucks other material, making the total tonnage for the 30 days, 11,308. During the fighting special trains of two 9-ton trucks, holding 13 stretcher cases evacuated wounded from advanced dressing stations. In 4 days, 1,250 stretcher and 510 sitting cases were handled, 50 special trains being employed. Every day of the whole month the Tramway Company suffered casualties, sometimes heavy ones. But the work never ceased. The spirit of all was the spirit of one of their number, a private. He put out a fire in a truck of ammunition by drawing up to a shell hole and throwing water on to the truck by means of his steel shrapnel helmet, as the heroic incident is recorded in the bald words of the war diary. Such in a sketchy form is the work of the tramways company, a fine service, the development of a decision reached by the Canadian Engineers in the salient in 1916, when it was decided to build tramways, and it was found that such an organization was necessary."

Recruiting for Railway Construction Corps, Engineers, etc.—A change has been made in the organization of the railway construction and forestry units for overseas service, which has resulted in these services coming under the direct control of the Royal Canadian Engineers, and officer administering the engineers Lt. Col. Clyde Caldwell, has taken over the administration of the railway construction, skilled railway employes and forestry units men are required as under:

For skilled railway employes, men who are proficient in their trades. They will receive military training in Canada, and special rates of pay are authorized for certain trades, viz.: blockmen, shunters, locomotive men, firemen, fitters, steam crane men, painters, stationary engineers, pipe fitters, car riveters, steel and wood car repairers, stationary firemen, blacksmiths helpers and helpers. Drafts will be sent overseas monthly.

For engineer drafts: Carpenters, bricklayers, plumbers, tinsmiths and tunnelers are required. Men who have worked on municipal works, sewer excavations, etc., would be enlisted as tunnellers.

For railway construction drafts, men can be enlisted in Category B, except unmarried men between the ages of 20 and 34.

For forestry: Millwrights, sawhammers, sawlers, sawyers, setters, boggers, dredgemen, and engineers.

No. 3 Section Skilled Railway Employes is now being recruited with headquarters at the Engineer Training Depot, St. Johns, Que. For the present the Railway Construction Depot is in Toronto, the Forestry Depot at Brockville, Ont., and the Engineers Depot at St. Johns, Que.

## PERSONAL NOTES.

H. H. Adams, formerly General Manager, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., is in France in command of a battalion of U. S. engineers. He was born at Detroit, Mich., Aug. 13, 1876, and entered railway service in July, 1899, as rodman and draftsman, Michigan Central Rd. After service in various capacities in the Engineering Department, he was appointed Assistant Chief Engineer, Mar. 1902; secretary to the General Superintendent, Nov. 1902; Assistant Superintendent, Canadian Division, Jan. 1904; General Superintendent, Toronto, Hamilton & Buffalo Ry., Oct. 1909; General Manager, same road, Oct., 1910, resigning May 6, 1912, to become President, Kansas City Terminal Ry., Kansas City, Mo.

Capt. W. H. D. Bennett, who was killed in action recently was, prior to enlistment as a private, a car checker on the C.P.R. He was granted a commission some time ago, and obtained promotion for distinguished ability on active service.

Capt. Michael Chapman, British Grenadiers, who has been reported wounded, was formerly of Chapman & Walker, contractors, etc., Toronto.

Capt. W. P. Hains, of the Canadian Pacific Ocean Services' s.s. Miniota, has been awarded the Distinguished Service Conduct medal for going to the assistance of a U. S. vessel which was under attack by a German submarine.

Lieut. C. S. Hall, of Montreal, nephew of Grant Hall, Vice President and General Manager, Western Lines, C.P.R., was reported in Canadian Railway and Marine World for December as wounded and missing. He should have been referred to as Lieut. Terence S. Hall. Another nephew, Lt. John S. Hall, of the Reinforcement Depot, Tank Corps, B.E.F., has been slightly wounded and is in hospital.

Capt. L. G. Johnson, who was awarded the Distinguished Service Order recently in recognition of services in connection with submarines in the Atlantic, was formerly in Canada Steamship Lines' service.

Major A. E. Lewis, formerly Secretary, Toronto Harbor Commission, now of the 216th Battalion, has returned to Toronto on leave, in consequence of having been wounded in the hip.

Lt. Col. D. S. MacInnes, of the Royal Engineers, who has received the C.M.G. and the French Legion of Honor this year, and who has been mentioned in Sir Douglas Haig's recent dispatches, is a son of the late Senator MacInnes, who was a C.N.R. director, and is a brother of W. R. MacInnes, Freight Traffic Manager, C.P.R.

Major Jas. McGregor, formerly Superintendent Engineer, Halifax Ocean Terminals, Halifax, N.S., is now Chief Engineer, 3rd Battalion, Canadian Railway Troops, B.E.F. In writing Canadian Railway and Marine World from France he



says: "Enclosed is cheque in payment of my subscription to your most interesting and highly appreciated paper for the coming year."

Lt. Col. C. H. Mitchell, C.M.G., D.S.O., M.Can.Soc.C.E., of Toronto, who has won great distinction in the intelligence branch on the western front, has been appointed to the British Staff on the Italian front.

Major-General Herbert C. Nanton, C.B., R.E., Chief Engineer attached to headquarters, who has been mentioned in Sir Douglas Haig's recent dispatches, is a brother of Sir Augustus Nanton, of Winnipeg, one of the C.P.R. directors and Vice President, Winnipeg Electric Ry.

Sergt. W. L. Payne, formerly of the C.P.R. publicity department, London, Eng., now in the B.E.F., writes that he has had some extraordinary meetings with friends in the various theatres of war—France, Salonika, and Egypt—in which he has been engaged since he joined up on the outbreak of hostilities. After two years of soldiering he ran into his young brother (who joined the C.E.F. in Calgary) in France, and had one hour to talk over their boyhood days. Then, in a dilapidated French village he one day spoke for a few seconds to Gough, who, previous to the war, had been in constant touch with him as chief clerk to a firm of printers and was then rushing around giving the fire alarm. In the wilds of Macedonia he came across the man who used to sell him a daily paper at the Dulwich tram terminals, and in the baths he met a long-lost cousin. From Salonika Payne went to Egypt, and one day, on the banks of the Suez Canal, he helped a derelict motor car and discovered in the car another relative.

A. E. Philp, chief engineer of the Canadian Pacific Ocean Services' s.s. *Empress of Britain*, has been awarded the fourth class order of the British Empire, for special services.

Gunner C. W. Rand, son of the late N. L. Rand, formerly Master Mechanic, Intercolonial Ry., Moncton, N.B., who has been on active service since Dec., 1916, has left a hospital after being in it for six weeks as the result of being wounded by an explosion.

Lieut. R. S. Richardson, of No. 13 Light Railway Operating Co., R.E., British Expeditionary Force, formerly Superintendent, Canadian Government Railways, Fort William, Ont., in writing from France on Nov. 28 to Acton Burrows, Managing Director, Canadian Railway and Marine World, said: "I visited your son's grave in Bapaume Post Military Cemetery on Nov. 25, exactly a year after he was killed. I was on my way to Amiens and travelled along the Bapaume-Albert road to Albert, where I obtained information as to the location of the cemetery and returned to it at once, about 1½ miles east of Albert on the Bapaume-Albert road. It is on high ground and quite close to the road. I had no trouble in locating the grave, which is no. 2 in the third row from the entrance. It is very nicely kept, the wooden cross and railing being white, as is, of course, also the chalk border around the grave. The lettering on the cross is very clear and fresh. I placed a waterproof wreath of green, with daisy trimmings, on the grave, to commemorate the first anniversary of his departure to another life."

Lieut. J. K. L. Ross, R.N.R., who has been actively associated with naval patrol service undertaken by the Canadian Naval Service Department since the commencement of the war, has been promot-

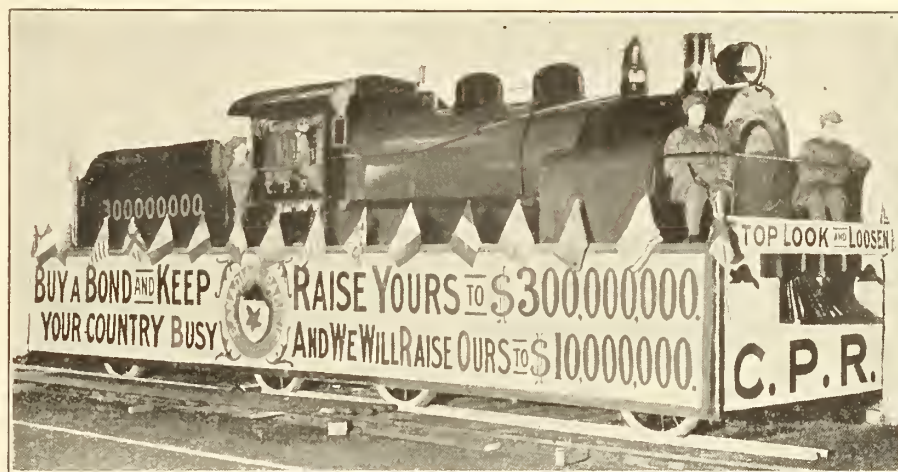
ed to Commander. He is a director of the C.P.R.

Lieut. R. H. Taylor, who was reported as missing several months ago, and who is now announced as having been killed in action, enlisted early in the war, while a student at McGill University. He lived in Montreal, and was son of Capt. H. Taylor, formerly of Bowring and Co.'s s.s. *Cordelia*, and latterly engaged in steamship service in connection with the Hudson Bay Ry., and a nephew of E. W. Taylor, Traffic Manager, Reid Newfoundland Co., St. John's, Nfld.

Major-General Twining, formerly of the Canadian militia, and now Director of Light Railways on the western front, who was mentioned in Sir Douglas Haig's recent dispatches, was mentioned four times previously.

### Canadian Pacific Railway's Victory Loan Float.

The C.P.R. was represented in the Victory Loan parades in Montreal and Toronto, in November, by a large float, consisting of a reproduction of a full sized locomotive, which was built on two little



The Canadian Pacific Railway's Victory Loan Float.

giant trucks, to run on the streets in the same way as an ordinary motor truck. The float, an illustration of which is given on this page, was built at Angus shops, Montreal, in remarkably quick time. The request for it was received at the company's offices on a Thursday afternoon and the float was ready for the Montreal parade on the following Monday. The "locomotive" was manned by a locomotive man, fireman, and three women workers from the C.P.R. shops in overalls, and was accompanied in the parades by a number of C.P.R. police, mechanics and trainmen.

United States Railways Canadian Offices.—The Chicago, Milwaukee & St. Paul Ry. is closing its office in Toronto. C. E. Hilliker, who has been Canadian Freight and Passenger Agent, will return to his old position as Division Freight and Passenger Agent, at Des Moines, Iowa. The Minneapolis, St. Paul & Sault Ste. Marie Ry. is also closing its Toronto office and it is said that H. T. Duffy, who has been General Agent, will probably be appointed District Passenger Agent at Duluth. It is said that the Chicago & Northwestern Ry. does not intend to disorganize its forces, and that it will maintain its Toronto office in charge of B. H. Bennett, General Agent.

### Railway Rolling Stock Notes.

Canadian Government Railways have received 7 Mikado locomotives from Canadian Locomotive Co.

Canadian Government Railways have ordered one second hand sleeping car from Hotchkiss Blue & Co.

The C.P.R. is reported to have built over 10,000 box cars during 1917, in addition to many ordered outside.

The Eastern Car Co. has delivered 900 box cars, 1,200 poods capacity, to the Russian Government, leaving 1,800 to be supplied on an order for 3,000.

The Essex Terminal Ry. has ordered 50 Hart convertible cars of 40 tons capacity from Hart-Otis Car Co. These will be built by Canadian Car and Foundry Co.

The French Government has ordered 1,000 steel underframe flat cars, and 850 steel underframe gondola cars, 23½ in. gauge, from American Car and Foundry Co.

The G.T.R. has received 4 Mikado locomotives from Canadian Locomotive Co., completing an order for 10, as previously mentioned. It has also received 2 snow

ploughs from Russell Snow Plow Co., out of an order for 10.

Canadian Government Railways have received the following additions to rolling stock, since Nov. 16:—97 stock cars, 30 tons capacity; 20 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co.; 7 mikado locomotives from Canadian Locomotive Co.; 24 mikado locomotives from American Locomotive Co.; 2 second hand baggage cars, from Hotchkiss Blue & Co.; 1 second hand 5-ton crane, 19 second hand coal cars, 35 tons capacity, 8 second hand coal cars, 30 tons capacity, and 9 second hand box cars, 30 tons capacity, from General Equipment Co.

Sir William Van Horne's Will.—Only some fragmentary information about the late Sir William Van Horne's will was available until early in December, when application was made to the surrogate court in Toronto, for ancillary probate, in connection with the portion of the estate in Ontario. The property schedules filed with the will show the total value of the estate as \$6,331,374.

The Canadian Society of Civil Engineers' annual meeting will be held at 176 Mansfield St., Montreal, on Jan. 21, 22 and 23.



## Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—We are officially advised that at Nov. 30 track was laid to mileage 275.4, about 18 miles from McMurray, the objective at mileage 293. It was expected to complete laying this mileage by Dec. 31.

The company has under construction a branch line easterly from Derver, mileage 101.4 from Carbondale Jct., the starting point of the line on the Edmonton, Dunvegan and British Columbia Ry. This line known as the Egg Lake Branch, and the section under construction is 30 miles long.

J. D. McArthur, Ltd., Winnipeg, are the general contractors, and W. R. Smith, Edmonton, Alta., is the Chief Engineer. (Dec., 1917, pg. 470.)

**Burrard Inlet Tunnel and Bridge Co.**—Application is being made to the Dominion Parliament for an extension of time within which the company may build its projected bridge, tunnel connecting railways and other projected works. The company has plans prepared for a bridge over the Second Narrows of Burrard Inlet, at North Vancouver, but did not succeed in financing the project. The company which comprises representatives of the City of Vancouver, North Vancouver, and other municipalities, is seeking a renewal of the charter in order to be in a position to realize something from a sale of the plans and rights to a construction company. The company has paid out \$150,000 or more for surveys, plans, etc. R. F. Archibald, North Vancouver, B.C., is acting Secretary of the company. (Dec. 1917, pg. 470.)

**Canadian Northern Ry.**—The James Bay & Eastern Ry. is a C.N.R. subsidiary and was originally projected to have its easterly terminus at Roberval, Que., one of the Quebec & Lake St. John Ry. Termini on Lake St. John. A contract was let to J. P. Mullarkey three or four years ago to grade 30 miles from Roberval westerly, which grading has been completed for some time. Track was laid to St. Felicien during 1917, and the line was passed for operation by the Board of Railway Commissioners at the end of November. A train service was placed in operation Dec. 3. The length of line authorized for traffic is 16.31 miles, to St. Felicien, on the Chamouchouin River. An order has also been made by the Board of Railway Commissioners for the installation of a Y at St. Felicien. The final objective of the railway is to reach James Bay, part of Hudson Bay, at the mouth of the Nottaway River.

Damage was done to the C.N.R. station at Port Arthur, Ont., Dec. 12, by fire to the extent of \$15,000, and records of considerable value were destroyed in the basement.

Track has been laid on the Elrose-Eston branch for a further distance of 16.28 miles to Glidden, Sask.

In Alberta, the company has completed tracklaying on the Oliver-St. Paul de Metis branch for 44.51 miles.

On the Canadian Northern Pacific Ry. the only new work done during 1917 was on Vancouver Island, where track has been laid for eight-tenths of a mile, from Victoria Harbor to Alpha St. station, Victoria, and 7.35 miles of track have been laid on the Victoria-Alberni line, from the junction to Glen Lake. (Dec., 1917, pg. 470.)

**Cavalier County Ry.**—Under the Board of Railway Commissioners order of Nov. 16, 1917, the Canadian Pacific Ry. was

authorized to construct, maintain and operate a siding from its line in Sec. 5, Tp. 1, Range 7 west of the 1st Meridian, to the International Boundary near Windygates, Man., in the same section, a distance of 3,395 ft., the siding to be built within six months. We are officially advised that the total length of the spur line will be about 1.5 miles, and that it will run southeasterly from the C. P. R., across the International Boundary at Windygates, to an elevator in North Dakota. The object in view in building the siding is that grain delivered to the elevator may be shipped in bond through Canada to Minneapolis and Detroit. As the C.P.R. could not build the line a separate company was formed by those interested with the title of the Cavalier County Ry. The company's offices are at Langdon, N.D., its capitalization is \$25,000, and its officers are: President, G. Grimson, Langdon; Treasurer, S. G. Erickson, Elkwood, N.D.; Secretary, R. Robertson, Stillwell, N.D.; General Manager, R. P. Shelp, Maiden, N.D. This company will build the spur line, and it will be operated by the C.P.R. in Canada under the order quoted above, and in the U.S. by agreement with the C. C. Ry. (Dec. 1917, pg. 470.)

**Central Canada Ry.**—We are officially advised that the company has under construction an extension of its line, 15 miles long, from Peace River crossing, mileage 49, to mileage 64, and has under survey a 36 mile extension from mileage 64. J. D. McArthur & Co., Ltd., Winnipeg, are the general contractors, and W. R. Smith, Edmonton, Alta., is Chief Engineer. (Dec. 1917, pg. 470.)

**Essex Terminal Ry.**—We are officially advised that construction of the extension from Ojibway to Amherstburg is being gone on with. Track will not be laid until early in the spring. (Nov., 1917, pg. 433.)

**Grand Trunk Ry.**—Brantford, Ont., ratepayers will vote on Jan 1 on a by-law to provide debentures for \$40,000 toward the cost of constructing a subway under the G.T.R. tracks at St. Paul Ave., there. This is part of the work agreed upon to be done in connection with the grade separation work which has been under discussion for nearly three years. (Dec., 1917, pg. 471.)

**The Grand Trunk Pacific Ry.** proposes provided that the Saskatchewan Government will consent, to incorporate a passenger station with its proposed hotel in Regina. The site of the station and hotel will be on the Wascana Park site, with freight terminals and sheds on the site of the present station. This proposal will necessitate the building of a tunnel under Albert St., to permit passenger trains to reach the station and hotel building. The province has guaranteed the bonds for the terminal buildings on the present site, and the proposal, if agreed to, will necessitate a rearrangement of the guarantee. (Dec. 1917, pg. 470.)

**Greater Winnipeg Water District Ry.**—We are officially advised that track has been laid on the extension from Deacon to St. Boniface, Man., 8.3 miles, and from a point on this line to Transcona, 1.5 miles. These pieces of line give this railway an independent line into St. Boniface, and a connection with the National Transcontinental Ry. at Transcona. (Nov. 1917, pg. 433.)

**Hudson Bay Ry.**—J. W. Porter, Chief Engineer, is reported to have stated in Winnipeg recently, that the bridge over the Nelson River at Kettle Rapids was expected to be completed by Dec. 31, that all the other grading was completed to Port Nelson, that track laying on this section of 92 miles will be started in the spring if the rails are on hand, that ballasting had been completed to the Kettle Rapids, and that the roadbed for 332 miles to that point is in good shape for any sort of traffic. (Nov., 1917, pg. 433.)

**Intercolonial Ry.**—Tenders are under consideration for the erection of a frame station at Belledune, N.B. (Dec., pg. 470.)

**Magdalen River Ry.**—The Quebec Legislature is being asked to extend the time to build this projected railway from its present authorized terminus near the Magdalen River beyond Little Falls, both southerly and easterly to connect with the Atlantic, Quebec and Western Ry., and the Canada and Gulf Terminal Ry. at Gaspé, or any other point on either or both railways, also the power if the railway is built to Gaspé, to build wharves, docks and other deep water terminals. F. Murphy, New Carlisle, Que., is Secretary of the company. (Mar. 1916, pg. 107.)

**National Transcontinental Ry.**—We are officially advised, in connection with the report referred in Canadian Railway and Marine World for Dec., 1917, on pg. 471, that the Quebec Ry., Light and Power Co. directors have discussed the advisability of entering into negotiations with the Dominion Government with reference to the electrification of the National Transcontinental Ry. between Champlain Market, Quebec, and Silery Cove. It has been decided that in view of the abnormally high cost of railway construction material, and labor, that this matter be left in abeyance. (Dec., 1917, pg. 471.)

**Quebec and Saguenay Ry.**—We are officially advised that track has been laid from Cap Tourmente, the starting point of the line, for 15 miles easterly. Sufficient rails have been obtained to lay track as far as Baie St. Paul, a further distance of about 10 miles, and it is expected to lay these rails before work is suspended for the season. Grading is now sufficiently completed between Baie St. Paul and Murray Bay for track laying. Provided that rails can be obtained early in the spring the line should be in operation through to Murray Bay, 54.45 miles, during next summer. O'Brien and Doherty are the contractors, and Gordon Grant is Chief Engineer in charge for the Department of Railways. (Dec. 1917, pg. 471.)

**Quebec Bridge.**—The new bridge over the St. Lawrence River near Quebec was opened for freight traffic, Dec. 3, when a train consisting of 16 freight cars, a caboose and an official car, having a weight of 1,245 tons, was hauled over the bridge from Levis by a Canadian Government Ry.'s locomotive weighing 241½ tons. There were present, either in the official car, or in the locomotive cab, the following officials:—F. B. Tapley, Assistant Engineer of Maintenance; J. E. Marazain, Superintendent; M. Brousseau, Resident Engineer; H. W. Sharpe, Master Mechanic; E. J. Desjardins, Assistant Superintendent; P. Javery, Roadmaster; W. G. Moore, together with C. N. Monsarratt, Chairman of the Quebec Bridge Commission; G. F. Porke, Construction



Engineer, and others of the bridge construction staff. The movement of the train over the bridge was carefully watched, and tests were made to determine its effect on the different parts of the structure. It was stated there was no strain, practically no vibration, and that the expansion on the suspension span was barely 5/6th of an inch. A second train of similar weight was taken across the bridge from the Quebec side during the same afternoon.

There has since been a daily service of through freight trains across the bridge, and passenger trains have been run since

Dec. 10. (Dec., 1917, pg. 484.)

**Roberval-Saguenay Ry.**—We are officially advised that the company has in contemplation the building of a line from Ha Ha Bay Jct. to St. Michael Mistassini, Que., approximately 63 miles. The surveys have not been completed. (April, 1916, pg. 139.)

**St. John and Quebec Ry.**—We are officially advised that surveys are in progress with the view of building an extension of the line from Centreville, the present northerly terminus, to Andover, N. B., 20 miles. C. O. Foss, Fredericton, is Chief Engineer. (Dec., 1917, pg. 471.)

## Dominion Government Payments on Canadian Northern Railway Account.

Sir Thomas White, Minister of Finance, issued the following statement on Dec. 9:—"Upon my return to my office this morning after a week's absence in the election campaign in Ontario, my attention was drawn to certain grossly inaccurate and misleading statements attributed by the press to Hartley Dewart, K.C., of Toronto, with reference to payments under the act of last session of Parliament, authorizing financial aid by the government to the Canadian Northern Ry. upon the acquisition of its common stock, as by the said legislation provided. With reference to these alleged statements I have the following observations to make:

"The statement that payment of \$6,000,000 has been made to Mackenzie & Mann is wholly without foundation. There is no vote of parliament authorizing such payment, and no order in council has passed or been considered respecting any such payment.

"The advances which have been made under the Canadian Northern legislation of last session of parliament have been upon the certificate of the Financial Controller of the Railways Department under the authority of an order in council passed Nov. 1, 1917. They have been made in the manner in which payments to railways of subsidies, loans or the proceeds of guaranteed securities have been made in the past, and in strict accordance with the statute which authorized them.

"The certificate of the Financial Controller of the Railways Department, dated Nov. 16, 1917, authorized advances in payment of principal and interest indebtedness upon equipment account of \$5,998,752.50, and for interest upon underlying securities of \$7,155,111.29, making a total of \$13,153,863.79. Against this certificate \$12,500,000 was advanced. The Financial Controller's next certificates were dated Nov. 28, 1917, and covered the principal of a loan amounting to \$1,670,453.95 maturing, due in New York, which could not be renewed there, also interest upon underlying securities and principal of equipment securities aggregating \$869,958.

"The above are all the advances which have been made to date under the legislation in question. Demand notes of the Canadian Northern Ry. Co. and its subsidiary companies bearing interest at 6% have been received by this department in respect to these advances, and mortgages upon all their assets have been executed by the Canadian Northern and its constituent companies to His Majesty to secure the said advances.

"The five-sixths of the 600,000 shares

of capital stock of the C.N.R. formerly held by private owners, have, as required by the statute, been vested in the Minister of Finance in trust for His Majesty, so that the Dominion Government is, under the legislation of last session, the sole proprietor of the C.N.R. system. It follows that any advances made by the government for interest upon underlying securities or principal or interest upon equipment bonds, or for the purpose of paying maturing obligations of the system, enures to the benefit of the government as proprietor and owner of the system. It was for this purpose and object that the legislation of last session was passed by parliament, and provision made by parliament for assistance in paying the indebtedness of the system.

"The suggestion that any part of the proceeds of the Victory Loan was required or used to make the payments herein mentioned is wholly without foundation."

## Meritorious Services by Canadian Pacific Railway Employees.

The educational bulletins issued by the general superintendents of the company's various districts record the following meritorious services performed by employees recently:—

A conductor on work train discovered broken flange on C. P. 367661 thereby averting a derailment.

A trainman, while examining his train at a station, discovered a piece broken out of a flange of wheel, and had the car set off.

While one of the transfers was passing an interlocking plant, the towerman noticed the brake rigging dragging. He immediately signalled the train crew, who stopped the train.

Trainman C. E. Towle when travelling as a passenger rendered commendable service in assisting to repair a broken drawbar on the mail car during a heavy downpour of rain.

Agent A. E. Hancox of Ste. Agathe, Que., while walking through yard noticed bolts on switch stand broken off. He immediately notified the sectionman who made necessary repairs. The close observation and promptness on the part of the agent prevented a possible accident.

Valuable service was recently rendered by conductor J. J. Maher and trainmen J. W. and M. D. Hogan, who, while running a mixed train, observed a tree which had blown down and lodged on the telegraph wires. Conductor Maher, with his two trainmen, held the train and with an

axe cut the tree down and cleared the wires.

Section foreman J. Jones, Bowmanville, Ont., noticed a broken flange on a car which was on the east way-freight. He endeavored to attract the crew's attention, but failed. He immediately got his hand car, went to the station and informed the operator. The train was stopped at Newcastle and on examination it was found the flange was badly broken.

A trainman discovered a broken wheel under a freight car, nearing a siding; he stopped the train and with the assistance of the crew succeeded in skidding the car into the siding. No doubt his vigilance and watchfulness prevented what might have been a serious accident. This emphasizes the importance of close inspection being made by trainmen at every opportunity for any apparent defects in the running gear of the train.

Locomotive man J. Hull in charge of locomotive on train 382 noticed water undermining the track at trestle mileage 25.4 St. Maurice Valley Subdivision, and on arrival at the next station made a special report, with result that the section foreman immediately went to the point in question and a washout occurred within a few minutes afterwards, tying up traffic. The locomotive man's vigilance in detecting this condition is highly praiseworthy.

Bert Avery, agent at Waskada, Man., showed interest in the company's welfare when he protected from frost shipments of perishable freight which arrived at his station without heater protection. A car containing grapes and onions arrived on a Saturday night and he, knowing that unless heater protection was supplied during the week end, the contents would be frozen, borrowed a sufficient number of lanterns, placed them in the car, lighted and took care of them and thus prevented contents from freezing.

When an elevator took fire at Maryfield, Sask., night operator Thos. Allen sounded an alarm promptly and before assistance arrived he and assistant agent Colin McKillop moved a car loaded with grain out of danger and extinguished fire, which had started on roof of car. Section foreman F. R. Ford saved the water tank by climbing up to the roof and extinguishing fire, which had started there. All three men acted promptly and worked diligently in protecting the tank and station and removing cars to safety. There was a terrific wind blowing at the time.

Locomotive man J. Simpson, on an extra west on Ignace Subdivision, Manitoba District, observed what looked like a broken rail in the eastbound track. He stopped the train and sent head end trainman back to advise conductor, while he protected eastbound track. Conductor C. R. Simpson, when informed, went back and examined the track, finding a piece broken out of one of the rails and track unsafe. He left trainmen to protect it, cut off his locomotive and ran to nearest telegraph office, notifying section foreman on way, and advised dispatcher. No. 2 was just about due, but sectionmen were able to repair track in time to avoid delay to that train. The situation was admirably taken care of.

While a train was standing at a station recently waiting for a passenger train to pass, the conductor and trainman while inspecting the train, discovered fish plates and a piece of rail on the main track, which in all probability would have resulted in a derailment. Trainmen and other employees can accomplish a great deal by their vigilance in preventing accidents.



## Damage to Canadian Government Railways Property by Halifax Explosion.

Canadian Railway and Marine World is greatly indebted to C. A. Hayes, General Manager, Eastern Lines, Canadian Government Railways, for the following information, which was prepared by F. B. Tapley, Assistant Engineer, Maintenance of Way. We are under deep obligations to them for it, prepared as it was during a time of great stress, when the officials were working day and night to restore the damage and succour the wounded and other survivors. When the full story is available, it will be seen that the general officers at Moncton and a large number of local officials at other points on the Intercolonial Ry., particularly those contiguous to Halifax, performed heroic work under most difficult and trying circumstances.

water front, appears to have been destroyed from the water level up, although a portion of the old cribs below water may yet remain. The divers were too busy examining the substructure of more important piers farther down the harbor to permit of a complete examination below water to date. Pier 6, a wooden pile pier, without shed, was completely blown away, and no trace of it remains to mark the spot where it stood.

Richmond yard station, the car repair building, and cattle pens, were blown completely to atoms, while the switchman's shanties scattered throughout the yard were so badly wrecked as to be unfit for repair. The housing under the bottom of the tank tub was partly blown down and the feed pipe broken off. A

heavy storm of Dec. 9, this portion of the roof collapsed. The power plant and power house adjoining the station were damaged to the extent of broken pipe connections and a wrecked roof, all doors and windows being blown off as well.

The damage at Deepwater was heavy, but fortunately did not put the facilities entirely out of business. Still working in a southerly direction, or down the harbor, we come to pier 5, which was abandoned for shipping purposes last summer, and was given over for sanitary conveniences for troops. The latrines erected late in the autumn were demolished. Pier 4 is a wooden pile pier, with 2 outside tracks and a wood shed of the single deck type. Repairs were under way when the explosion occurred. The



North Street Station, Canadian Government Railways, Halifax, N.S., which was badly damaged by the explosion on Dec. 6.

The collision of the steamships Imo and Mont Blanc in Halifax harbor on Dec. 6, which caused the cargo of the Mont Blanc to explode, wrecked a considerable portion of the railway facilities in the vicinity of Richmond yard and North St. station, and damaged other facilities along the water front at Deepwater, which is farther south. The evidences on the ground would lead one to believe that the Mont Blanc exploded in the vicinity of piers 6 and 8, the greatest damage being done there and extending northeasterly toward Willow Park Jct., and southwesterly to the North St. station. Beginning at pier 9, which is just north of pier 8, and working southwesterly from there, a brief description of the damage to the railway property follows:—

Pier 9, which is the most northerly railway pier along the Halifax water front, was damaged by having a wooden shed so badly shaken by the force of the explosion that it collapsed in a heap. The substructure of this pier, so far as we have been able to carry our examination, has not been greatly damaged, but with the large amount of wreckage piled on it, we cannot be sure of its condition at the present writing. Pier 8, next down the

piece of metal, supposedly from the Mont Blanc, was blown through a tub stave, emptying the tank.

North St. passenger station sustained very heavy damage. The front and back thirds of the train shed roof were blown up by the blast of the explosion, and then they collapsed and fell down inside the brick walls. Thirteen of the roof trusses in the centre of the shed, with the roof boarding, framing and sash on them, remained standing, but were later pulled down for safety. The glass was blown out of all the side windows, and the doors blown out of the casings, but being weighted and hung to the side walls, many could be operated after the explosion. In the head house of the station, which is a solid brick structure, heavy damage was sustained. Downstairs all the doors, windows and fixtures were blown off, but the main partitions stood up under the force of the explosion, as did the brick walls. On the second floor, all doors and windows were blown off, and the plaster partitions bulged and broken. The damage to the third floor was practically the same as on the second floor, and a portion of the roof on the monitor was blown upward. Later, in the

pier was unharmed, but the shed was completely wrecked. Pier 3 is a wooden pile pier, with single story wooden shed and 4 tracks, 2 outside and 2 inside the shed. The pier was not damaged; the roof trusses on the north half of the shed were all broken, and all the doors and windows blown off. The electric wiring fell down on to the floor. The south half of the shed frame is apparently in good condition. Old pier 2, an open wood pile pier with 2 tracks, was not damaged. New pier 2 is of reinforced concrete with double deck concrete shed; 4 tracks, 2 outside and 2 inside the shed. The shed and pier are practically undamaged. The doors were all blown off the north side of the pier, both upstairs and down, and over 70% of the glass was broken. South side was not so greatly damaged, although 8 of the large steel doors downstairs were completely blown off, and a number damaged. In the military hospital upstairs, the light wood partitions were badly damaged, and these in falling broke some of the radiators clear of the pipes, and carried down the temporary electric wiring which was fastened to them. The permanent electric wiring in iron conduit was practically undamaged.



The power plant was not damaged, although the building housing it was shaken up. The Deepwater local freight shed, a brick structure, was not greatly damaged, except for a short section of the roof next the office portion, which opened up along the ridge for 60 ft., and the loss of the glass in the office windows and transoms over the freight doors.

The 500,000 bushel grain elevator, which is of wood construction, had the roof over the bins so badly damaged that it will have to be renewed. All of the windows in the working house and shipping galleries were blown out, and a hole was blown in the northerly side of the house. The power plant was unharmed. Steam was put on in it the afternoon of Dec. 7. The grain handling machinery was not seriously damaged, the damage consisting of a bent main shaft and a broke tension idler on the main drive.

At Willow Park, where the locomotive cleaning and housing facilities are located, the doors and windows in the car shop, stores building, planing mill, oil house and locomotive house, were blown out. The roof of the locomotive house was badly damaged, and the greater portion of it collapsed. The power plant was out of business for a day of two, but was put in running order later. The power transmission line to North St. and Deepwater, which follows along the city's streets, was wrecked, and power is now obtained from the Nova Scotia Power Co.'s plant in the south end.

The telephone dispatching line between North St. station and Rockingham was put out of business, but was repaired and put in service again on Dec. 9. All automatic signals between North St. station and Willow Park Jct., a distance of 7,000 ft., were badly wrecked and were found to be not working. They will be restored as quickly as possible. Train movements are not being interfered with on this account.

No damage was done at the new ocean terminals at the south end, except for the loss of some glass and a few doors in the temporary sheds. Although the damage to the railway property was heavy, it was fortunate that the two main tracks leading to the North St. station were not put out of business. Auxiliary cranes were started clearing the wreckage as soon as they arrived on the scene, and by noon on Dec. 8 the main lines to North St. station were clear. The standing portion of the train shed roof was taken down on the evening of Dec. 8, and trains were run into North St. on the evening of Dec. 9. On Dec. 10 full train service was resumed. During the time North St. station was out of business, the trains were run into the ocean terminals. The first train to leave North St. station after the explosion was a Dominion Atlantic for Kentville, which got out on Dec. 8 at 6 p.m.

Gangs of men were put on immediately to carry out the reconstruction work on new pier 2, pier 3, North St. station, Willow Park and Richmond, and the work of rehabilitation is now underway, and being pushed to the utmost. Arrangements have been made to erect additional sheds on the completed docks at the ocean terminals, to replace those lost at Richmond, and it is expected that by the end of January all space lost will be replaced, with something over to carry on the additional business expected. New pier 2 will be in shape by Jan. 1, pier 3 about a week later, and during January Willow Park will have been repaired and two temporary sheds 600 x 90 ft. will be completed at the ocean terminals. The remainder of the work will be completed as soon afterward as

possible.

No close estimate of the monetary value of the loss sustained in the explosion can be given at present writing, as all surveys and examinations have not been completed. The loss to rolling stock was heavy, consisting of 97 sleeping, dining, commissary, hospital, tourist, first and second class and baggage cars. Repairs are now under way, and the cars will be back in service in from one to six

weeks from the date of the explosion. The damage to the freight cars was heavier, 374 G.T.R. and foreign cars being damaged and destroyed. Of this number 304 can be repaired or converted into other types, and put back into service, and 70 will be a total loss. Five locomotives which were standing in the vicinity of the North St. station at the time of the explosion, were slightly damaged but will be in service again shortly.

## Compensation for Carriage of Mails by Railways.

For years Canadian railway companies have contended that the rates paid for the transportation of mails have been altogether inadequate and have urged that the matter be investigated by the Board of Railway Commissioners. In Feb. 1917, the Postmaster General reported to the Privy Council that the different railways have carried mails since Feb. 1, 1913, at the following rates per mile:—

For full postal car .....	16c
For half postal car .....	9c
For baggage car service over 30 ft. space..	16c
For baggage car service 15 to 30 ft. space..	9c
For baggage car service, less than 15 ft. space	4c
Special mail train ordered by P.O. Dept ....	\$1.25
Special mail train, when other cars are attached by railway .....	\$1.00

The Postmaster General pointed out that it was claimed by the C.P.R. and G.T.R. that these rates are inadequate and he recommended that the question of remuneration to be paid the railways be referred to the Board of Railway Commissioners to determine as to the accuracy or inaccuracy of the claims made by the companies, and if it is found that the present rates are inadequate, to determine, as the result of evidence to be submitted by both parties, i.e., the P. O. Department and the different railways interested, what would be a fair rate of payment for the service. The Postmaster General's report was concurred in and the matter was referred to the Board.

On May 5, 1917, E. W. Beatty, Vice President and General Counsel, C.P.R., and W. H. Biggar, General Counsel, G.T.R., applied to the board as follows:—"The Canadian Pacific and Grand Trunk Railway Companies on behalf of themselves and all other railway companies carrying mails in Canada claim that the rates of remuneration established by order in council on Jan. 27, 1914, now in force, do not afford fair and reasonable compensation for the service rendered, and ask that fair and reasonable rates be determined by the Board pursuant to the reference contained in order in council of Mar. 7, 1917. They submit that the same principles that determine whether passenger rates or freight rates are fair and reasonable should be applied to the fixing of mail rates, that mails should not be carried at the expense of other traffic, but should bear their due proportion of the cost of railway operation, and the fair value of the capital employed therein, and that such due proportion should be determined by the nature of the traffic and the service rendered.

"The service rendered comprises:—The construction and maintenance of approved type of railway post office and apartment r.p.o. cars on high speed passenger trains; the haulage of 'storage' mail cars on high speed passenger trains; the carrying, waybilling and general handling of closed pouch mails and parcels post in baggage cars; the switching and spotting of r.p.o. apartment, r.p.o. and storage cars for convenient loading, unloading or transfer of mails and par-

cels post; the equipping of r.p.o. and apartment r.p.o. cars with bunks, mattresses, chairs, brooms, drinking tanks, stamp pads, cooking apparatus, and furnishing of gas for cooking; the lighting, cleaning and heating of r.p.o. and apartment r.p.o. cars; the carriage of from one to 10 or 11 mail clerks in r.p.o. and apartment r.p.o. cars; the providing, without charge, for the cars and storage of mails at junction points when such mails have to be held or stored for train connection, and are to be transferred from one train to another of the same company, the work of transferring mails being performed by the railway company, except in a few exceptional cases where the department has provided special staffs for the purpose; the furnishing, erection and maintenance of mail catching posts at stations where mail carrying trains do not stop; that mail shall be given preference over all other traffic, and the furnishing of space at the larger stations for mail sorting purposes or general handling. The department pays a small rental for such space, which rental the railways contend is not sufficiently compensatory.

Notwithstanding such special and preferential service, the present rates of remuneration for mail carriage are far below the authorized rates for express, passenger and freight traffic. The revenues from the carriage of mails upon any unit basis are far below the revenues upon any like basis derived from the carriage of other lines of traffic. The revenues from the carriage of mails are far below the cost of the service, calculated upon any of the conventional modes of dividing costs of operation. They are far below the rates paid by the United States Post Office Department for the same service. The applicants claim that just and reasonable rates are not less than double the rates established by the order in council now governing the same, and ask that an early date be appointed for hearing the evidence in support thereof, as provided by the order in council of reference."

The matter was set down for hearing at Ottawa on Nov. 6 and is still before the board.

**Cleveland Railway Advances Fares:—**Effective Jan. 1, the Cleveland, Ohio, Ry. will increase its fares to 4c cash, three tickets for 10c, and 1c for a transfer, with no rebate. The advance was made necessary by abnormal prices and wage charges. The Street Railway Commissioner's records show that since 1910 salaries of employes have advanced from 27c and 30c an hour to 32c and 35c, the present scale. A further increase of 5c an hour has been offered employes, but the men have rejected it. Records also show that prices for all materials have advanced far beyond quotations for the decade previous to the outbreak of hostilities.



## Double Tracking the Canadian Pacific Railway from Leaside to North Toronto.

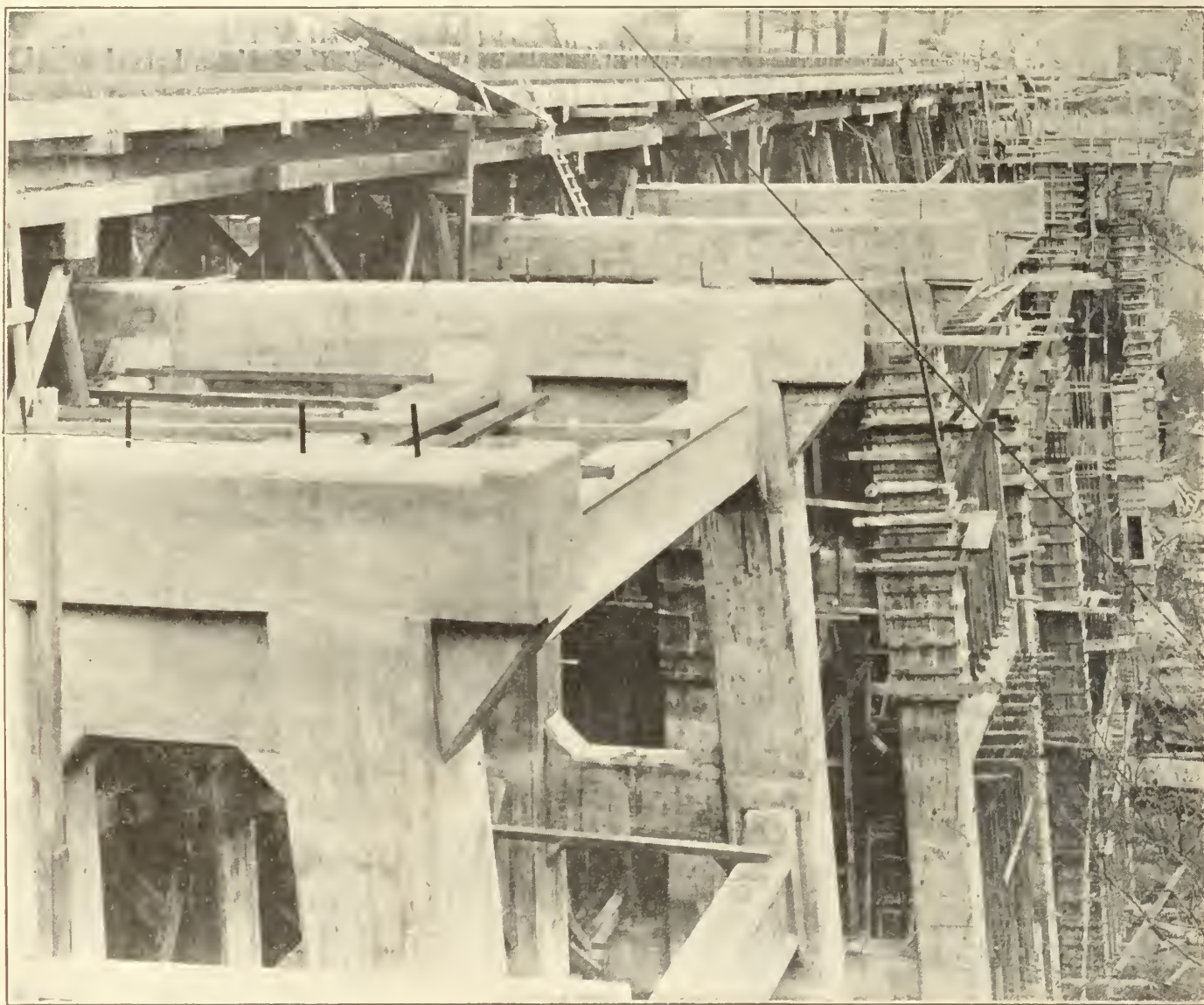
Present and prospective large increase in traffic have made it necessary to complete the double tracking of the C.P.R.'s North Toronto line at once. The rapid expansion of the City of Toronto to the north, and the recent completion of a handsome, modern passenger station at North Toronto have greatly increased the passenger traffic of this line, which also handles the heavy freight traffic between the east and the Buffalo and Detroit gateways. The two miles of single track between the double track east of Leaside

concrete and is to be completed and ready for the heavy winter traffic which commences with the close of navigation on the Great Lakes.

The bridge over the Reservoir ravine is known as 1.8 North Toronto Subdivision, and consists of a 3-track structure, located, with its south track approximately on the site of the existing main line, which will be used as a new switching lead, the other two tracks being used for eastbound and westbound traffic. The structure is 386 ft. long and 88 ft. high.

same plane with the other, but at approximately the points of contraflexure; in this feature the structure is unusual.

The bents consist of four posts, of which the two outer ones are battered, and the interior ones are vertical. They are in turn supported on substantial piers which are continuous transversely across the bridge. The floor slabs, as above stated, are all pre-cast and are placed on the transverse caps of the towers by derricks. The deck will then be waterproofed in the usual manner, with a membrane



Reservoir Ravine Bridge, North Toronto, Canadian Pacific Railway.

Jct., and west of North Toronto is a very busy piece of line at present and the increased traffic in immediate prospect necessitates prompt relief.

No material changes in grade or alignment are being made, as the new work will run to 0.4% for the former, and 3° for the latter. The grading is comparatively light, and this, together with all track work is being handled by the company's forces. It has, however, been necessary to replace two single track steel viaducts, the one over the Toronto Belt Line by a 2-track, and the one over Reservoir Park ravine by a 3-track structure. This is being done in reinforced

supported on two abutments and five towers, which in turn support pre-cast T-beam floor spans of such design that when laid alongside one another, they form a complete deck to carry the ballast and track work. A narrow sidewalk for railway employees only is provided on each side, protected by a pipe hand-rail, attached to reinforced concrete posts.

The towers are of unusual design, in that no diagonal bracing is used; but instead thereof, a system of horizontal struts, to reduce the stresses in the columns from the longitudinal and transverse horizontal forces. The immediate eight struts of one system are not in the

and a protective layer of asphalt, after which the ballast and ordinary track ties will be laid.

In order to maintain traffic and build the new bridge on the correct line, it was found necessary to build a temporary trestle on the north side of the structure, and entirely remove the old steel work. This allowed the use of the most economical length of concrete spans and also ensured that the new concrete would not be disturbed by the vibrations due to traffic passing on the old bridge.

The nature of the reinforcement in the towers is not different from modern practice. It consists of vertical rods located



in the rectangular post sections. These rods are securely tied across to opposite rods, at close intervals, by units composed of rods previously bent to suitable shapes.

The towers were poured story by story and splices in reinforcing bars were located immediately above the horizontal struts. The length of the horizontal girder slabs was dictated by the size of the reinforcing bars, the maximum size of which was 1 5/16 in. diam., bent up in the usual manner to take care of shear. All ends of the rods were bent in hook form to give mechanical bond. Each of the finished slabs weighs approximately 57 tons, and this, as well as the size of the rods, was the controlling feature in deciding span lengths.

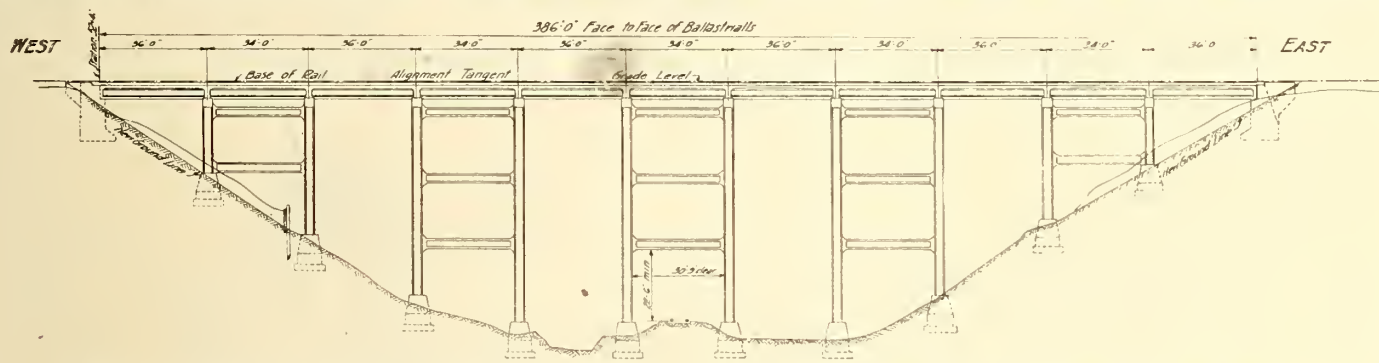
The bridge over the Toronto Belt Line Ry. is known as 0.9 North Toronto Sub-

supervision of J. M. R. Fairbairn, Assistant Chief Engineer, the designs being made by P. B. Motley, Engineer of Bridges, and the work was carried out under J. H. Barber, Engineer in Charge. The contractors of bridge 1.8 were Wells and Gray, Ltd., and for bridge 0.9 the Dominion Construction Co.

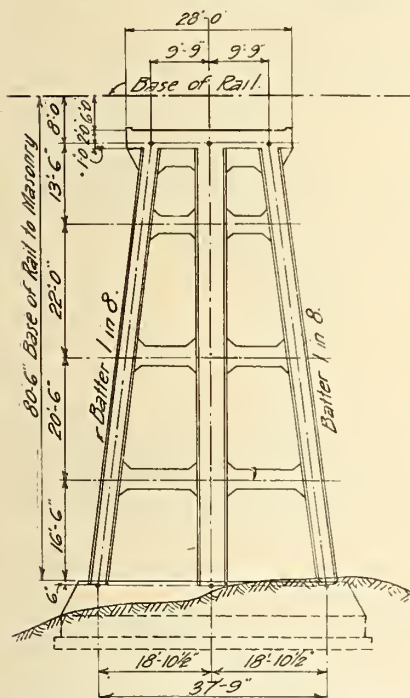
### The Railway Situation in Hamilton.

The Hamilton, Ont., City Council on Sept. 12 approved of proposal C, in the report of W. F. Tye, M.Can.Soc.C.E., and J. E. N. Cauchon, A.M.Can.Soc.C.E., on the railway situation in that city, as published in Canadian Railway and Marine World, Sept., 1917, pg. 342, and transmitted it to the Board of Railway Commissions as representing the city's

pose, this having been confirmed by W. F. Tye, as the result of a special examination of the locality. The number of cars switched in Kinnear yard increased from 8,066 in 1906 to 17,764 in 1914, and to 34,363 in 1916, and it is evident the company's facilities there are inadequate. The board, therefore, had no alternative but to grant the application, unless an arrangement between the company and the city could be arrived at. The Chief Commissioner had suggested previously that, instead of an expropriation order being made, the city should allow the company to occupy the land for five years, without any provision for renewal, and at the end of that time the city and the railways might be in a position to finance the ultimate solution of the Hamilton railway problem in whatever form it might take. The city, however, did not



Bridge over Toronto Belt Line Railway Ravine, on double track work, Canadian Pacific Railway, between Leaside and North Toronto.



Bent No. 7 of C.P.R. bridge over Toronto Belt Line Railway Ravine, Toronto.

division, and is similar in general elevation to the Reservoir ravine bridge as well as in length and height. It has the same number of towers and abutments. It supports, however, only two tracks, instead of three. The bents consist of three posts, two outer-battered and one inner-vertical, and being a 2-track structure, the width is correspondingly narrower. There will be two narrow sidewalks for railway employes, protected by reinforced concrete posts and rail fence of same general character as other bridge.

Both works were executed under the

views, and petitioned the board to adopt the recommendations, and to permit no new railway entrance into the city, and no extensions, additions, or changes in existing railway works there, unless they were in accordance with proposal C, and that the railways be asked to adopt the measures recommended in it. The application was heard at Hamilton, Oct. 22, together with an application by the Toronto, Hamilton & Buffalo Ry., for authority to take over, without the city's consent, certain undeveloped city land, 120 ft. wide, immediately south of the railway, from Sherman St. on the west, to Gage St. on the east, to enable the company to enlarge its Kinnear yard, so as to provide additional tracks for freight traffic.

The Chief Commissioner, Sir Henry Drayton, in giving judgment, Dec. 12, pointed out that the Tye-Cauchon report proposes to remove the T. H. & B. R. from the south district of Hamilton, and place it with the G.T.R. in the north. The T. H. & B. R.'s location was originally in the north end, but was changed to the south as a result of civic action, a city bonus bylaw affirmed by the ratepayers definitely approving of the present location. The bylaw having been ratified by the Dominion Parliament, and the Ontario Legislature, the Supreme Court of Canada held that the board had no jurisdiction to order a diversion of the T. H. & B. R. from its present site, to the north. The Chief Commissioner therefore decided that the board had no jurisdiction whatever to make an order adopting and carrying into effect the Tye-Cauchon recommendations and that the city's application must be refused.

The Chief Commissioner also held that it had been established that the proposed enlargement of the T. H. & B. R.'s Kinnear yard was both feasible and convenient, and that the board's Chief Operating Officer had reported the land the company asked for as being necessary for its pur-

act on the suggestion.

The Chief Commissioner announced that the formal order granting the T. H. & B. R.'s application would be held for seven days, viz., to Dec. 19, to give the city an opportunity of saying whether it would lease the land to the company for 5 years or whether it would prefer an expropriation order to go. In conclusion the Chief Commissioner said: "Mr. Tye is a railway engineer of eminence and of national standing. Full, fair and complete consideration ought to be given to the railway solution that he has endorsed. Everybody admits the present situation to be bad; the railway's remedy is to raise its tracks; Mr. Tye's remedy is to remove them altogether; but the parties interested, that is the different railways and the city, should, as I see it, refer the whole question to their respective engineers, with its instructions to work one with the other in an honest attempt to arrive at the best solution of what admittedly is a serious and difficult question."

Subsequently, on the request of the chairman of the Hamilton City Council's railway committee, the issuing of the order was further delayed until the city council's meeting, which was fixed for Dec. 26, and of the result of which we have no advice at the time of writing.

**Railway Lands Patented.**—Letters patent were issued during November, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry. ....	3,491.00
Canadian Northern Ry. ....	7,207.47
Central Canada Ry. ....	151.81
Edmonton, Dunvegan & British Columbia Ry. ....	6.31
Grand Trunk Pacific Ry. ....	160.00
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. ....	1,202.00
Total . . . . .	12,218.59



## Grand Trunk Railway Car Shops at Port Huron.

The G.T.R. has practically completed the construction of a new plant at Port Huron, Mich., for the repairing of freight and passenger cars. The principal car repair plant for the lines west of the St. Clair and Detroit Rivers has been at Port Huron for many years, but was destroyed by fire in the winter of 1914-15. It was of limited capacity and was located at the terminus of the old line previous to the construction of the tunnel. After the fire, negotiations were carried on between the town and the company, resulting in the selection of the present site which is advantageously located near the new

The power plant will consist of three 200 b.h.p. and three 150 b.h.p. return tubular boilers, the boiler pressure being 150 lb. per sq. in. The boilers will be fitted with superheaters, giving 150 degrees superheat when coal is used, and 200 degrees when wood refuse is used, and they will be adapted for handfiring, this arrangement being considered best, on account of the large amount of refuse varied in character, which will be burned. Other units will include two air compressors of 2,500 cu. ft. combined capacity of the cross compound type, specially adapted for use with superheated

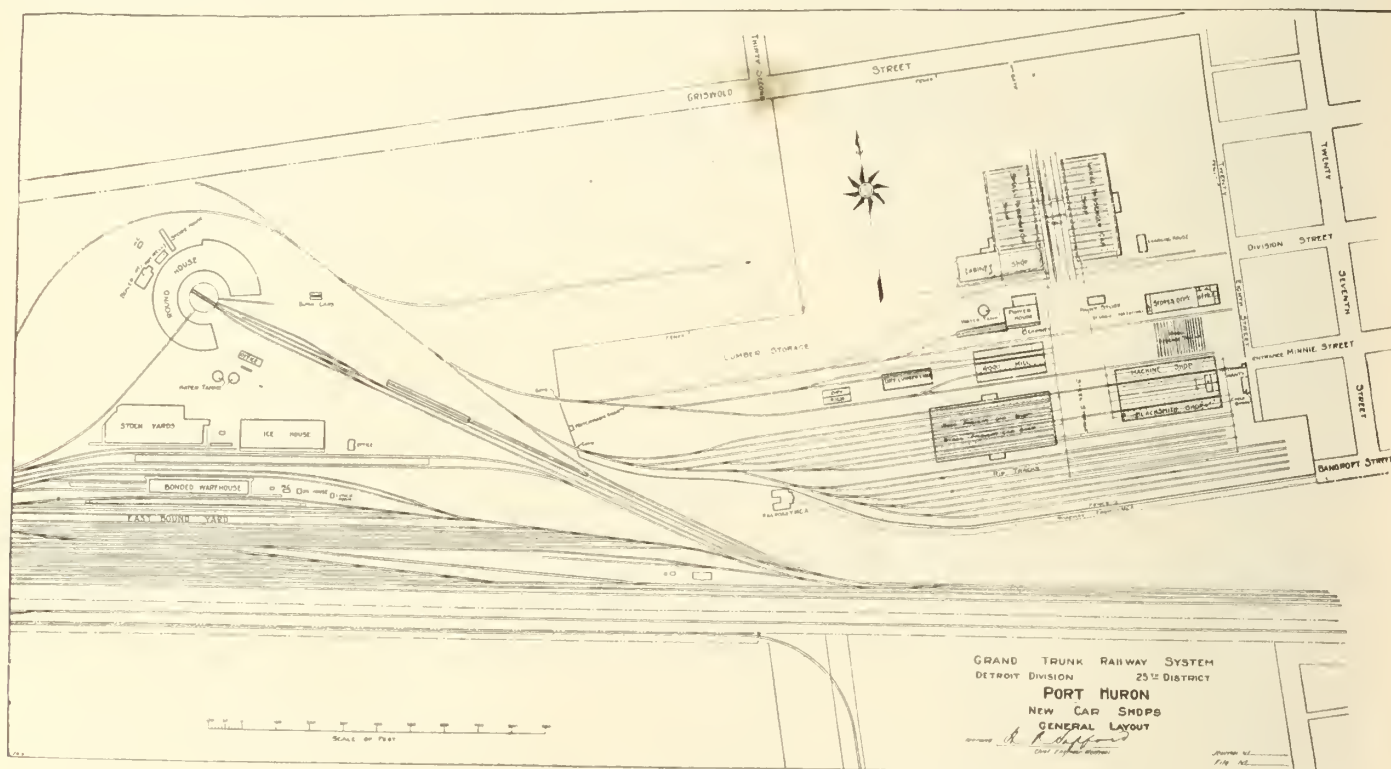
ger car shops, except that the buildings are divided by a party wall only, instead of the space occupied by the transfer table.

The cabinet shop is two stories, the general construction being similar to that of the car shops.

The blacksmith and machine shops are planned in a similar manner to the freight car shops, with a fire wall dividing them.

The woodmill, dry lumber store and less important buildings are of the usual type and contain no special features.

The stores building is constructed on



General Layout, Grand Trunk Railway Car Shops, Port Huron, Mich.

tunnel line and the locomotive house. The new plant will consist of:

Power plant—Engine room . . . . .	35½ x 70 ft.
Power plant—Boiler room . . . . .	55 x 98 ft.
Large passenger car shop—15 cars capacity . . . . .	134½ x 303½ ft.
Small passenger car shop—12 cars capacity . . . . .	134½ x 240 ft.
Steel freight car shop—28 cars capacity . . . . .	78 x 360 ft.
Wood freight car shop—28 cars capacity . . . . .	78 x 360 ft.
Cabinet shop—2 stories each . . . . .	73 x 250 ft.
Blacksmith shop . . . . .	74 x 299 ft.
Machine shop . . . . .	74 x 299 ft.
Woodmill . . . . .	90 x 210 ft.
Dry lumber stores . . . . .	35 x 149 ft.
General stores . . . . .	59 x 153 ft.
General offices . . . . .	59 x 63 ft.
Paint store . . . . .	25 x 50 ft.
Dry kiln, 2 compartment . . . . .	25 x 50 ft.
Battery charging house . . . . .	25 x 50 ft.
Repair track yard, with 200 car capacity.	

The arrangement of buildings was given special attention with a view to distribution of power; the possibility of extending the plant and to ensure materials being handled by direct movement from the stores to the finished product. The offices are at the city end of the site, fronting to 28th St., and standing back about 50 ft., thus allowing of a good tracks, occupy an area of approximately 55 acres and the total cost is estimated at about \$700,000.

steam. The superheat of these air compressors may be controlled by proportioning their supply of wet steam. Boiler feed, vacuum and fire pumps and open type water heater will be installed. The boilers will be provided with brick stack 150 ft. high and 6½ ft. in diameter, connected with steel breeching. The heating requirements for the shops will be considerable, due to the large amount of special work, in the nature of painting and varnishing, and will be supplied by cast iron radiators of the wall type, and pipe coils distributed as required. Coal will be directly delivered to bunkers inside the power house, by hopper cars discharging through a steel trestle.

The passenger car shops are so planned that each car under construction or repair will occupy one bay of either building, with a liberal allowance all round for working. The two buildings are parallel to one another, with a space of 100 ft. between, which is occupied by a transfer table serving both. The roofs are designed with monitors, which run across the length of the building and so light and ventilate each individual bay.

The freight car shops are planned for the cars to enter at one end, and the construction is similar to that of the passen-

the same general lines as the car shops, and is provided with racks and shelves, designed specially for the very varied stores which have to be carried in stock. Office space for the storekeeper and his staff is provided at one end.

The paint store and battery charging room are of fireproof construction throughout.

The drying kiln is a specially designed building of 2 compartments, with doors at each end. This arrangement will permit of cars of lumber entering at one end and when dried being removed at the other, no delay or inconvenience being occasioned through having to remove one car to get at or remove another. Each compartment is separate from the other and capable of being used independently. The heat will be supplied by means of steam pipes located below rail level and a special system of air ducts will provide ample air changes, which will be capable of regulation, and provision is also made for the introduction of steam, as required, to check too rapid drying. The walls and roof will be insulated by air cavities, so that even temperature may be maintained.

The general offices are attached to one end of the stores building, with a brick



firewall dividing. The interior is divided by terra cotta hollow block walls and the exterior walls are furred with the same material, all surfaces of walls and ceilings being plastered and painted.

Lavatories and lockers are provided in each building for a full complement of workmen. Ample storage spaces for steel, wheels, lumber, etc., have been al-

lowed for and the layout generally has been planned with special attention to economical working. The transfer table is 80 ft. long, designed to carry a 96 ton car. It will be operated by electricity. Electrical energy for lighting and operation of machines will be supplied by the Port Huron Electric Power Co. Provision has been made for fire protection

by the erection of a 100,000 gal. steel storage tank, 100 ft. above the ground line, with a complete system of piping and fire hydrants situated at convenient points.

The buildings have been planned and erected under the direction of the company's Chief Engineer, H. R. Safford, Montreal.

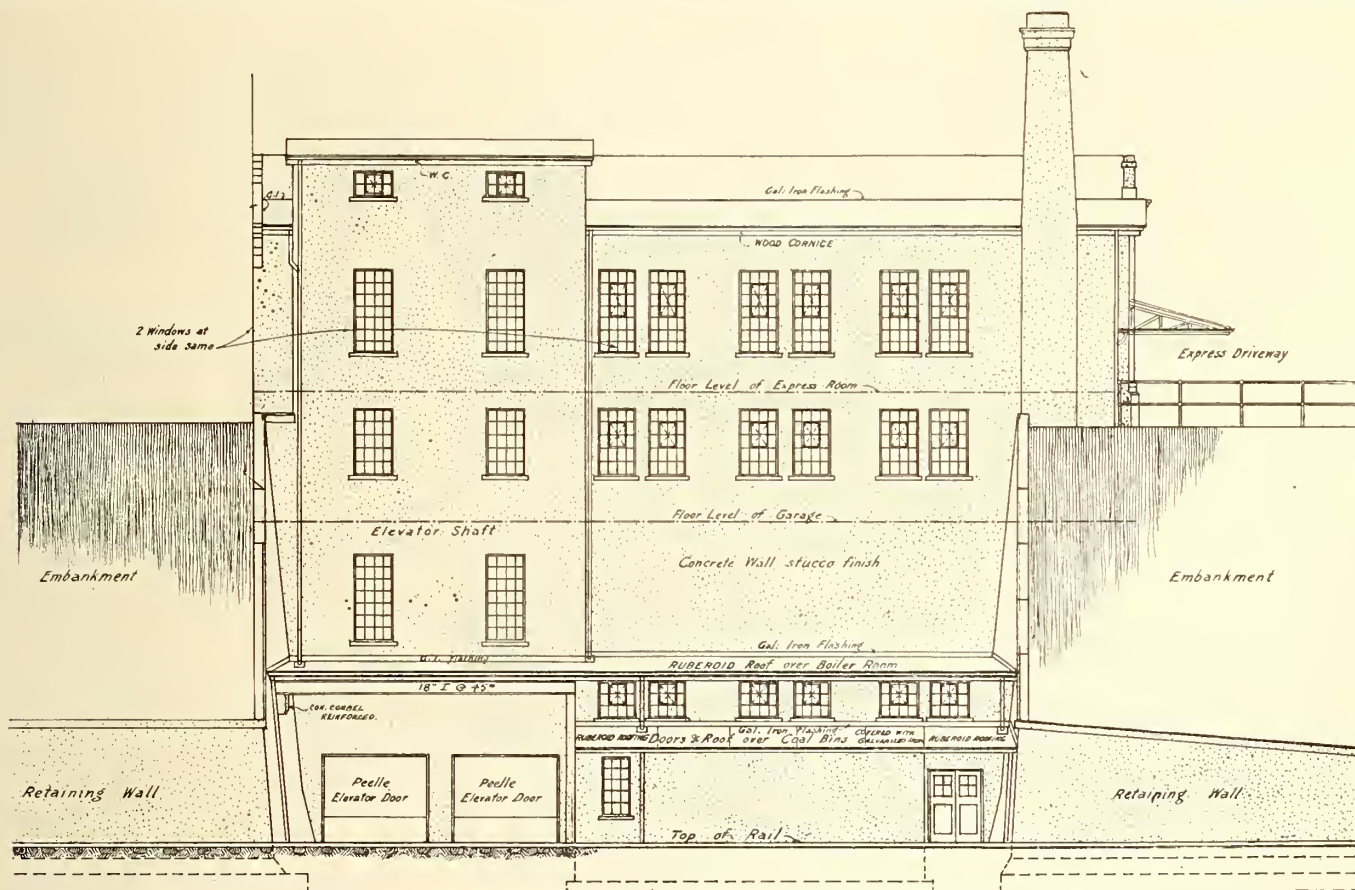
## Canadian Northern Railway Terminal Buildings in Montreal.

The temporary station being built by the Canadian Northern Ry. at the corner of Lagachetiere and St. Monique Street, Montreal, was fully described and illustrated in Canadian Railway and Marine World for July, 1917, and some additional information and plans were published in our November issue. The progress of the work on the temporary station is now

the vacuum principle and the waiting rooms and lavatories will be heated under thermostatic control.

The work remaining to be completed is the plaster work of the walls and ceilings, the cement plaster of train level portion of building, baggage room and lavatories, and the plaster finish of the waiting room, vestibule, etc. Then will

building being erected on Mansfield St. is also nearing completion, but owing to the retaining walls of the railway cutting not being ready, a portion of the rear of the building has to be left incomplete until the retaining walls are finished. The building proper has approximately 100 ft. frontage by 80 ft. depth, with boiler room and freight elevators adjoining in the



Rear Elevation, Canadian Northern Express Co.'s Building, Montreal.

so far forward that a fair idea of the completed work can be had. The whole of the brick, tile, concrete and steel work is finished, and the building is ready for the plasterers, the finished wood work, painting, etc. Following is a resume of what has been done and what is required to complete the structure:

After excavating for the foundation and piers, which were carried down to a rock foundation, the reinforced concrete work was proceeded with. The whole of the structural parts, including the walls, floors and roof are formed of that material, making an absolutely fireproof building. The inside of the outer walls and dividing partitions are of fireproof tile, which are ready for the plaster finishing. The roughing for the plumbing and heating is completed, including all pipe mains, and all the conduits for electric wiring, etc. The heating will be on

follow the carpenter trim, and the fixtures, which will be of Georgia pine throughout, finished with a fumed oak flat finish. The marble work, plumbing fixtures and radiators will be proceeded with immediately after the plaster work is completed, and the wiring for power and light, and electric fixtures, etc., and finally the finishing by the decorators. Beside the finish of the wood work, the waiting room and vestibule walls will be painted with lead and oil paint, and the ceilings and walls of baggage room, lavatories, and train space will be treated with cement paint in suitable and harmonious colorings. Provision is being made for telephone and telegraph, and a system of time clocks controlled by the Great North Western Telegraph Co.

Express Building, Garage and Boiler Room.

The Canadian Northern Express Co.'s

rear. The building is divided into three parts, viz., express room, garage and boiler room. Facing Mansfield St. the building shows as one story and a half and basement, but on the rear appears much higher, owing to the deep cutting, which is 46 ft. below the level of Mansfield St. The main floor will be occupied as the express room, with shipping doors on the northwest side and there will be offices for the agent, clerks, records and also lavatory accommodation. Underneath the express room the whole space will be utilized as a garage for delivery trucks and will be approached by a driveway from Mansfield St. Connecting both express room and garage to the railway tracks will be two freight elevators, run by electric power and capable of carrying 4,000 lb. each. Adjoining the entrance to the elevators on the track level will be a car siding.



The boiler room is on the level of the tracks, where coal trucks can run right alongside the coal bunkers and unload directly into them, and cinders can be loaded from boiler direct to cars. The boiler room will not only supply steam for heating the express building, but also for the terminal station, 300 ft. away, and will supply steam to car points for heat-

ing cars which will be disconnected from the steam locomotive at Cartierville and brought to the terminal by electric locomotives.

The building is being constructed of brick, with concrete foundations, reinforced concrete floor in express room and reinforced concrete ceiling of garage with flat timber roof. The exterior will be ce-

ment stucco plaster and have decorative flat pilasters and iron cornice. The shipping driveway will have an overhanging steel and corrugated iron roof.

The completion of the work may be looked for early in the new year. It is being carried out under the supervision of Geo. C. Briggs, Supervisor of Buildings, C.N.R.

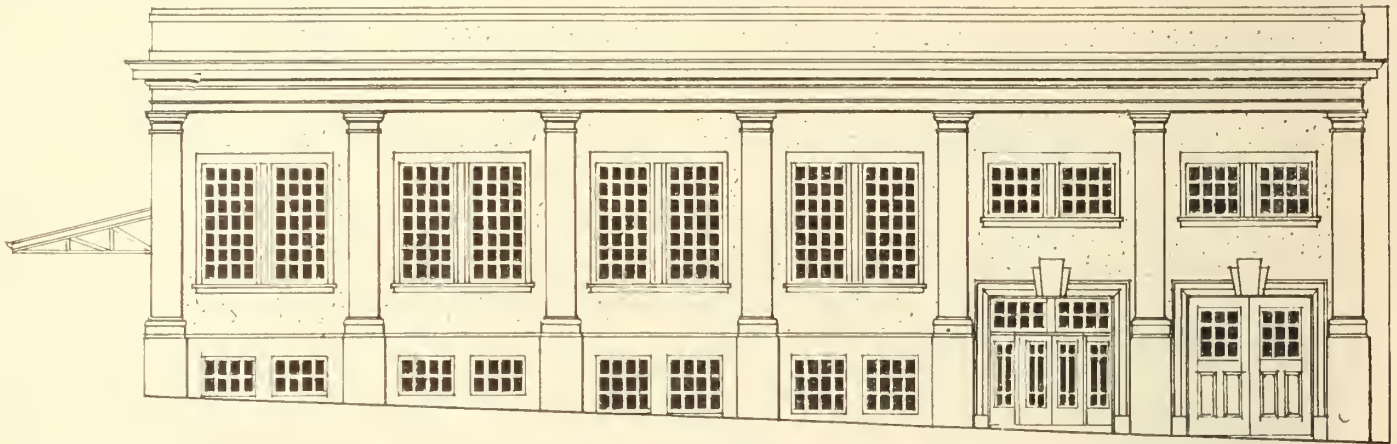
## Railways Authorized to Advance Freight and Passenger Rates.

Sir Henry Drayton, Chief Railway Commissioner, delivered judgment Dec. 26, on the application of Canadian railways for a recommendation to the Governor in council, under the War Measures Act, for a general advance in freight and passenger rates. The judgment, which was concurred in by D'Arcy Scott, Assistant Chief Commissioner, Hon. W. B. Nan-

maximum of 2c per 100 lb.

The existing lumber rate basis in the west has been built up by agreement between the mills and the railways, the important matter being the extent of the rate differences between different groups of producers. A percentage arrangement would create disparities. From British Columbia mills to the different groups

the railway management. They are very largely represented in wage increases, which have had the approval of the public at large. Public bodies and public sympathy have been with the men in the increases which they have obtained. No objection whatever has been made by any contestant on the ground that the railways have improvidently increased



Mansfield St. Elevation, Canadian Northern Express Co.'s Building, Montreal.

tel, Deputy Chief Commissioner, and Commissioners McLean and Goodeve occupies 76 foolscap pages of typewritten matter. It is officially summarized as follows:

Subject to the limitations of the Crowsnest Pass agreement and to the specific limitations contained in the judgment, freight rates are permitted to be increased, in general, approximately 10% in the west and 15% in the east.

While the Grand Trunk Pacific and the Canadian Northern are not included in this agreement, they are to be treated as if included.

With a view to lessening the disturbances as between territories, now established, of western distributing centres, and having also in mind the increase in the all rail rate already allowed, a 15% increase west of Port Arthur, and a 10% increase on the eastern balance of the through rate is permitted, but again subject to the limitations worked by the Crowsnest agreement.

On coal, an increase of 15c a ton is allowed, it being considered that this will bear less harmfully on the consumer than a percentage increase. In the western hearings the evidence was that a flat increase was preferable to the percentage increase asked for by the railways.

An increase of 5c a ton is permitted on clay, gravel and crushed stone.

On grain to Lake Superior ports, an increase of 2c per 100 lb. is allowed; this is approximately 10%.

Grain and grain products, etc., in the west, other than for movement to Fort William, and also on the movement of these from Fort William east, are permitted an increase of 15% subject to a

increase of from 3 to 5c, according to distance, are allowed. From Northern Alberta and Saskatchewan spruce districts 15%, with a maximum of 3 to 4c, according to distance. From British Columbia to Eastern Canada, 10%. From Lake-of-the-Woods and Rainy River, 3 to 4c, according to distance. From Port Arthur west 3 to 5c, according to distance. Between points in Eastern Canada a 15% increase, which works out a maximum of 3c.

Transcontinental class rates may be increased 10%. No increase allowed in transcontinental commodity rates.

In British Columbia an increase of 10% on freight rates is allowed; no rates to be lower than the prairie rates, as increased.

Railway tolls incidental to transportation, switching, demurrage, reconsignment, sleeping or parlor car accommodation, weighing, refrigeration, heating, car diversion, or other special services, are not allowed any increase.

No increase in passenger rates is allowed in British Columbia. A 15% increase is allowed in the territory where the maximum rate is 3c. It is at the same time pointed out that in the public interest, with a view to conserving coal, railway facilities and man power, that passenger travel should be as light as possible, so as to facilitate efficient freight movement.

It is set out that no greater profits will be obtained by the railways under the new rate schedule than in the past. The increased rates allowed will certainly not equal the increase in costs to which the railways are subject. These increased costs are not in any way attributable to

wages. The other items of cost increases are chiefly the result of today's prices of coal, steel material and railway supplies. The railways suffer in this regard in common with other users of these necessities. The increased cost can certainly not be said to be the railways' fault. While there was difference of opinion among trade organizations, a considerable number hold that reasonable increases, within the discretion of the board, were justifiable. As to the representations made regarding aid by loans, as well as change in ownership the board has no right to express an opinion, as its powers are concerned with rate matters.

Canadian Northern figures show a steadily declining net revenue. In Sept., 1917, the net revenue was 41% less than in 1916, October, with 6% increase in gross, shows 51% decrease in net. Maintenance charges have been cut down with a view to economy. As a result, efficiency has decreased and accumulated maintenance charges will have to be met later. At the same time, costs of labor, coal and materials, have been increasing. In September, the Canadian Pacific's net decreased 28.3%. In 10 months, ended Oct. 1917, the gross revenue of the Grand Trunk increased 11%, while expenses increased 22%. In October gross increased less than 2%, while net earnings decreased 49%.

It is found that there can be no question, in view of the actual results, that the railways require greater revenues, and must have them if proper efficiency is to be maintained, and the demands of the country for transportation at all adequately met.



# Mainly About Railway People Throughout Canada.

**Frank Scott**, Vice President and Treasurer, G.T.R., Montreal, has been elected a director of the Guarantee Co. of North America.

**R. P. Wilson**, Division Engineer, Hudson Bay Ry., Pas, Man., has been elected an associate member of the Canadian Society of Civil Engineers.

**S. P. Brown** M.Can.Soc.C.E., who resigned as Chief Engineer, Mount Royal Tunnel & Terminal Co., Montreal, recently, has been appointed Vice President and General Manager, Ford, Bacon & Davis, engineers, New York.

**L. Bonney**, who died at Winnipeg, Dec. 16, aged 59, was for some time in C.P.R. service, first as a lecturer in Scotland to induce emigration to Canada, and later in charge of an immigration office in Winnipeg. He was subsequently in charge of stores, at Whitewood and at Keewatin.

**William Walkden**, who was transferred from junior to associate member of the Canadian Society of Civil Engineers recently, has been in the office of Bridge Engineer, Western Lines, Canadian Northern Ry., Winnipeg, since 1912, and since the death of W. L. Mackenzie, on Feb. 6, 1917, has been in charge of that department.

**W. C. C. Mehan**, heretofore General Superintendent, Mountain Division, Grand Trunk Pacific Ry., Prince Rupert, B.C., who has been granted leave of absence, will spend some little time visiting relatives and friends in Ontario and Quebec, and in the central and southern United States, renewing friendships after an absence of ten years. His address for the present is St. Albans, Vt.

**A. H. Crawford**, who died at Toronto, Dec. 9, aged 78, was for some years in railway service, being secretary to the Freight Superintendent, G.T.R., when that position was held by the late P. S. Stevenson. He was later, G.T.R. Freight Agent at Kingston, Ont., and General Superintendent, Toronto Grey and Bruce Ry., and retired from railway service when that company was absorbed by the C.P.R.

**W. J. Mathison**, who has been appointed Assistant Superintendent, District 1, Intercolonial Division, Canadian Government Railways, Montreal, was born at Havelock, Ont., Dec. 12, 1877, and entered railway service with the C.P.R., subsequently transferring to the G.T.R., and in Nov., 1916, to the Canadian Government Railways, as Assistant Superintendent at Halifax, N.S., which position he held to Nov. 5, 1917, when he was transferred to Montreal.

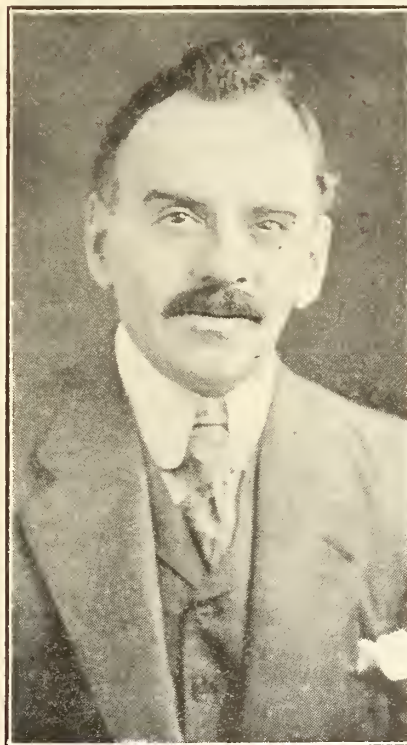
**J. W. N. Johnstone**, General Passenger Agent, Reid Newfoundland Co., who has also been appointed Assistant to the President, St. John's, Nfld., was born at Campobello, N.B., Oct. 4, 1878, and entered transportation service in the General Freight Department, C.P.R., St. John, N.B., serving in various capacities in that department from junior clerk to assistant to the chief clerk until Feb., 1902, when he entered Reid Newfoundland Co.'s service as chief clerk to the General Freight Agent, St. John's, Nfld., and was appointed General Passenger Agent, Aug. 21, 1906.

**George Cobb**, who has been appointed Assistant to General Superintendent, Reid Newfoundland Co., St. John's, Nfld., was born at Coupar Angus, Scotland, Apr. 21, 1885, and entered Reid Newfoundland

Co.'s service, Nov. 14, 1901, since when he has been, to Sept. 27, 1903, telegraph operator; Sept. 27, 1903, to May 31, 1905, agent, Gambo, Nfld.; May 31, 1905, to



**J. A. Heaman, B.Sc., A.M.Can.Soc.C.E.**  
Who has been appointed Assistant Chief Engineer,  
Grand Trunk Pacific Railway, succeeding  
H. A. Woods, resigned.



**J. A. Vallerand**  
Superintendent and General Freight and Passenger  
Agent, Roberval-Saguenay Railway.

May 20, 1908, night dispatcher, St. John's; May 20, 1908, to Nov. 11, 1910, emergency dispatcher and agent, Bishops

Falls; Nov. 11, 1910, to Jan., 1913, Chief Dispatcher, St. John's; Jan., 1913, to Dec. 1917, Superintendent, St. John's.

**O. M. Lavoie**, whose appointment as acting Superintendent of Car Service, Eastern Lines, C.P.R., Montreal, was announced in our last issue, was born at St. Cyrille de Wendover, Que., Oct. 16, 1884, and entered railway service Nov. 25, 1901, since when he has been, to Sept. 2, 1902, operator, Quebec, Montreal & Southern Ry., at various points; Sept. 2, 1902, to Apr. 25, 1910, operator, C.P.R., at various points on the Farnham Division; Apr. 25, 1910, to Jan. 6, 1915, dispatcher, C.P.R., Farnham, Que.; Jan. 6, 1915, to Mar. 27, 1917, Chief Dispatcher, C.P.R., Farnham, Que.; Mar. 27 to Nov. 23, 1917, Inspector of Transportation, Eastern Lines, C.P.R., Montreal.

**C. Price Green**, who, as announced in our last issue, has been appointed Industrial Commissioner, Canadian Northern Ry., at Toronto, on coming to Canada from England started work in the C.P.R.'s engineering department, was on location and construction for some years and was afterwards engaged in mining and meteorological work. He then went to the G.T.R., and after a short time in its operating department was transferred to its passenger department, remaining there until 1906, when he was appointed on the Canadian Northern Ry.'s passenger department staff at Toronto. For the past three years he has been General Agent on the Secretary's staff.

**J. Achille Vallerand**, whose appointment as Superintendent and General Freight and Passenger Agent, Roberval-Saguenay Ry., Chicoutimi, Que., was announced in our last issue, was born at Quebec, Que., Oct. 21, 1878, and entered railway service in June, 1895, since when he has been, to Dec., 1896, junior clerk, Quebec, Montmorency & Charlevoix Ry., Quebec; between Dec., 1896 and June, 1900, assistant agent, C.P.R., Garneau, Que., and Quebec & Lake St. John Ry., St. Tite, Que.; June, 1900, to May, 1904, station agent, Q. & L. St. J. R., Jonquiere, Que.; May, 1904, to July, 1908, station agent, same road, St. Anne de Beaupre, Que.; July, 1908, to June, 1910, clerk in Superintendent's office, Quebec Ry., Light & Power Co., Quebec; June, 1910, to Sept. 1917, Auditor, same road, and from Dec., 1912, also Freight Claim Agent, Quebec.

**George A. Hoag**, who has been appointed Superintendent, Superior District, Ontario Division, Canadian Northern Ry., was born at Walters Falls, May 31, 1866, and entered railway service June 8, 1884, since when he has been, to May, 1886, switchman, G.T.R.; May, 1886, to Jan., 1888, night operator, G.T.R.; Jan., 1888, to Jan., 1896, day operator, G.T.R., Lyn, Ont.; Jan., 1896, to Nov., 1899, agent, G.T.R., Lyn, Ont.; Nov., 1899, to Mar., 1901, agent, G.T.R., Trenton, Ont.; Mar., 1901, to Oct., 1905, Yardmaster, G.T.R., Belleville, Ont.; Oct., 1905, to June, 1908, Trainmaster, Central Ontario Ry., Trenton, Ont.; June, 1908, to June, 1914, Superintendent, C.O.R., Trenton, Ont.; June to Dec., 1914, Superintendent of Car Service, Canadian Northern Ry., Toronto; Dec., 1914, to Oct. 31, 1917, Assistant Superintendent, C.N.R., Toronto.

**George N. Goad**, who has been appointed Assistant Superintendent, Toronto District, Ontario Division, Canadian Northern Ry., Rosedale, Toronto, was born at Toronto, Nov. 26, 1884, and entered rail-



way service in Sept. 1901, since when he has been, to July 1902, junior clerk, Division Freight Agent's office, G.T.R., Toronto; July 1902 to Sept. 1904, stenographer, same office; Sept. 1904 to Dec. 1905 chief clerk, Canadian Freight Agent's office, Lehigh Valley Rd., Toronto; Dec. 1905 to Mar. 1907, stenographer, Third Vice President's office, Canadian Northern Ry., Toronto; Mar. 1907 to Aug. 31, 1915, chief clerk to Superintendent, and General Superintendent, C.N.R., Toronto; Sept. 1 to Dec. 31, 1915, chief clerk to General Manager, Eastern Lines, C.N.R., Toronto; Dec. 31, 1915, to Jan. 10, 1917, Inspector of Transportation, Eastern Lines, C.N.R., Toronto; Jan. 10 to Dec. 1, 1917, Terminal Trainmaster, Toronto Terminals, C.N.R., Toronto.

### The Death of Joseph Hobson.

Joseph Hobson, M.Can.Soc.C.E., Consulting Engineer, G.T.R., who died at Hamilton, Ont., Dec. 19, after a prolonged illness, was an outstanding figure in railway engineering for very many years and was associated with four of the great works undertaken on the Great Western and Grand Trunk Railways, these being the International bridge over the Niagara River between Fort Erie and Buffalo, the St. Clair tunnel under the St. Clair River, connecting Sarnia, Ont., and Port Huron, Mich., the replacing of the suspension bridge across the Niagara River at Niagara Falls by the present arch structure, and the rebuilding of the Victoria bridge at Montreal.

He was born in Guelph Tp., Ont., on Mar. 4, 1834, and educated in the local schools and at Toronto. He served an apprenticeship as an Ontario land surveyor at Toronto, and eventually qualified for both Ontario and the Dominion. He then entered the service of Gzowski & Macpherson, who had a construction contract on the G.T.R., between Toronto and Guelph, and later practiced as a land surveyor for some time, in Berlin (Kitchener) and Guelph. He returned subsequently to railway work, and until June, 1869, was engaged as assistant engineer on various lines in Nova Scotia, Ontario and Michigan. From June, 1869, to Apr. 1870, he was engineer on construction, Wellington Grey & Bruce Ry.; Apr., 1870, to Nov., 1873, Resident Engineer, International bridge, Buffalo, N.Y.; Nov., 1873, to June, 1875, Chief Assistant Engineer, Great Western Ry., Hamilton, Ont.; June, 1875, to Feb., 1896, Chief Engineer, same road, Hamilton; on the absorption of the G.W.R. by the G.T.R. Aug. 22, 1882, he was appointed Chief Engineer, G.T.R. lines west of Toronto, Hamilton, Ont., and on Feb. 1, 1896, Chief Engineer, G.T.R. system, Montreal continuing to live in Hamilton, and retaining that position until Aug., 1907, when he became Consulting Engineer for the company.

As before stated, he was Resident Engineer on the International Bridge across the Niagara River between Fort Erie and Buffalo, he was Chief Engineer of Western Lines, G.T.R., when the Sarnia, Port Huron tunnel was built and the bridges across the Niagara River at Niagara Falls and across the St. Lawrence River at Montreal were built, while he was Chief Engineer of the whole G.T.R.

He was one of the first members of the Canadian Society of Civil Engineers, of which he was councillor in 1888, 1891 and 1892. He was also a member of the American Society of Civil Engineers and of the Institution of Civil Engineers, Eng. Robert Hobson, President, Steel Co. of

Canada, Hamilton, and J. I. Hobson, Treasurer, Canada Steamship Lines, Ltd., Montreal, are sons.

The funeral, which was private, took place at Hamilton, Dec. 21, and was attended by the following G.T.R. officials: U. E. Gillen, Vice President; H. R. Safford, Chief Engineer; M. S. Blaiklock, Engineer, Maintenance of Way; W. McNab, Engineer of Valuation, Montreal; H. E. Whittenberger, General Superintendent, Ontario Lines; E. G. Hewson, Division Engineer; G. A. Mitchell, Superintendent of Bridges and Buildings, and D. McCooe, Superintendent of Track, Toronto.

The Hamilton Spectator says:—"His life was full of the noblest and grandest conquests over the conditions and forces of nature. At a ripe old age, well earned repose came to him in comparative retirement; yet still the benefit of his accumulated knowledge and sound judg-



P.515: Joseph Hobson, M.Can.Soc.C.E., who died at Hamilton, Dec. 19, 1917.

ment was sought and cheerfully yielded. Most God-like among men are the rare spirits to whom is given in large degree a power approaching that of creation."

**Colorado Railway Fares Advanced.**—The Colorado Public Utilities Commission has authorized the Denver & Salt Lake Rd. to increase its local passenger fares from 4½c a mile to 5 round trip fares to be at a rate of 10% less than this. The road is in the hands of receivers, and has had poor traffic for several years.

**The Shawinigan Water & Power Co.,** which owns the terminal electric railway at Shawinigan Falls, and the electric railway at Three Rivers, Que., is reported to have sold an issue of \$4,500,000 two year 6% convertible notes in Boston, Mass.

N. F. Judah, Auditor, Edmonton, Dunvegan & British Columbia Ry., writes: "I would most certainly miss your valued publication, Canadian Railway and Marine World, if it did not reach me regularly."

### Gross Railway Earnings January 1 to November 30.

	1917	1916	1915
C. P. R.	\$134,833,000	\$124,231,000	\$93,542,000
C. N. R.	37,479,100	34,480,000	24,303,500
G. T. R.	60,573,539	54,971,385	45,609,088
	\$232,885,639	\$213,682,385	\$163,354,588

### Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
	\$18,583,600	\$15,313,800	\$3,269,800	\$2,202,500
Incr	\$ 437,500	\$ 962,800		
Decr			\$2,202,500	

Approximate earnings for three weeks ended Dec. 21, \$2,408,100, against \$2,616,200 for same period 1916.

### Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084,276.76	7,098,227.96	1,986,048.80	308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,180,541.98	4,174,977.62	441,241.66
May.	14,355,149.63	9,803,426.84	4,551,719.79	179,436.88
June	13,556,979.69	9,641,078.49	3,915,906.20	226,273.09
July	13,377,850.55	9,617,853.33	3,760,007.22	x257,084.51
Aug.	12,414,537.25	8,596,998.76	3,817,538.49	x1,650,248.36
Sept.	12,244,341.69	8,497,190.83	3,747,150.86	x1,382,608.30
Oct.	14,733,774.02	9,679,072.26	5,054,601.77	x620,037.60
	\$124,127,290.03	\$86,750,412.96	\$37,376,877.07	x\$2,514,263.36
Incr	\$10,226,414.11	\$12,740,677.47		
Decr.			\$ 2,514,263.36	
			x Decrease.	

Approximate earnings for November, \$14,942,000, and for three weeks ended Dec. 21, \$9,248,000, against \$13,157,000 and \$9,224,000 for same periods respectively in 1916.

### Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan. 1 to Oct. 31, 1917 and 1916.

	1917.	1916.	Increase.
G.T.R.	\$43,396,555	\$39,127,270	\$4,269,285
G.T.W.R.	8,004,931	7,781,671	223,260
D.G.H. & M.R.	2,788,094	2,761,787	26,307

Totals . . . \$54,189,580 \$49,670,728 \$4,518,852  
Approximate earnings for November, \$5,549,336, and for three weeks ended Dec. 21, \$3,613,592, against \$5,343,653 and \$3,520,136 respectively for same periods in 1916.

### Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, for November were \$841,638, against \$672,532 for November, 1916, and the aggregate earnings for five months ended Nov. 30 were \$3,124,085, against \$2,295,153 for November, 1916.

The Grand Trunk Ry.'s annual inspection of track was completed early in December, having occupied about six weeks and including a thorough examination of rails, ties, etc., on the 1,145 miles of main line, and on the branch lines. The inspection party travelled in a specially constructed car, fitted with electrically controlled devices for registering the efficiency marks gained by the various sections for excellence of track maintenance, which was described and illustrated in Canadian Railway and Marine World in previous years. There was the keenest competition between the various section gangs, foremen and supervisors, for the honors which are given to the section considered to represent the highest standard of maintenance work.



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## Index to Canadian Railway and Marine World for 1917.

At the end of this issue is a very complete index to the contents of the volume for 1917 which as in former years, will doubtless be fully appreciated by the large number of subscribers who bind Canadian Railway and Marine World for reference purposes.

Even a casual glance over the pages of closely printed matter will show the tremendous range of subjects covered and the thorough manner in which this paper represents the entire transportation interests of the whole Dominion, steam railway, electric railway and marine, as well as the subsidiary express and telegraph interests, and railway and canal contracting work.

## Apportionment of Cost of Railway Crossings in London Ont.

The Board of Railway Commissioners passed order 26,833 Dec. 15 as follows:—Re crossings of Burwell, Adelaide, and Rectory Sts. by the G.T.R. in London; and the question of the apportionment of the cost of installing and maintaining the gates required to be installed at the said crossings by order 26527, Sept. 11, 1917. Upon reading what is filed on behalf of the London St. Ry., the G.T.R. and the City of London, it is ordered that 20% of the cost of installing the gates at the crossings of Adelaide and Burwell Sts. be paid out of the railway grade crossing fund, 60% to be paid by the G.T.R., and 20% by the City of London; the watchmen's wages to be paid by the G.T.R., and the remainder of the cost of maintenance to be borne and paid 70% by the G.T.R. and 30% by the City of London.

That 20% of the cost of installing the gates at Rectory St. be paid out of the railway grade crossing fund, 60% to be paid by the City of London, and 20% by the G.T.R.; the interlocking device at the crossing to be connected up with the tower, and the necessary additional levers, if any, installed, so that the half-interlocker may be operated from the tower, as well as the gates; such work to form part of the cost of installation.

That the London St. Ry. Co. pay the wages of the day and night watchman, as at present appointed at the crossing of Rectory st.; the remainder of the cost of maintenance to be borne and paid by the G.T.R.; and the London St. Ry. to continue to pay the same maintenance charges as provided for in the Railway Committee of the Privy Council's order, Nov. 15, 1896.

## Toronto, Hamilton and Buffalo Rail- way Yard at Bridgeburg.

We are officially advised that the Toronto, Hamilton & Buffalo Ry.'s new yard at Bridgeburg, Ont., which is estimated to cost approximately \$500,000, is expected to be completed by Aug. 1. Its capacity will be about 1,000 cars, but it is being so laid out that tracks to accommodate an additional 1,000 cars can be laid when required.

The plans filed with the Board of Railway Commissioners show the work proposed to be done, and its relation to existing railway lines, pole lines, etc. Before tracks can be laid there is a considerable amount of preliminary work to be done. Bower Road is to be closed for a considerable distance and a new road made

south of the Michigan Central Rd., while the present telegraph and telephone lines and gas mains are to be diverted to the north. The Michigan Central Rd.'s Niagara Division tracks will be diverted from a point at the Y and a new connection with the M.C.R. main line will be made on the John T. James property. The Canadian Niagara Power Co.'s pole line along the M.C.R.'s existing Niagara Branch will be diverted. It is also proposed to close up some other short pieces of road, and the small yard area owned by the Pere Marquette Ry. This is near the Thompson Road, which will be carried under the G.T.R. tracks. The main lead from the M.C.R. tracks will be at mileage 1.21 from Bridgeburg, and connection will be made with the same line at the other end of the yard at mileage 2.63. The yard tracks will be laid out on the most modern principles, for quick handling of cars.

## Steam Railway Track Laid in 1917.

A preliminary table of new track laid in 1917 by the steam railways throughout Canada, made up from official replies to Canadian Railway and Marine World's annual circular is given below. Included in the mileage given are 11 miles of track laid during 1916 on the Alberta & Great Waterway Ry.'s Egg Lake branch, of which we were not advised sufficiently early to include it in our revised table in the Feb., 1917, issue.

The total miles of new track laid is 242.16, compared with 285.94 miles laid during 1916. This mileage was laid on 8 railways, while track was laid on 15 railways during 1916. Of the mileage reported, the Canadian Northern Ry. laid 91.44 miles; the Alberta & Great Waterways Ry. 84.30 miles; and the Grand Trunk Pacific Ry. 24.86 miles. By provinces, track was laid as follows:—Alberta, 128.81 miles; Saskatchewan, 48.14; Quebec, 36.00; Manitoba, 9.80; British Columbia, 9.41; New Brunswick, 8.50; Ontario, 1.50.

	Miles	Miles
Alberta and Great Waterways Ry.—		
Mileage 202.10 to 275.40 .....	73.30	
*Egg Lake Branch, mileage 1 to 11. ....	11.00	
		84.30
Canadian Northern Railway—		
James Bay and Eastern Ry.		
Roberval to St. Felicien .....	18.00	
Montreal Tunnel line .....	3.00	
Duncan to junction with C.P.R. at		
Donlands, Toronto .....	1.50	
Elrose, Eston, to Glidden, Sask. ....	16.28	
Oliver towards St. Paul de Metis,		
Alta .....	44.51	
Victoria, B.C., Harbor to Alpha St.		
Station .....	0.80	
Victoria Jet. to Glen Lake, B.C. ....	7.35	
		91.44
Canadian Pacific Railway—		
Vantage to Congress, Sask. ....	7.00	
Grand Trunk Pacific Railway—		
St. Louis to Prince Albert, Sask. ....	24.86	
Greater Winnipeg Water District Ry.—		
Deacon to St. Boniface, Man. ....	8.30	
From point on this line to Transcona ..	1.50	
		9.80
Quebec and Saguenay Railway—		
Cap Tourmente to Mileage 15 ....	15.00	
St. John and Quebec Railway—		
Gagetown to Queenstown, N.B. ....	8.50	
Vancouver, Victoria and Eastern Ry.—		
Extension to passenger station at		
False Creek, Vancouver .....	1.26	
Total .....		242.16

Canadian Society of Civil Engineers, Victoria Branch.—Following are the officers of the Victoria, B.C., branch, elected at the annual meeting, Dec. 12:—Chairman, R. W. Macintyre; Vice Chairman, R. Fowler; Secretary, E. G. Marriott; Treasurer, E. Davis; other executive members, W. K. Gwyer, E. P. McKie. The retiring chairman was D. O. Lewis, District Engineer in charge of construction and surveys. Canadian Northern Pacific.



# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—C. D. BOVARD, Assistant Superintendent, Districts 2 and 3, Intercolonial Division, is reported to have been appointed station agent at Moncton, N.B., during the illness of C. W. Price.

W. J. MATHISON, heretofore Assistant Superintendent at Halifax, N.S., has been appointed Assistant Superintendent, District 1, Intercolonial Division, in special charge of Montreal Terminals, with jurisdiction to and including Ste. Rosalie Jct.

J. H. DUFF has been appointed Assistant Superintendent, District 1, Transcontinental Division, vice H. A. Ryan, resigned. Office, Cochrane, Ont.

**Canadian Northern Ry.**—S. P. BROWN, B.Sc., M.Can.Soc.C.E., Chief Engineer, Mount Royal Tunnel Terminal Co., Montreal, has resigned and removed to New York, where he has been appointed Vice President and General Manager, Ford, Bacon & Davis Corporation, general contractors.

W. C. LANCASTER, Electrical Engineer, Mount Royal Tunnel and Terminal Co., has resigned to become a captain in the United States Engineers.

G. N. GOAD, heretofore Trainmaster, Toronto District, Ontario Division, Toronto, has been appointed Assistant Superintendent, Toronto District, Ontario Division, vice G. A. Hoag, whose appointment as Superintendent, Superior District, Ontario Division, Hornepayne, Ont., was announced in our last issue. The position of Trainmaster, Toronto District, has been abolished. Office, Rosedale, Toronto.

H. LAMBKIN has been appointed Inspector of Sleeping and Dining Cars and News Service, Western Lines. Office, Winnipeg.

W. A. VANALSTINE has been appointed City Ticket Agent, Saskatoon, Sask., vice G. Swain resigned.

J. D. CAMERON has been appointed Travelling Freight Agent, Vancouver, B.C.

C. J. PIPER has been appointed Commercial Agent, Minneapolis, Minn., vice J. T. Whitelaw, resigned to enter private business.

**Canadian Pacific Ry.**—A. AITKEN, heretofore general yardmaster, Toronto, has been appointed Assistant Superintendent, Toronto Terminal Division, Ontario District, vice W. Garland transferred. Office, Toronto.

R. C. MORGAN, Superintendent Winnipeg Terminal Division, Manitoba District, is acting General Superintendent, Manitoba District, while C. MURPHY is engaged in labor negotiations. Office, Winnipeg.

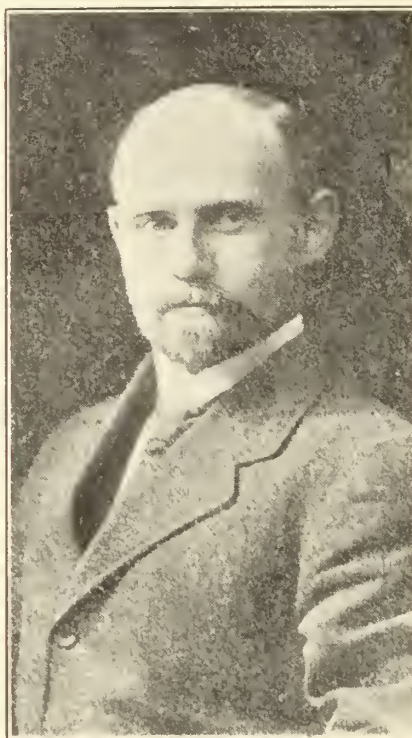
E. HUMPHRYS, heretofore District Storekeeper, Manitoba District, Winnipeg, has been appointed Fuel Agent there.

A. S. MACDONALD, heretofore District Storekeeper, British Columbia District, Vancouver, has been appointed District Storekeeper, Manitoba District, vice E. Humphrys, appointed Fuel Agent. Office, Winnipeg.

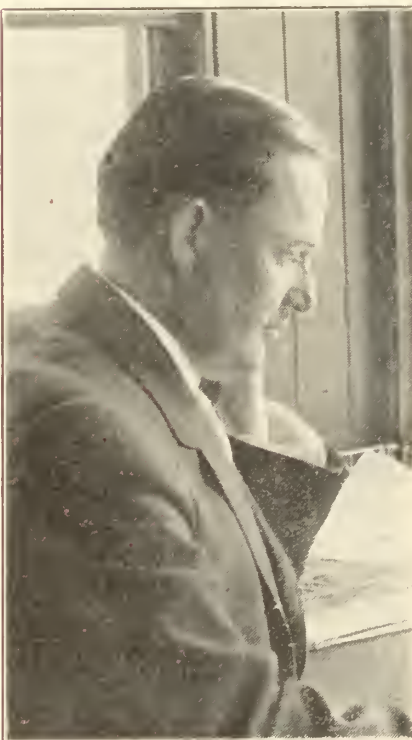
W. E. PIMLOTT, heretofore Storekeeper, Fort William, Ont., has been appointed General Foreman, Stores Department,

Winnipeg, vice F. G. Bannister, transferred.

F. G. BANNNISTER, heretofore Gen-



P.516. C. Price-Green  
Industrial Commissioner, Canadian Northern Railway.



P.517. H. McCall,  
General Superintendent, Lines West of Edmonton, Alta., Grand Trunk Pacific Railway.

eral Foreman, Stores Department, Winnipeg, has been appointed District Storekeeper, British Columbia District, Vancouver, vice A. S. Macdonald.

**Grand Trunk Pacific Ry.**—G. W. LOMAS has been appointed chief operator, Edmonton yard, Alta.

The following station agents have been appointed: Quinton, Sask., F. W. Finch; Attuand, Sask., J. A. Laverigne; Kelliher, Sask., D. J. Cullen; Balcarres, Sask., W. T. Ralston; Edson, Alta., H. V. Goodwin; Coalspur, Alta., W. R. Goodwin; Giscome, B.C., A. W. Bennett; Smithers, B.C., A. H. Forde; New Hazelton, B.C., G. D. Parent; Pacific, B.C., D. P. Herrin; Prince Rupert, B.C., A. L. Holtby. The station at Junkins, Alta., has been closed.

**Great Northern Ry.**—H. A. JACKSON, heretofore General Traffic Manager, Great Northern Steamship Co., San Francisco, Cal., has been appointed Export and Import Agent, G.N.R. Office, Seattle, Wash. This is a new position.

**Northern Pacific Ry.**—F. S. ELLIOTT, Soliciting Freight Agent, Vancouver, B.C., is reported to have been appointed Local Freight Agent there, with office at the union station.

**Reid Newfoundland Co.**—J. W. N. JOHNSTONE, General Passenger Agent, has also been appointed Assistant to the President. Office, St. John's, Nfld.

P. D. PARK has been appointed Assistant to the President, also Travelling Superintendent of train men (conductors, brakemen and baggagemen), reporting to the Superintendent; and also Travelling Superintendent of Motive Power Department, reporting to Superintendent of Motive Power. Headquarters, St. John's, Nfld.

E. W. TAYLOR, heretofore General Freight Agent, has been appointed Traffic Manager, and will also control time table schedules, movement of all motive power, rolling stock, steamships and all freight and passenger traffic. Office, St. John's, Nfld.

G. COBB, heretofore Superintendent, has been appointed Assistant to General Superintendent, St. John's, Nfld.

H. J. RUSSELL, heretofore Assistant to Superintendent, has been appointed Superintendent, vice G. Cobb promoted. Office, St. John's, Nfld.

W. FITZPATRICK has been appointed Assistant to the Superintendent, St. John's, Nfld.

T. J. ROLLS has been appointed Assistant to the General Freight Agent, St. John's, Nfld.

J. BAXTER, heretofore Travelling Passenger Agent, has been appointed Assistant to the General Passenger Agent, St. John's, Nfld.

T. P. CONNORS, heretofore Roadmaster, has been appointed Superintendent of Maintenance of Way of all lines east of Clarendville. Office, St. John's, Nfld.

A. COBB, heretofore Roadmaster, has been appointed Superintendent of Maintenance of Way of all lines west of Clarendville, and including the yard there. Office, St. John's, Nfld.

The Regina Municipal Ry. is experimenting with a rearrangement of lights in its cars. Under the new plan the lamps are being placed in a line down the centre of the roof with reflectors over them, which diffuse the light throughout the car instead of being ranged round the sides of the cars without reflectors. There will be five fewer bulbs in each car than under the old system. If the new plan is successful a considerable saving in power will be effected.



# The Work of the Canadian Railway Association for National Defence.

**Chairmen of Committees.**—The following are the chairmen of the association's various committees:—Special committee on war and national defence, Lord Shaughnessy, President, C.P.R.; Western administrative sub-committee, Grant Hall, Vice President and General Manager, Western Lines, C.P.R.; Maritime Provinces sub-committee, H. C. Grout, General Superintendent, New Brunswick District, C.P.R.; Committee on passenger transportation, western lines, H. H. Brewer, General Superintendent, Grand Trunk Pacific; Committee on tariffs and statistics, Guy Tombs, Assistant Freight Traffic Manager, Eastern Lines, Canadian Northern. The chairman of the Ontario sub-committee has not yet been announced.

## Administrative Committee's Proceedings.

At a meeting in Montreal Nov. 27 there were present U. E. Gillen, Chairman, Sir George Bury, D. B. Hanna, J. H. Walsh, S. R. Payne. The following matters were dealt with:—

Delay on the part of United States lines in returning empty box cars to Canada. The many telegraphic and mail communications addressed to the American Railway Association at Washington on the matter of increasing the movement of empty box cars to Canada to offset the excess Canadian owned cars in the U. S. not having brought forth the desired results, it was the sense of the meeting that a telegram be addressed to Fairfax Harrison, Chairman of the Executive Committee of the American Association, asking him to meet a delegation composed of three members of the administrative committee of Canadian Railway Association for National Defence in New York, December 5, so that the whole matter of car movements as between Canada and the United States might be gone into and an arrangement reached which would provide for the equalization of the interchange of cars between the two countries. The following telegram was forwarded to Mr. Harrison accordingly:—"Referring to telegram received from your Commission on Car Service data. Administrative Committee of Canadian Railway Association for National Defence in session this afternoon have been discussing very fully the whole car situation and having received assurances that United States railways as represented by American Railway Association will do best possible to increase movement empty box cars to Canada, fact remains that equipment not being received and situation has reached such a point that we feel it desirable to present our case in person. If you find you can make it entirely suitable to be in New York yourself, or your committee, the administrative committee of this association will go to New York to meet you on Dec. 5, with view to reaching some arrangement for alleviation present serious situation. Meantime Canadian lines continuing endeavors move maximum quantity newsprint, but sufficient cars not available to make much impression on great amount traffic offering."

In view of the serious shortage of cars for loading newsprint, pulp and other important commodities for U. S. points and which U. S. newspapers and other industries are urging Canadian shippers and railways to forward in the greatest possible volume in order to avoid suspension of publication of newspapers in U. S. cities, and having in mind the heavy

waste of cars involved in the existing large movement of hay from Canada to the U. S. in loose bales, railways operating in Canada are instructed that in order to serve both Canadian and U. S. industrial interests to the best advantage, they shall until further notice, so far as practicable, avoid supplying box cars for shipments of hay in loose bales destined to other than Canadian points.

It having been pointed out that some lines in Canada are still using Canadian owned freight cars for loading to points in the U. S., notwithstanding the fact that over 60,000 Canadian owned cars are being used in the car pool in the U. S., as against 40,000 U. S. owned cars in Canada which are being loaded back to the U. S. with little if any delay, and in order to permit of the desired movement of war supplies, food stuffs and similar necessities between Canadian points, railways operating in Canada are hereby instructed that until further notice they shall not use freight cars of Canadian ownership for loading to points outside of Canada or beyond the tracks of owning line.

Reports from member lines indicate that further progress can be made in conservation of car supply by reducing the number of freight cars held under and waiting repairs and a communication is being addressed to all railways in Canada urging them to put forth extraordinary efforts to keep the number of cars out of service for repairs down to not more than 3% of the total freight cars on lines.

In view of the increase in demand for cars on Canadian lines that will come about during the ensuing winter due to close of lake and river navigation and for other reasons, it is necessary, if the desired quantity of war supplies and food stuffs is to be moved, that every car transported be given a load equivalent to its full public or weight carrying capacity. The sub-administrative committee at Winnipeg has been instructed to call a meeting of lumber, flour and grain shippers in Western Canada with a view to arranging for capacity loading of cars shipped from the west to the east during the coming winter and shippers and Dominion Government authorities in the east have been communicated with with a view to making similar arrangements so far as may be possible in Eastern Canada.

Reports having reached the association that certain member lines have operated special passenger trains in other than what be termed "cases of extreme emergency" during the present month, it is instructed that such companies be communicated with and the importance of adhering to the policy outlined impressed upon them, so that the necessary conservation of fuel supply may be accomplished.

It is the desire of the administrative committee that the committee on passenger transportation, in considering reduction in passenger service, give special attention to the lengthening of passenger train schedules, so that passenger trains under no circumstances will run at a greater speed than 50 miles an hour; this with a view to further conserving fuel and reducing expenditure of money, man power and material in the maintenance of track and equipment.

It is ordered that in the next issue of time tables member lines incorporate a rule governing the speed of light locomotives and freight trains reading as follows:—"No light engine or freight train

shall run any one mile in less than two minutes."

The Fuel Controller for Canada having drawn the attention of certain Canadian railways to the possibility of their being asked to share their fuel supply with other lines of industry and for domestic use during the coming winter, it is the opinion of this committee that the Fuel Controller be advised that before any such course of action is taken all other means of providing fuel for industrial and domestic use should be exhausted. It is pointed out that, in certain places, coal is being used for the development of electricity where water power is available, and in many parts of the country if necessary, wood can be used for fuel instead of coal, and in view of the importance of the railways being permitted to maintain an uninterrupted transportation of car supplies and other materials, their fuel should not be used for other than their own purposes, except to prevent actual suffering.

This committee directs that the commission on car service give immediate consideration to the question of general adoption of "sailing day" system of handling less than carload freight.

## Conference at New York on Holding of Canadian Cars in the U. S.

U. E. Gillen, Chairman of the administrative committee, Sir George Bury, Vice Chairman, C.P.R., and W. M. Neal, General Secretary of the Association, had a conference in New York, Dec. 5, with members of the American Railway Association in an endeavor to have the U. S. railways send to Canada the Canadian cars that are now in the U. S., or an equivalent number of cars owned by U.S. railways. They pointed out that there are 20,000 more Canadian owned cars in the U. S. than there are U. S. owned cars in Canada, and that, although promises have been made that Canadian or U. S. cars would be sent from time to time, yet in two months, notwithstanding several thousand U. S. owned cars have been sent to Canada, the Canadian roads had gained less than 900 cars. They also showed that shippers all over Canada, desirous of shipping newsprint, pulpwood, hay, lumber and other products, were in a bad way because the Canadian railways were only able to use U. S. owned cars for these shipments going to the U. S., otherwise Canada would be so drained of cars that they would be unable to move munitions and food supplies for the allies. As a result of the representations made, promise was secured that the U. S. railways would double their exertions to forward cars to Canada so that people in Canada desiring to ship to the U. S. might be ensured a reasonable car supply.

Immediately after the New York conference the General Secretary of the Canadian association wrote A. H. Smith, President of the New York Central and a member of the Canadian association's special committee on war and national defence, as follows:—"Since Oct. 1 there have not been less than 19,000 Canadian railway owned box cars on U. S. lines in excess of U.S. railway owned box cars on Canadian lines. Since the same date the Canadian railways have asked the American Railway Association's commission on car service to send them the number of cars due from U. S. lines. To date the number of cars received in Canada in excess of the number delivered to the U. S. is less than 900, notwithstanding the fact



that statements have frequently been made that 4,000 box cars have been forwarded to Canadian lines.

"To deal specifically with the four principal railway lines in Canada, that is, the C.G.R., the C.N.R., the C.P.R. and the G.T.R. From the attached statement you will observe that the C.G.R. has 3,760 cars on U. S. lines compared with the 2,309 U. S. railway owned box cars on the C.G.R. The C.N.R. has 3,485 box cars on U. S. lines compared with 2,348 U. S. box cars on C.N.R. The C.P.R. has 12,870 box cars on U. S. lines compared with 5,780 U. S. cars on C.P.R., and the G.T.R. has 21,939 of its box cars on U. S. lines compared with 14,692 U. S. owned box cars on its line. The above relates to box cars only. To consider all classes of freight cars, it is as follows:

	Canadian owned cars on U.S. lines.	U.S. owned cars on Canadian lines.
"C.G.R. ....	4,000	3,483
"C.N.R. ....	4,396	3,486
"C.P.R. ....	17,892	7,945
"G.T.R. ....	29,152	22,931

"Canadian railways are required to move many millions of bushels of grain each month for overseas, also to take care of home requirements, as well as handling volumes of hay, pulpwood, paper for newspapers, and lumber, etc., for U. S. points, a considerable proportion of which, particularly the lumber, is required

5,000 empties since Oct. 1, and have delivered about one-half that amount. Canadian shippers are pressing for cars to load newspaper for U. S. dailies, hay and lumber, much of which is for the U. S. Government, pulpwood, etc. Canadian railways can supply only about 10% of cars needed, and unless relieved they advise they will be forced to embargo certain of such shipments to protect cars for munitions and food. As the two countries are working as allies they feel that your commission should equalize more fairly the car supply. Canadian railways having hard time keeping shippers mollified, and their efforts are made more difficult by information conveyed from Washington to Canadian shippers that cars have been sent to Canada, when as a matter of fact since Oct. 1 on the total exchange of cars, Canada has gained 875 cars, and the situation of the Canadian railways on Oct. 1 was well nigh desperate. It was desired, if possible, to keep the matter from the authorities entering into the question, and the committee are here and would be glad to receive information as soon as possible as to any definite directions that may be given, and what they are to be, as they want to return to Canada tonight. I suggest that some solid trains of box cars be made up, if possible, and moved to some Canadian junction points for the relief of the situation."

with U. S. open-top cars carrying coal into Canada, which have been for many years the subject of claims by U. S. railways. We trust that you will be able to demonstrate to the Canadian roads on this report of the commission on car service that they are having fair treatment, and that we are doing all that is possible in their behalf. By the location statement, published by the commission or car service, it will be seen that the Canadian roads are no worse off than those in groups 4 and 5."

The letter of Chairman Sheaffer of the U. S. commission on car service, referred to in Fairfax Harrison's letter, is as follows:—"During October we directed to Canadian lines 1,500 box cars, on which orders 1564 were delivered. These orders covered in full all requests from Canadian lines to the commission on car service, which in our judgment were justified. There were requests for equipment from the Canadian Northern and Canadian Government roads which we declined, as reports from those lines showed excess box cars on line over ownership. Early in November requests were made through the Canadian Railway Association for additional box cars, some of which were for cars to excess lines as mentioned above, and we responded by directing the movement of 4,700 cars, of which 1,284 have been delivered. These

Summary of Freight Car Location Nov. 23, 1917

ROAD	Number cars		Home cars on Can.-foreign lines		Home cars on foreign lines		Home cars on home lines		Can. owned foreign cars on home line		Owned foreign cars on home line		Total cars on lines		Percentage cars on line to number owned	
	Box	Total	Box	Total	Box	Total	Box	Total	Box	Total	Box	Total	Box	Total	Box	Total
	Ow'd		Ow'd		Ow'd		Ow'd		Ow'd		Ow'd		Ow'd		Ow'd	
A. C. H. B. ....	59	1067	5	195	23	179	31	693	199	378	99	316	329	1387	557.0	130.0
A. E. R. ....	25	500	—	—	9	16	16	484	41	72	80	177	137	733	548.0	146.6
C. G. R. ....	10530	15754	2425	2948	3760	4000	13427	19342	4653	5450	2309	3483	11307	17739	107.4	112.6
C. N. R. ....	18510	26188	1598	2450	3485	4396	13427	19342	3346	3824	2348	3486	19121	26652	103.3	101.8
C. P. R. ....	65426	87023	7888	9791	12870	17892	44668	59340	2353	3094	5780	7945	52801	70379	80.7	80.8
D. A. R. ....	270	490	18	26	8	8	244	462	190	238	60	64	494	764	183.0	154.0
Essex Term. ....	—	—	—	—	—	—	—	—	15	23	19	40	34	63	—	—
G. T. R. ....	38113	57133	4456	5372	21939	29152	11718	22609	5309	6212	14692	22931	31719	51752	83.2	90.6
Q. M. & S. ....	1375	1509	63	78	1285	1355	27	76	76	90	123	194	226	360	16.4	23.8
Q. C. R. ....	302	1064	53	278	217	433	32	353	261	367	99	380	390	1100	129.8	103.4
Q. R. L. & P. ....	32	152	2	11	2	2	28	139	17	25	4	4	49	168	153.1	110.5
T. H. & B. ....	1031	1383	51	100	975	1071	5	212	94	141	155	311	254	664	24.6	48.0
Temiscouata ....	83	132	13	15	38	41	32	76	47	64	37	42	116	182	139.8	137.9
T. & N. O. ....	144	641	5	46	86	177	53	418	234	347	115	162	402	927	279.2	144.6
Total	135900	193042	16577	21310	14697	58722	74626	113010	16835	20325	25920	39535	117381	172870	86.4	89.5

ed by the U. S. Government, and we must have in Canada the box cars owned by the Canadian lines or an equivalent number to enable us to handle the business offered. We would prefer to have our own cars, but if this cannot be arranged then we must insist on an equivalent number of box cars owned by U. S. lines being sent to Canada to take care of our requirements and offset the number of Canadian owned box cars now on U. S. rails.

"In addition to ordering cars from the commission on car service at Washington, we have repeatedly addressed Fairfax Harrison on the subject, and his latest communication to us indicates that the matter has been referred to you as a member of our executive committee, and for this reason we address you as above, and submit the attached statements with an earnest hope that you will at once take the matter in hand with a view to giving us the assistance asked, and which we so badly need."

A. H. Smith then had the following message telephoned to Fairfax Harrison, Chairman U. S. Railroads War Board, at Washington:—"Canadian railway administrative committee called upon me today in view of your message to them. U. S. lines have 20,000 more Canadian owned cars than there are U. S. owned cars on Canadian lines. Your car service commission promised Canadian railways

Fairfax Harrison wrote A. H. Smith in reply the same day as follows:—"Enclosed is a statement by the car service commission of what they have done for Canadian lines in the way of the return of empty cars. It seems to us that Canada has been treated fairly, and indeed, quite as fairly as some sections of the U. S. which present the same problem. I am sure that these gentlemen all realize that their railways are members of the American Railway Association and that the commission on car service has felt the responsibility of being as fair to them as it is to any other members of the American association. You know, of course, that there has been no deliberate withholding of cars for a selfish purpose. Our work during the past six months has demonstrated that certain producing sections of the continent are drained of cars into the eastern territory, where by reason of congestion they have been delayed in return, so that it has required the arbitrary orders of the commission on car service to promote the return flow of empties. The situation with respect to the Canadian roads on box cars has been aggravated recently by the large volume of traffic of newsprint paper, hay, etc., into the U. S., which has created a large balance of Canadian box cars on the south side of the International Boundary, but the Canadian roads will recognize the reason for this by their own experience

figures include 1,300 box cars directed to the D. & H. with the understanding that that line would load with anthracite coal to Canadian points, averaging about 65 cars a day; this equipment being in excess of then existing movement and large per cent. of which was in open top equipment. I regret that we have not definite information from the D. & H. as to number of cars delivered. These figures also include 800 cars directed to the Grand Trunk, with instructions to load with salt and other commodities destined to and through Chicago gateway for western lines, of which 165 have been delivered. Thus far in December 1,000 box cars have been directed to Canadian lines; no report yet received showing deliveries. To indicate promptness of delivery, would state that of 200 cars directed Nov. 9, 194 have been delivered; another order Nov. 9, for 300 cars, 188 have been delivered; and third order, Nov. 9, for 300 cars, only 10 have been delivered. This last delay was occasioned by contention on the part of the originating line which has since been settled. 500 cars ordered Nov. 1, completed; 100 cars ordered Nov. 10, completed; 200 cars ordered Nov. 13, 117 delivered; 1,000 cars ordered Nov. 28, no deliveries as yet reported; 1,000 cars ordered Dec. 3, no deliveries yet reported.

"From our viewpoint reasonable requests Canadian lines were filled complete prior to Nov. 1, since which time we have



directed to Canadian lines a total of 5,700 cars, out of a total ordered by this commission to U. S. lines and Canadian lines of 32,250; so that since we had indication of the heavy demand from Canadian lines equal to the demands from U. S. lines we have directed to them 17.6% of total ordered to all lines, which appears to us a fair proportion, in view of Canadian lines ownership of box cars approximating 11% of the total of 1,157,906 box cars owned by lines reporting to this commission. The reports as of Nov. 15 show Canadian lines reporting to this commission as having 85.69% box cars on line, compared with 84.85% on line Nov. 15, 1916, or about 980 cars excess. Of all cars owned by Canadian lines reporting to this commission they had 88.73% on line Nov. 15 compared with 94.07% same date in 1916."

#### Conference in Washington on Car Situation.

A meeting was held at the American Railway Association's office in Washington, Dec. 7, at which the Canadian railways were represented by Messrs. Hatton, Duval, Lock, Crawford and Neal, the U. S. lines being represented by Messrs. Sheaffer, Barnes, McCauley and Monahan, the substance of the discussion and the conclusions reached being as follows:

The American Railway Association will hereafter consider the railways operating in Canada as a whole, instead of attempting to deal with the car situation on each line individually as heretofore. They will accept orders as placed on them by the Canadian association for empty box cars to be moved to Canadian lines, the understanding being that such orders will be kept as low as possible, in view of the existing difficulty in moving cars on railways in the Eastern States, which is the only source of empty box car supply at present. The Canadian railways through the medium of the Canadian associations will distribute amongst themselves the empty cars received.

The chairman of the U. S. commission on car service stated that in operating the box car pool in the U. S. no distinction will be made between the Canadian owned and U. S. owned cars and that the former will be held in the pool, which covers cars belonging to all roads holding membership in the American association. Canadian railways, pending receipt of sufficient empty cars to enable them to fully take care of Canadian traffic and establishment of current return movement of empty box cars from the U. S., will continue present policy of restricting the use of Canadian owned cars to points in Canada. At the same time they will give preference to the supply of U. S. owned box cars for shipments offering for movement into the U. S.

Reference was made to the numerous requests received from the U. S. Government and others for an increased movement of hay from Canada to the U. S., and it was remarked by members of the U. S. commission on car service that according to their information the demand for hay at U. S. points had fallen off recently and at several large cities large quantities of hay were held in cars waiting disposition. They stated further that in so far as they could see, the only object in increasing the movement of hay to the U. S. at present would be to enable the producer to obtain a market for his product.

It was pointed out to the U. S. commission on car service that although they claim to have ordered and forwarded a considerable number of empty box cars

to Canadian lines the general effect of the arrangements they have made has been to decrease the movement of empties to Canada via natural routes, as cars which would have been returned to Canada by U. S. lines voluntarily have been diverted to territories in the U. S., this being one reason for the shortage of cars in Canada and emphasizing the need of additional deliveries of empty cars in accordance with orders placed by the Canadian association.

The question of reports from Canadian railways to the U. S. commission on car service was discussed and it was suggested that the U. S. commission accept from Canadian lines copies of reports which the latter forwarded to the Canadian association. Decision on this point was reserved pending consideration by the American Railway Association.

It was agreed to by the U. S. commission on car service that in addition to accelerating movement of empty box cars to Canada, they will see that advantage is taken of every opportunity to load box cars to Canadian lines, particularly with anthracite coal, certain of the U. S. railways having facilities for loading a larger number of box cars with coal than they are receiving at present.

#### Underloading of Cars to be Prevented.

The Association has been advised that the movement of foodstuffs, particularly potatoes, apples and flour, is being interfered with on account of shortage of cars, and the Food Controller has been advised that the shortage of equipment in Canada is due almost entirely to the existing serious waste of cars resulting from light loading. It has been pointed out to the Food Controller that refrigerator cars having a capacity of 66,000 lb. are billed out with contents weighing anywhere from 7,000 to 30,000 lb. and that many box cars loaded with flour, having a capacity of 94,000 lb., are loaded with 45,000 lb. The Food Controller has been asked to bring his influence to bear upon shippers of foodstuffs who waste cars and in order that he may be assisted in doing so, it is requested that members of the association furnish the names of all shippers of foodstuffs on their respective lines who do not load cars to capacity, and the average weight of their shipments, with the average capacity of the cars loaded.

The Food Controller replied as follows: "In order to alleviate the car shortage, I would be strongly in favor of urging upon the shippers and railways that instructions be issued to all agents that such foodstuff commodities as grain, salt, sugar, apples, potatoes, etc., be not accepted unless loaded to the full cubic or weight carrying capacity of the car. This, I feel sure, would tend to conserve the cars and move the maximum quantity of foodstuff, and thus help to alleviate the car shortage situation in Canada. I trust your association will be able to adopt this recommendation as quickly as possible."

It is urged that all railways operating in Canada renew their efforts to prevail upon shippers of foodstuffs to avoid waste of car space and thereby assist in alleviating the present serious situation.

#### Increasing the Loading of Cars.

Following is a table embodying standards for loading certain commodities now in effect on a member line, and which it is considered should be adopted by all railways operating in Canada:—

FLOUR.	
315 barrels of 214 lb. each .....	67,410 lb.
340 sacks of 196 lb. each .....	66,640 lb.
460 sacks of 140 lb. each .....	64,400 lb.

900 bags of 98 lb. each .....

88,200 lb.

Whenever possible the three first series should be shipped in 30 ton box cars in preference.

#### SUGAR.

228 barrels of 320 lb. each .....

72,960 lb.

930 bags of 100 lb. each .....

93,900 lb.

#### NAILS.

878 barrels, averages 107 lb. each .....

93,950 lb.

#### MUNITIONS.

4.5 in.—2 to a box—5 series .....

92,500 lb.

4.5 in.—3 to a box—5 series .....

90,000 lb.

4.5 in. brass cases—50 to box—39 series ..

93,600 lb.

6 in. mark 3—2 to a box—3½ series ..

92,210 lb.

6 in. mark 16—2 to a box—3½ series ..

92,210 lb.

8 in., 1 to a box—1½ series .....

80,620 lb.

9.2 in.—1 to a box—1 series .....

76,250 lb.

18 pounder—brass cases—25 to a box—

19½ series .....

93,600 lb.

Shrapnel—6 to a box—9 series ..

93,700 lb.

Supplementary circulars will be issued giving data as compiled showing the weights by which shippers should be asked to govern themselves in shipping carload freight.

#### Shippers' Co-operation in Increased Loading.

A very interesting report has been received from one of the association's sub-committees outlining activities in the territory which it represents with a view to increasing car loading. It would appear that the same methods could be followed in other territories with good results. Following are extracts from the report:—

"Fifty-two shippers have been interviewed on the subject of capacity loading of cars with a view to relieving the car shortage. An examination of way bills covering carload shipments shows that there has been considerable improvement recently. All of the shippers expressed themselves as being in sympathy with ment r.p.o. cars; the haulage of r.p.o. cars the movement and promised their hearty co-operation."

"A manager of a lumber company stated shipments from his mill are mostly mixed orders and in some cases have been light loaded. This firm is endeavoring to have consignees place orders for full carloads."

"A pulpwood shipper states he has always loaded his shipments to full capacity of cars and will continue to do so."

"A manager of a lumber company advised they were loading all cars to full capacity and would continue to do so in future. A car was examined while being loaded at the mill and it was found that the men were not making a good stowage of the load. The manager had them unload a portion of the car and reload in such a manner as would allow a greater quantity being put in cars."

"A potato shipper advises that since cold weather he has been loading cars to 45,000 lb. or over. Has promised to write shippers who supply him with fertilizer to ship to full capacity."

"A potato shipper upon being interviewed stated that his firm was loading all cars with 750 bush. per car, and had shipped several cars containing as many as 775 bush., but occasionally they received an order for Virginia for 650 bush. of seed potatoes, but in future would endeavor to get consignees to order at least 750 bush."

"A member of another firm of potato shippers stated he was loading all cars with from 45,000 to 48,000 lb., although there may have been an occasional car loaded lighter, same being seed stock for Virginia. Shipping bills were checked up and statements found to be correct."

"A manager of a canning company is very much interested in loading cars to maximum capacity and stated that his firm was loading on an average of 1,200 cases of sardines to a carload. A case of



sardines weighs 43 lb. This firm has also increased carload shipments of salt from 250 to 300 and 320 sacks. Salt weighs 200 lb. a sack. The manager is in favor of raising the minimum from 36,000 to 50,000 lb. on sardines and is willing to do all he can to help the car shortage. This firm controls 11 or 12 factories."

"A firm of cannerys has increased its load per car and has written its brokers that, owing to car shortage, it would be advisable for them to order 1,200 cases instead of light loads. It is also in favor of raising the minimum and gave assurance that it would do all in its power to help the situation.

"A firm of soap manufacturers now ships 700 cases of soap per car in its carload shipments. Cases weigh 75 lb. each. Formerly 500 cases constituted a carload. Present loading gives an increase of nearly 15,000 lb. a car."

"A manager of a fertilizer company states he is in perfect sympathy with the loading of cars to full capacity and will endeavor to have inward and outward shipments loaded to full capacity of cars."

#### Cars for Paper, Pulp, Etc.

In view of the existing car shortage and the large volume of newsprint, pulp, pulpwood, etc., waiting movement, a conference of representatives of paper and pulp mills and members of the association's commission on car service, was held in Montreal Dec. 10 to decide upon arrangements for the supplying of cars for the commodities mentioned. After full discussion the representatives of the paper and pulp companies expressed the opinion that in the supplying of cars for the movement of their shipments, the railways, in so far as may be practicable, should supply cars in the following precedence: 1, Newsprint; 2, pulp, sulphite, sulphate and mechanical; 3, other papers and boards; 4, pulpwood. The railways are requested to endeavor to comply with the wishes of the shippers as above. It is understood that in ordering cars hereafter the shipper will specify the commodity for which cars are required.

#### Instructions for Return of U. S. Cars.

Arrangements have been made whereby certain U. S. railway owned open top cars, other than self-clearing cars, which Canadian lines have held instructions to send home empty as soon as released of initial lading may now be used for return loading. In arranging loading, however, care should be taken to see that the cars are loaded only as follows: via a point on the home route, or to a point on the owning road, or to a point in the immediate direction of the owning road. It should be understood that, notwithstanding the foregoing, in the evening of a railway requesting empty returns of its open top cars, regardless of type, such cars must be sent home promptly as requested. All open top, self-clearing cars suitable for the handling of coal and coke, except as may be hereafter directed, are to be promptly sent hom empty. Open top, self-clearing cars suitable for the handling of coal and coke are those designated in M.C.B. regulations as follows: Class G—sub classes, GA, GC, GD, GE, GS. Class H.

#### Reduction of Passenger Train Service.

The committee on passenger transportation, eastern lines, at its meeting on Nov. 13, and reported in Canadian Railway and Marine World for December, took preliminary action towards effecting a reduction of passenger train service. Representatives of the association had a

conference with the Board of Railway Commissioners in Ottawa early in December, at which it was decided to make further reductions in the passenger services in order to enable the railway companies to meet serious shortages in coal supplies, which coincides with a pressing need for an increase of transportation facilities for the movement of freight and munitions. The representatives left the Ottawa conference with tentative plans for the reduction of passenger services, and this was followed by a meeting of C.P.R. and G.T.R. operating and traffic officials at Montreal to work on a readjustment and reduction schedule. Similar action was taken by Canadian passenger officials at its headquarters in Toronto. The changes in all passenger schedules will become effective Jan. 6, and although the reductions will not be quite as drastic as the changes ordered by the Board of Railway Commissioners in 1916, when 17 trains running out of Toronto were cancelled, many local services on branch lines will be suspended and about 10 of the trains now running out of Toronto will be cancelled. A heavy cut in parlor car services is being considered, and it is likely that with the exception of such cars as are doing double duty as dining and parlor cars, this travel luxury will be suspended.

The Canadian Railway Association for National Defence has issued the following explanatory notice and has requested all railways reducing service to print it in their time tables:—"From the very first Canada has been a most active participant in the world war. Since Aug., 1914, Canadian railways have been carrying troops, munitions and supplies for the allied armies and peoples. From time to time adjustments and curtailments in passenger service have been made by Canadian railways, in order that the most necessary traffic should have preference. The railways have succeeded not only in handling the special war traffic but also the normal domestic traffic as well. Today, the volume of overseas and domestic traffic due to the war stands at record height. Owing to the scarcity of materials and of labor, new equipment cannot be provided as rapidly as the traffic grows. To this condition is now added the usual strain of winter weather, snow and low temperatures, reducing the power of the locomotives, and besides there is an unusually large demand for coal for industrial and domestic purposes.

"These conditions can all be overcome, provided the railways of Canada have the co-operation of the people, which will enable them to confine their energies to the carrying of only the most necessary traffic. Some savings in passenger train mileage have already been effected. New reductions are necessary during the winter. If this causes inconvenience to the travelling public, and loss in passenger receipts to the railways, it need only be remembered that every passenger train mile takes at least 100 lb. of coal. It is difficult to secure coal and that received is not as efficient as formerly. The Canadian railways trust that the public will appreciate that reductions in service have been made at considerable sacrifice in revenue, and are arranged to bear as lightly as possible on all communities. One consideration only has led them to make these reductions, i.e., the pressing need of the nation and the empire. The railways feel confident, therefore, that travellers will accept whatever inconvenience is involved in the same spirit of patriotic self sacrifice as have the people in the British Isles."

#### Death of John Taylor.

John Taylor, founder of Taylor & Arnold, Limited, railway, marine and aeroplane supplies, Montreal, died at the residence of his son-in-law, Thos. Arnold, Westmount, Montreal, Dec. 19, after a long illness. He had been failing in health for the last two years and had not left his room since May. He was born at Ayr, Scotland, Mar. 18, 1833, came to Canada in 1837, and had lived in Montreal ever since. After passing through the Montreal High School he commenced his business career in 1851 with Ferrier & Co., wholesale hardware merchants. After a few years he went to Morland, Watson & Co., another hardware firm, and became a partner. This firm organized the rolling mills which eventually became the Montreal Rolling Mills, and are now owned by the Steel Company of Canada. Upon the dissolution of Morland, Watson & Co., he went into business with his brother Homer in railway supplies, etc., but after a few years the partnership was dissolved and he continued in the railway supply business on his own account, Homer taking agencies in the same line. The latter was killed on Oct. 20, 1906, by falling from a C.P.R. train. Then John Taylor took his son-in-law, Thos. Arnold, into business with him, and the two businesses were merged into Taylor & Arnold, Limited. He is survived by one son, J. M. Taylor, of Regina, Sask., and Mrs. Thos. Arnold, of Montreal. He was one of the organizers and an honorary member of the Royal Montreal Golf Club in 1876, and was its first captain and gold medalist and one of the best known golfers in Canada. He was a past master of St. Paul's Masonic Lodge. Thirty-two years ago he became an elder of St. Paul's Presbyterian Church, and ranked as senior elder of the congregation. He served for many years with the heavy artillery in Montreal and had been a governor of the Montreal General Hospital for many years.

**Transportation Club of Toronto.**—At the annual meeting on Dec. 15 the following officers were elected for the current year:—President, W. J. Langton. Superintendent, Dominion Transport Co.; Vice President, W. Fulton, Assistant District Passenger Agent, Rail Lines, C.P.R.; Secretary, W. A. Gray, Contracting Agent, Delaware, Lackawanna & Western Rd.; Treasurer, M. McDougald, Assistant Weighing Inspector, G.T.R. Chairmen of committees were elected as follows:—Membership, J. J. Rose, General Agent, Union Pacific Rd.; entertainment, F. V. Higginbottom, City Passenger Agent, Canadian Northern Ry.; publicity, E. T. Boland, General Agent, Robert Reford Co.; reception, T. Marshall, Manager, Transportation Department, Toronto Board of Trade; sick, W. McIlroy, Chief Clerk, District Passenger Agent, C.P.R. W. A. Gray, Secretary, and M. McDougald, Treasurer, who have held those positions since the club's inauguration, were presented with diamond and pearl tie pins.

Michigan Central Rd. boiler makers, blacksmiths and machinists in Canada, who, it was announced, were to go on strike Dec. 13, decided to ask for a board of conciliation under the Industrial Disputes Investigation Act, to deal with their grievances. New conditions and a new wage schedule are asked for by a federation of the three organizations concerned.



## Traffic Orders by the Board of Railway Commissioners.

### Michigan Central Standard Freight Tariff.

26769. Nov. 24. Re application of Michigan Central Rd. under sec. 327 of the Railway Act, for approval of its Standard Freight Mileage Tariff, C.R.C. 2725, cancelling C.R.C. 848. Upon its appearing that the proposed tariff makes no change in the rates previously approved by the Board; and upon the report and recommendation of the Chief Traffic Officer it is ordered that the said tariff be approved.

### Elgin and Havelock Ry. Freight Tariff.

26771. Nov. 26, 1917.—Granting application of Elgin and Havelock Ry., under sec. 327 of the Railway Act, for approval of its Standard Maximum Mileage Freight Tariff, C.R.C., 3, cancelling C.R.C. 1.

### Hay and Straw Rates.

26791. Dec. 3, 1917.—Re complaint of Montreal Board of Trade against proposed cancellation by Canadian Pacific and the Grand Trunk Railways of joint commodity rates on hay and straw, carloads from stations in Ontario and Quebec to points in the Eastern United States; and order 26035, April 17, 1917. Upon its appearing from letters from the parties filed with the board that the Canadian Pacific and Grand Trunk Railways and the Montreal Board of Trade have agreed on a revised basis of rates on hay and straw, in carloads, from eastern Ontario and Quebec to points in the eastern United States, and Tariff C.R.C. no. E.3367 having been published and filed by the C. N. R. and Tariff C.R.C. no. E.3699 by the G. T. R., to come into force on Jan. 1, 1918, purporting to give effect to the said agreement. It is ordered that order 26035 be rescinded.

### Interchange Track Between Canadian Northern and C.P.R.

26817. Dec. 11, 1917.—Re order 22275, July 24, 1914, directing the Canadian Northern Ry. to construct, maintain, and operate a branch line, or spur, in Sec. 4, Tp. 39, Range 19, west 4th Meridian, in Alberta; the company to exercise the right, as it sees fit to use such part of the C. P. R. property as is necessary to make physical connection; and the right of way to be arranged between the parties. It is ordered that the plan showing the interchange track proposed to be constructed at the point in question, dated Nov. 28, 1917, be approved; and that the Canadian Northern Ry. be required to complete the interchange track by Jan. 21, 1918; the main line switches to be wire-locked with the distant signals of the interlocking plant, and derails to be installed at each end of the interchange track.

### Minimum Car Load Rates for Lumber.

General order 211. Dec. 10, 1917.—Re complaint of Canadian Lumbermen's Association and others against increased carload minimum weights for lumber, both domestic and export, published to take effect on varying dates since April 22, 1917: It is ordered that the carload minimum weights for lumber, for domestic consumption or for export, be as follows: For closed cars under 35 ft. long, inside measurement 35,000 lb.; except that when cars loaded to full capacity will not contain 35,000 lb., the minimum will be the actual weight, but not less than 30,000 lb.; for closed cars, 35 ft. and not over 36½ ft. long, inside measure-

ment 40,000 lb.; except that when cars loaded to full capacity will not contain 40,000 lb., the minimum will be the actual weight, but not less than 35,000 lb. The term "full capacity" to permit a space of 12 in. between the top of the load and the carlines or rafters of the car. The schedules to give effect to this order to come into force not later than Jan. 1, 1918.

## Railway Finance, Meetings, Etc.

**Canadian Northern Ry.**—There has been deposited with the Secretary of State at Ottawa, duplicate originals of three mortgages dated Nov. 23, made to the Dominion Government by the Mount Royal Tunnel and Terminal Co., the Canadian Northern Western Ry. and the Duluth, Winnipeg and Pacific Ry. respectively, to secure advances made to these companies from loans authorized by the Dominion Parliament.

There has also been deposited with the Secretary of State duplicate originals of trust mortgage dated Nov. 16, between the company and the Dominion Government securing loans repayable on demand.

An issue of \$1,750,000 five per cent. notes which fell due on Dec. 1 in New York City, is reported to have been paid off in cash. They were secured by \$2,501,466 Mount Royal Tunnel and Terminal Co 1st mortgage rent charge 5% bonds due 1970.

**Canadian Northern Ry.**—An issue of \$1,750,000 5% notes due Dec. 1, 1917, secured by Mount Royal Tunnel and Terminal Co.'s first mortgage rent charge 5% bonds, due 1970, was paid off in cash on that date.

**Central Vermont Ry.**—At a recent meeting of the board it was announced that the fiscal year has been changed to end Dec. 31 instead of June 30 as hitherto. The next report will cover the accounts and operation for 18 months ended

**Grand Trunk Ry.**—An issue of £1,000,000 of three year 6% notes is reported to have been oversubscribed on the London, Eng., market at 98½. It was made to retire notes falling due during the current month.

The Grand Trunk Ry. offered for subscription in London, Eng., from Dec. 8 to 13 at 98½ £1,000,000 three-year 6% secured notes dated Jan. 15, 1918, repayable at par Jan. 14, 1921, to redeem a similar amount of 5½% secured notes falling due Jan. 14, 1918. They will be secured by the deposit with the trustees of £1,700,000 G.T.R. perpetual 4% consolidated debenture stock.

**White Pass and Yukon Route.**—Gross earnings from Jan. 1 to Oct. 14, \$1,791,585, against \$1,779,406 for same period 1916.

**The False Creek Flats Injunction Suits.** The Vancouver City Council has decided to make application to appeal against the Supreme Court of Canada's decision in the False Creek Flats matter, in which Champion and White have been successful. This firm obtained an injunction against the city continuing the construction of the sea wall west of Main St. bridge, which injunction has been confirmed by the Supreme Court. The stoppage of the work on the sea wall will give a decided set back to the reclamation and development of the False Creek flats, in which the Canadian Northern Pacific Ry. and the Great Northern Ry. are largely interested.

## Freight and Passenger Traffic Notes.

The Canadian Northern Ry. opened its extension from Roberval to St. Felicien, Que., 17.8 miles, for freight and passenger traffic, on Dec. 3.

The Dominion Government will, it is reported, operate a train service from Pas to Kettle Rapids, Man., on the Hudson Bay Ry., until the end of February for the accommodation of fishermen, miners and others. What will be done after that date has not been announced.

The Canadian Northern Ry., which was ordered, in Sept. 1916, to maintain its existing schedule with trains 9 and 10 between Deseronto and Toronto, pending enquiry, has now been ordered by the Board of Railway Commissioners to continue the schedule.

The City of Hamilton's application to the Board of Railway Commissioners for an order directing the G.T.R. to restore passenger train service on the Northern and Northwestern Branch, between Hamilton, Burlington Beach and Burlington has been refused.

The steamship service between Prince Edward Island and New Brunswick and Nova Scotia was discontinued Dec. 11, and beginning Dec. 12 all traffic was routed by the ca r ferry steamship between Cape Torincutur, N.B., and Port Borden, P.E.I.

By the British Government's order all passenger traffic from Australia to European ports has been discontinued in order to permit all vessel space to be used for war purposes. This will direct travel to the Pacific coast, and will benefit Vancouver and the Canadian transcontinental railways.

The Northern Pacific Ry. announces that it will start operating a direct freight and passenger service into the Great Northern Ry. terminals at False Creek, Vancouver, on Jan. 1. The service will be operated via Sumas, B.C., and will consist of one passenger train each way daily, with such freight trains as are necessary. Heretofore the N. P. R. has handed over its Vancouver traffic to the C.P.R.

### Transportation Men in Parliament.

Among the successful candidates at the general election on Dec. 17, the following particularly connected with transportation interests were elected in the constituencies named:—Hon. J. R. Reid, Minister of Railways and Canals, Grenville, Ont.; Hon. C. C. Ballantyne, Minister of Marine and Fisheries, St. Lawrence, Montreal, Que.; Hon. F. B. Carvell, Minister of Public Works, Victoria-Carleton, N.B.; Hon. F. Cochrane, ex Minister of Railways and Canals, Timiskaming, Ont.; Lt. Col. B. R. Hepburn, formerly President, Ontario & Quebec Navigation Co., Prince Edward, Ont.; Brig. Gen. H. H. McLean, ex President, St. John Ry., Royal, N.B.; F. N. McCrae, formerly President, Lotbiniere & Megantic Ry., Sherbrooke, Que.

### Plots Against Canadian Railways.

One of the charges against Albert Kaltschmidt, who, with several others, was convicted at Detroit, Mich., Dec. 22, of conspiracy and sentenced to four years imprisonment and a fine of \$20,000, was that he was engaged in a plot to destroy the G.T.R.-Sarnia Port Huron tunnel. Evidence was also introduced to show that it was intended to destroy the C.P.R. main line bridge at Nipigon, Ont. Franz Haehling testified that he had agreed to blow up the St. Clair tunnel.



# Electric Railway Department

## Report of the Commissioner on the investigation into the British Columbia Electric Railway Situation.

The British Columbia Government in July, 1917, appointed Dr. Adam Shortt, formerly Civil Service Commissioner at Ottawa, as commissioner under the Public Inquiries Act, to make a full investigation of the economic conditions and operations of the British Columbia Electric Ry. and subsidiary companies. The investigation was a thorough one, evidence on all matters being taken at considerable length in Vancouver, Victoria and New Westminster, and Mr. Shortt also made a close inspection of the company's power, electric lighting, railway and other plants. His report was handed to the government and was made public Nov. 19. A short summary of its recommendations was given in Canadian Railway and Marine World for Dec., 1917, on pg. 482. The British Columbia Electric Ry. has issued the report in full in a 60 page pamphlet, with an explanatory note, in which it says: "In presenting this report to the public, the company makes no comments, and is actuated solely by the desire to place all the facts with regard to its system before the communities it serves. The public has a right, as well as a duty, to know and understand its public utilities, and we are taking this opportunity of placing the whole report before them in the hope that it will receive the consideration it deserves."

The report refers to numerous documents, and tabulated statements filed in connection with the evidence, all of which were made use of by the commissioner. The report is divided into nine sections. Sec. 1 deals with the company's financial affairs, the grouping of the various utility properties, and the conditions which brought them into being, together with summaries of the several franchises and agreements under which the company operates. The underlying factors of community growth and their dependence upon a unified system of transportation are also detailed and discussed. Sec. 2 deals with the period of expansion and depression, showing that the reaction following the boom period, to 1913, seriously affected the company. The commissioner expresses some surprise that the company did not more seriously outrun with its extension of lines what transpired to be the permanent needs of the districts. The falling revenue consequent upon the period of depression, had an unfavorable effect upon the value of the company's property, which was further affected by jitney competition. In sec 3, the question of "jitney or street car" is discussed so far as the traffic in Vancouver is concerned, while in sec. 4, the question of the interurban jitney is taken up. His conclusions may be summarized as follows:

An open minded examination of the jitney service as it at present exists, should convince anyone that, while it may be a useful supplement to an electric railway service it cannot possibly take its place. It is possible for a trackless motor bus system to take the place of the present street cars, and such a changed system might be operated by the B.C. E. Ry., or by any other large corporation. This system, however, has nothing in common with the existing jitney service, except the one single feature that neither the

jitneys nor the motor busses require tracks or trolleys. As is fully demonstrated in the origin and expansion of the jitney service it involves no rational foresight or organization, no special investment of capital in lines from which it cannot readily be withdrawn, no guarantee as to rates, and no special arrangements to meet the permanent needs of the public—in a word, no responsibility whatever, either personal or corporate, to continue in adequate form a service which has become one of the most permanent and vital requirements of a modern city. On the other hand, a street railway system in a large modern centre of population is the product of years of organization and investment of millions of capital in plant, in the greater part of which cannot be converted to other uses, and is therefore at once a very heavy guarantee for the performance of its obligations and the highest possible inducement to afford where possible an acceptable service to the public, on whose favor it entirely depends. Were the street cars forced to discontinue, the citizens would be entirely at the mercy of an irresponsible service, both as to numbers in operation and fares demanded.

Even should some form of motor service ultimately replace the electrical trolley, as argued by the jitney interests, it must be conducted, as experience everywhere proves, either by responsible joint stock companies or municipal corporations. In either case the independent individual jitney owner, in whose interests the whole argument before the commissioner was presented, must be eliminated. It is difficult to see what advantage there is in throwing out of employment that large and respectable class of citizens of Vancouver and Victoria and districts who constitute the employees of the B.C. E. Ry, merely to ensure the temporary support of a limited number of independent operators of jitney cars, who cannot guarantee, either for themselves or each other, that they will furnish a reliable service for the citizens of those districts, and who in turn must be supplanted by large and permanently responsible capitalist corporations. These in turn must develop other well organized systems with a body of employees under normal and satisfactory conditions with the customary regulations as to hours, rates and the many other terms embodied in agreements between employers and employees.

In sec. 5 the questions of fares, service and one-man cars are considered, the commissioner recommending the revision and simplification of fares; the holding of a conference between the company and the, municipal authorities as to fares transfers and service; the trial of one-man cars; the skip-stop plan of operation and through cars to New Westminster. Sec. 6, deals with conditions in Victoria and on Vancouver Island, where the commissioner finds the economic conditions similar to those in Vancouver. He points out that the company should be able to exist in order to give service; that jitneys must go from competitive routes, as the company cannot be expected to meet increased prices and diminishing revenues and have its most profitable business

taken away; he also recommends a revision of the charter.

In sec. 8 the commissioner deals with the question of the apportionment act; the question of the appointment of a public utilities commission. All public services, he says, are necessarily faced with a great deal of criticism, much of which is unreasonable. The primary function of a public utilities commission would be, by a constant accumulation and an intelligent study of the facts, to determine what are and what are not reasonable and justifiable claims. Such a commission would find it necessary "not only to protect the public against the unjust and unnecessary encroachments of corporations, but to the end that the corporations may be able in the most efficient manner to meet the requirements of the public, to protect them against each other and against short-sighted and irresponsible sectional clamor, which if allowed to determine public policy, would cripple or destroy very essential enterprises involving large investments of wealth, the impairment of which would immediately react to the detriment of the community." Certain departmental officials should be appointed members of the commission together "with at least one person of good judgment and wide experience who could devote his whole time to acquiring and co-ordinating the necessary information as to the varied interests of the public involved in the more important utilities. If properly constituted the commission will be able to furnish well matured and just regulations and decisions alike, for the general administration of the various public utilities, as for the adjustment of special grievances and claims as to rates and conditions of service, in accordance with what may be most expedient in the public interest."

Sec. 9 contains the findings and recommendations, of which those affecting the company's street railway interests are appended.

"It is the decision of this commission that an efficient street car service in Vancouver and between Vancouver and New Westminster cannot be maintained under the present condition of competition with jitneys, or public automobile service."

It is recommended that until the financial returns of the street railway service materially improve, as may be determined by reference to any provincial public utilities commission which may be appointed, or by mutual agreement between the municipalities affected, and the street railway company, a city population area be determined within which fares and free transfers on the existing basis shall be maintained.

"That free transfers on the street cars to and from this city population area and the outlying districts of the street railway lines be discontinued, and that a conference be arranged between the official representatives of the municipalities affected and the management of the street railway company with a view to the adjustment of rates and service schedules on the lines beyond the city population area, as may be necessary to the maintenance of the best possible ser-



vice under the present and immediately prospective financial conditions.

"That subject to the approval of the parties to the same conference, on certain specified lines, the operation of one-man cars be given a fair trial with a view to reducing unnecessary costs and maintaining a better service on these routes than might otherwise be possible.

"That the B.C. E. Ry. be authorized to increase the speed limit and by skip-stop to improve the service by special through cars between Vancouver and New Westminster."

So far as Victoria and Vancouver are concerned the recommendations are: That jitney competition with street cars along the routes and in the districts served by them be eliminated, but that in the districts not served by the street cars jitneys and motor busses may freely operate, and that in order to reach the centre of the city they may ply along North Quadra St. to its junction with Yates St. and down Yates St. to Douglas St. It is recommended that the charter under which the B.C. E. Ry. operates in Victoria and district be amended so as to bring it into harmony with the charters granted to Vancouver and the adjoining municipalities, except as to the proportion of gross earnings to be paid to the City of Vancouver.

In the course of an interview after the publication of the report, George Kidd, General Manager B.C. E. Ry., is reported to have said. "We are prepared to carry out to the letter all the commissioner's recommendations as to the car service and the lighting service. We entered the investigation laying all our cards on the table and agreeing to whatever finding he might make. Now he has made his decision, we accept it without reservation, and we have no doubt this city, on its part, will do so also."

The jitney men have expressed their disappointment at the report, and it is anticipated that they will largely disappear.

A delegation of street car men waited on the provincial government recently to express their disapproval of the suggestion in the report favoring the adoption of one-man cars.

A Vancouver press dispatch of Dec. 19 says:—"Amendments to the city by-laws adopted by the Vancouver City Council last night are expected to legislate the jitneys out of business, both in Vancouver itself and on the suburban runs out of Vancouver. The legislation takes effect April 1 next. This is in accordance with Adam Shortt's report upon his investigation of traffic conditions in this city."

**The Hull Electric Co.'s Franchise in Aylmer, Que.**—The Aylmer Town Council contends that the company's franchise in that town expired Dec. 1, and has stated conditions upon which a renewal would be granted. The company claims that its franchise is a perpetual one and is continuing its service. The council decided on Dec. 4, to call for tenders for lighting the streets and for the supply of power within the town. This matter is part of the same franchise. (Oct., 1917, pg. 407.)

**Hamilton St. Ry. Service.**—The Hamilton City Council's special street railway committee announced at a recent meeting that no report would be presented to council for the present, but that the new council would be asked to appeal to the Ontario Railway and Municipal Board for an order compelling the company to provide an improved service.

## Regina Municipal Railway Fares, Deficits and One-man Cars.

Following are extracts from City Commissioner Thornton's report for 10 months, Jan. 1 to Oct. 31, 1917:—

Transportation has been, and continues to be, afforded street railway patrons in Regina at less than actual cost. The fares are today the same as when the road was built in 1911, in spite of universal increases in expenses. It is altogether unfair to the ratepayer as such that he should be taxed for a service rendered to the railway patron as such. The principle is inequitably unsound, and if it continues to be applied will have most serious results. Every utility should be made to pay its way and this can only be effected by charging adequate rates for

operated 87,500 car hours, which on the Calgary basis would represent a saving in operation expense of \$26,250. The passenger revenues for the 10 months would have been \$28,000 greater for the same passengers carried, on a basis of a straight 5c cash fare. These two sums added together almost exactly represent the deficit for the period. The following table indicates concisely the great improvement in the operating statement of this utility as compared with former years. The figures for 1914-1915-1916 are actual, those for 1917 are based upon the actual results for the 10 months increased proportionately to cover the whole year.

	1914.	1915.	1916.	1917.
Revenue . . . . .	\$219,150.67	\$172,177.67	\$212,790.19	\$224,970.60
Passengers carried . . . . .	4,677,505	3,661,177	4,671,402	4,954,972
Operating expenses . . . . .	\$225,184.81	\$180,333.33	\$191,359.68	\$195,873.42
Fixed charges . . . . .	89,718.28	101,599.35	97,575.54	96,066.66
Total operating expenses . . . . .	314,903.09	281,932.68	268,935.22	291,940.08
Operating surplus deficit . . . . .	6,034.14	8,155.66	21,430.51	29,097.22
Total deficit . . . . .	95,752.42	109,755.01	76,145.03	66,979.48

the service rendered. We have before the city council a recommendation that a straight 5c cash fare be adopted. We are firmly of the opinion that this rate is inevitable and feel it should be adopted at once.

Every legitimate means to reduce operating expenses should be adopted. In this connection there is now under consideration the question of one-man car operation. The present cars can be equipped for such operation at a moderate cost, about \$200 a car. It is estimated that a reduction in expense of \$30,000 a year can be effected by one-man car operation. The council has applied to the Saskatchewan Government for legislation to permit such operation, and it is hoped the amendment will be granted. The granting of the application would not mean that the system would be adopted but would mean that the council would be in a position to test out a system which, if it proves to be safe and to afford adequate service, should be put into effect at once.

The results of this department show a material improvement over 1916. The total deficit for 10 months is \$55,000, compared with \$13,000 in 1916. The surplus on operation is \$24,000, compared with \$13,000 in 1916, an increase of 84%. Operating expenses are, however, heavier than last year by \$6,600, owing to an increase in wages of nearly 10% and an abnormal increase in the cost of material. As pointed out above, if this utility is to be put on a self supporting basis, radical measures must be adopted to increase the revenues and cut down expenditures. We believe that all reasonable reductions in expenses have been made under the present system of operation. There remains the one-man car system as a means to affect a radical reduction. By a comparison made recently between the Calgary one-man car system and our own, the following facts were ascertained. The results for one day were contrasted. In Calgary, for a total of 815 car hours operated, the revenue was \$2.13 a car hour against 326 car hours in Regina with a revenue of \$1.73 a car hour. This indicates that the traffic in Calgary is heavier than in Regina. The cost for operators' wages a car hour was 42c in Calgary, against 72c in Regina. In the 10 months period the Regina Municipal Railway has

We have referred previously to the many influences for community benefit, in the development of the outlying districts, the increase of business property values, the bringing in of large new areas under full assessment, the pavement on a portion of the streets, etc., for all of which the street railway is directly responsible and in respect to which its expenses largely increased and for which it receives no direct credit. The city's utility debenture debt is greater than its general debenture debt. Funds for utilities are no advanced on the security of the asset to be created, but on the general credit of the city. Our good credit is our greatest asset, our fundamental need. Since our credit is so largely involved in the ownership of utilities, if for no other reason, they should be operated on business principles only. The credit of any municipality which operates utilities at a loss is necessarily depreciated. The argument that rates are lower than charged elsewhere, or than would be charged by private ownership, while perhaps popular at home, carries no appeal whatever to the investor in securities, in fact as likely as not will create distrust. Rates should be charged for utility services sufficient to pay all expenses, including capital charges, depreciation, obsolescence and taxes, as well as all ordinary operating expenses. We have every faith in our utilities. They can be made to continue to supply first class service to the citizen at minimum cost. They eliminate numerous evils attendant upon private ownership and control.

**Detroit Fares Advanced.**—The Detroit United Ry. on Dec. 1 abrogated its agreement with the city for the sale for seven tickets for 25c, except on the Sherman, Fourteenth, Crosstown and Harper lines, where franchise requirements provide for 8 for 25c and 6 for 25c fares. On the other lines a straight 5c fare is collected. In retaliation the city council passed a resolution requiring the company to pay \$10,000 daily rental for the use of the streets on which franchises have expired, rescinded permission to operate skip stops, and authorized the Municipal Railway Commission to employ Barclay Parsons & Klapp, of New York, to investigate whether the fare increase is justified.



## Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**—The North Vancouver District Municipality will vote at the January elections on a bylaw authorizing a grant of \$2,500 to aid the company to lay its tracks on to the ferry wharf and to run its cars thereon. Before this can be done the North Vancouver City Council's assent has to be obtained. (Dec., 1917, pg. 488.)

**Edmonton Radial Ry.**—The Edmonton Alta., City Council is considering the Street Railway Department's proposal to extend the 106th Ave. or Sutherland line, in order to connect the 97th St. (Namayo line) and the 101st St. line; the estimated cost is \$650 for temporary line. The Superintendent states that a considerable saving in operation would be effected if the extension were built. (July, 1917, pg. 286.)

**Edmonton Radial Ry.**—A press report states that it is proposed to build a line across 106th Ave. between 97th and 105th streets at an early date, to enable another belt line to be established. (July, 1917, pg. 286.)

**Hydro-Electric Power Commission of Ontario.**—We are officially advised, with respect to the railway being constructed by the Hydro-Electric Power Commission of Ontario in connection with the Chippawa-Queenston power canal, that the railway will run from the Welland River, near Montrose, around Niagara Falls City to the Niagara River near Queenston, about 12 miles. The line will have two tracks, standard gauge, 70 lb. steel, ballasted with rock. About eight miles of construction have been completed at the northern end of the line. A recent press report states that about 350 men are on the work, which includes the erection of a number of bridges over ravines, and one concrete bridge, now being built over the Niagara, St. Catharines & Toronto Ry. in Stamford Tp. The earth removed in grading is being used to fill in ravines running to the Niagara River. The work is being done under the direction of F. A. Gaby, Chief Engineer of the Hydro-Electric Power Commission of Ontario, under the immediate supervision of H. G. Acres, Hydraulic Engineer, with J. B. Goodwin as works Engineer. The line will be operated by electric power, 550 volt, direct current, from an overhead system, of copper wire strung on wooden posts; electric locomotives being used. (Dec., 1917, pg. 471.)

**Kitchener & Waterloo Electric Ry.**—The Ontario Railway and Municipal Board held a sitting at Kitchener, Ont., Dec. 11, to consider an application to compel the commissioner in charge of the municipally owned electric railway to extend its line to Dominion Tanners' factory. This is a new industry, one of the inducements offered to locate in Kitchener being that the city would build an extension of its electric railway 0.6 of a mile long to the plant. The board adjourned the hearing until the Galt, Preston & Hespeler Ry. could be represented, that company being also interested in the provisional agreement.

**Niagara, St. Catharines & Toronto Ry.** The Board of Railway Commissioners has authorized the company to open for traffic a temporary diversion in Stamford Tp., Ont.; and also to open for traffic its branch line from Ontario and St. Paul

St., to the G.T.R. station, St. Catharines, Ont., 4,700 ft. (Dec., 1917, pg. 488.)

**Nipissing Central Ry.**—Application will be made to the Dominion Parliament for an act to extend the time for the completion and putting into operation of the lines authorized by the company's act of incorporation and amending acts. The railway is now under the management of the Timiskaming & Northern Ontario Railway Commission, on behalf of the Province of Ontario. S. B. Clement, North Bay, Ont., is Chief Engineer and Superintendent of Maintenance.

**The Quebec Ry., Light and Power Co.** has, we are officially advised, completed a new piece of line 0.18 mile long from Fourth St. to connect with track on First Ave., at Charlesbourg Road, Quebec. (Nov., 1917, pg. 444.)

**Sandwich, Windsor and Amherstburg Ry.**—The question of the proposed Ferry St. stop in Windsor was discussed by the city council recently and an opinion was expressed that the city should build the loop and lease it to the company until 1922. No decision was reached. (Nov., 1917, pg. 444.)

**Toronto Suburban Ry.**—We are officially advised that the company proposes to build car barn and express shed at Guelph, Ont., the present terminus of its extension from Lambton. (Dec., 1917, pg. 488.)

**Toronto and York Radial Ry.**—We are officially advised that the company contemplates making considerable betterments on its Mimico division, the extent of which has not been fully determined. In connection with the construction of the Toronto-Hamilton highway, a question has been raised at New Toronto with respect to the location of the railway tracks, and the local board of trade has taken action against the highway commissioners to prevent any alteration being made. (Dec., 1917, pg. 488.)

### Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry., and allied companies:**

	Oct. '17	Oct. '16	4 mths. to Oct. 31, '17	4 mths. to Oct. 31, '16
Gross	\$191,964	\$445,263	\$1,812,176	\$1,695,659
Exp.	393,508	351,845	1,551,321	1,401,856
Net	98,456	93,418	291,155	293,803

**Cape Breton Electric Co.**

	Oct. '17	Oct. '16	1 mths. to Oct. 31, '17	4 mths. to Oct. 31, '16
Gross	\$13,397.19	\$36,466.20	\$163,386.85	\$138,393.73
Exp.	28,168.54	18,204.89	105,757.23	74,750.41
Net	15,228.65	18,261.31	57,629.61	63,643.32

**Calgary Municipal Railway**

	Oct. 1917	Oct. 1916
Gross	\$49,316.87	\$53,721.69
Expenses	30,924.27	36,336.84
Net revenue	18,392.60	17,384.85
Fixed charges	17,248.36	17,030.48

**Edmonton Radial Ry.**—The Mayor of Edmonton, Alta., stated on Nov. 30, at a public meeting to consider civic affairs that the E. R. Ry. showed a deficit for the ten months ended Oct. 31, of \$144,118.31 against \$96,863.43 for the same period of 1916. The increased deficit was explained by the fact that at the beginning of 1917 wages of motormen and conductors were increased about \$20,000 a year, and there had also been two very heavy damage claims against the railway. Up to the date mentioned \$14,289-

27 had been expended for claims against the railway, against \$2,581.06 in 1916. A considerable saving had been made by the use of one-man cars and it was hoped that by next summer the department would be in a position to operate its full service with one-man cars, with the assistance of extra cars during the rush hours.

**Fort William Electric Ry. Deficits.**—Application is to be made to the Ontario Legislature for the confirmation of a bylaw authorizing the issue of \$225,000 of debentures to take care of the deficits in connection with the city's electric street railway. The bylaw gives the deficits as: 1914, \$29,162.54; 1915, \$64,270.14; 1916, \$64,827.68; 1917, \$65,746.59.

**Regina Municipal Ry.**—The City commissioners of Regina, Sask., in their annual report on the city's finances which was discussed at a recent public meeting, stated that steps must be taken to make some provision for the outstanding loss on the street railway system up to 1914 by the negotiation of a loan covering this loss, which amounts to over \$100,000, from property sales account. The only other alternative, in their opinion, is to cover the loss by a tax levy, or by an increase in the fares. The latter, they state, is more or less impracticable and the former would be more or less unjust to the ratepayer of today.

**Toronto Civic Ry.**—Total receipts for November, \$24,850.69, against \$19,051.66 for Nov. 1916. The number of passengers carried during November was 1,481,471 against 1,135,958 during Nov. 1916.

**Toronto Ry.**—Gross for Nov., \$537,505, against \$489,987 for Nov. 1916, the percentage paid to the city being \$55,823 and \$48,890 for the same periods respectively. The totals for 11 months ended Nov. 30, are \$5,623,235 for 1917, and \$5,356,110 for 1916, the city percentage being \$896,850 and \$846,843 for the same periods respectively.

The regular quarterly dividend of 2% has been declared for the quarter ended Dec. 31.

**Toronto Ry., Toronto & York Radial Ry., and allied companies.**

	Oct. '17	Oct. '16	10 mths. to Oct. 31, '17	10 mths. to Oct. 31, '16
Gross	\$1,043,886	\$907,460	\$9,934,998	\$8,913,224
Exp.	599,073	469,837	5,331,378	4,557,490
Net	444,813	437,623	4,603,620	4,355,734

**Winnipeg Electric Ry. and allied companies.**

	Oct. '17	Oct. '16	10 mths. to Oct. 31, '17	10 mths. to Oct. 31, '16
Gross	\$301,722	\$278,817	\$2,733,516	\$2,740,271
Exp.	209,761	182,574	2,071,428	1,765,145
Net	91,961	96,243	662,088	975,126

### Electric Railway Track Laid in 1917.

There was practically nothing doing in the way of new construction on electric railways in Canada during 1917. Only three lines have reported any new work done, the total of new track being 1.56 miles. Construction has been started on a line to be operated by electricity, and eight miles of grading have been completed by the Hydro Electric Power Commission of Ontario in connection with the building of the power canal in the Niagara peninsula.

	Miles
Niagara, St. Catharines & Toronto Ry.	
Ontario and St. Paul St. to G.T.R. St.	
Catharines, Ont. 4,700 ft. ....	0.89
Quebec Ry. Light and Power Co.	
4th St. to 1st Ave., Charlesbourg Road, Quebec	0.18
Toronto Civic Ry.	
Quebec Ave. to Rummymede Rd. Bloor St. extension	0.49
Total miles	1.56



### One-Man Cars in Saskatchewan.

A bill amending the Saskatchewan Railway Act was introduced into the legislature Dec. 8. It proposed to add a new section, to be numbered Sec. 237a, and to give cities and towns the power to declare that the provisions of secs. 236 and 237 of the act, which require two men to be in charge of electric cars, shall not apply in such cities or towns during the currency of such bylaw. It would also give the council power to repeal any such bylaw, upon a majority vote of the ratepayers, on the last revised list of voters for the municipality, the provisions of the city act and the town act as to bylaws to govern where they were not inconsistent with the provisions of the present measure. When the bill was introduced on Dec. 8 it was explained that its object is to enable the councils of cities and towns in which electric railways are being operated to pass bylaws providing for the operation of one-man cars. Under the Saskatchewan Railway Act it is required that two men, a motorman and a conductor, shall be in charge of each car. It is not proposed to repeal this provision but to add a section to the act under which the councils, with the assent of the ratepayers, may pass bylaws. The bill was before the standing committee on Dec. 12, when a decision was reached not to report it to the House, on the ground that the committee had not sufficient information before it to reach a decision.

### The Street Railway Situation in St. John, N.B.

At a meeting of a committee of the city council, Dec. 3, Commissioner Fisher proposed that it is desirable that the city should own and operate the gas and electric lighting and the street railway service in the city and vicinity, the chief objects being reduction of rates, improvement and extensions of services and the obtaining of a larger contribution toward street surface maintenance, and that the City Solicitor be requested to advise the council as to the best method to be pursued in acquiring the lighting and railway franchises and the properties of the New Brunswick Power Co., particularly so as to avoid paying more than the actual value for same.

With reference to the paving of the track section of streets, the Commissioner reported that he had had several interviews with the City Solicitor in an endeavor to prepare a recommendation which would have his support, but the latter had changed his attitude in regard to the proposal submitted to the company by the council in September, when he advised that the city had a good case to take to the legislature. He now expresses the opinion that the company should not be asked to pay for any paving, basing this advice on the company's contention that it should not be obliged to pay directly for any street surface maintenance. At the same time the City Solicitor expressed the opinion that the company is not paying sufficient to the city and that its taxation should be adjusted so as to cover its use of and injury to the streets. The Commissioner considered that, as matters stood, it would be useless to make any further request to the company for payment for paving, or to go to the legislature for redress, but to wait for the possible relief under the new assessment act, or pressure of public opinion, resulting in the acquirement of

the properties by the city. In the meantime the Commissioner thinks that the council should temporize with the street surface in the track sections, and not build any foundations under the tracks, as the entire cost of the latter should be paid by the company, the amount of \$5,000 a mile for such foundations mentioned being insufficient. If the council should decide on temporizing with the surface in the track sections, the method of laying permanent paving would probably be to lay it on the sides of the streets only, and to stop at 18 in. from the rail in each case. The 18 in. space could then be surfaced with a thin layer of mixed asphalt and stone, graded and rolled, leaving the spaces between the rails for temporary treatment with gravel and broken stone. No action was taken on the resolutions, it being decided to take the matter up again at a later date.

### International Railway Power Equipment.

The International Ry. of Buffalo, N.Y., which operates the Niagara Park & River Ry. in Canada, has made recently, or has under way, a number of important power equipment additions. In its Niagara St. power station there have been installed a 5500-kw. Westinghouse turbine and 15 Babcock & Wilcox boilers equipped with underfeed stokers, new open heaters and boiler feed pumps. The new Niagara Falls substation contains two 1000-kw. and four 400-kw. General Electric rotary converters. The new River Road substation, containing two 400-kw. General Electric rotary converters, has also been completed, and by the middle of January it is expected to have two other new substations ready for operation, the North Division substation, containing three 2000-kw. General Electric rotary converters, and the Hertel Ave. substation, containing two 1000-kw. and three 400-kw. General Electric rotary converters. With these additions the total substation rating of the system will be 36,300 kw.; the steam station rated capacity, 10,200 kw., and the Canadian hydraulic station, 4000 kw.

### Toronto and York Radial Railway Rights on Yonge Street.

The Toronto & York Radial Ry. asks the City of Toronto \$1,860,000 for the physical assets, franchises, rights, privileges, etc., of the portion of its Metropolitan Division, on Yonge street, within the city limits. The statement of claim is as follows:—

"Value of franchises, rights and privileges to be taken, i.e., the company's exclusive right to operate a street railway on Yonge St. within the city limits for 35 years from Feb. 3, 1894, with rights of renewal for further future periods, and compensation for the taking thereof pursuant to the provisions of the Ontario statute, 1917, chap. 92, sec. 4, less value of running rights to be granted by the city to the railway in return. Value of physical property to be taken, being structures, sub-structures, and super-structures on the highway, according to inventory already prepared and delivered to the city: \$1,860,000."

The city's commissioners and solicitor, in transmitting the claims to the City Council said: "The foregoing was accompanied by certain explanations and figures, insufficient to enable us to form a fair judgment as to the reasonableness of

the company's demands. We therefore repeatedly requested information as to the basis upon which the statement was compiled, but have not succeeded in procuring same. We know that the value set upon the physical assets for which the city has been negotiating approximates \$110,000, which leaves a valuation of valuation of \$1,750,000 for the franchises, rights, and privileges which the company purports to sell, as set out in sec. 1 of its statement. This amount, it claims, gives credit for the running rights which the city proposes to accord. It is essential, to a fair consideration of the claim, that we should be acquainted with the details and reasons upon which it is based. We beg to recommend that the question be submitted to the judgment of the Ontario Railway and Municipal Board as per the terms of the special legislation in that behalf."

The City Board of Control acted on the recommendation given and decided to refer the matter to the Ontario Railway and Municipal Board.

### Increased Electric Railway Fares Authorised in New York and Long Island.

The Public Service Commission of the Second District (up State) of New York has granted an increase in fares to six out of the nine electric railway companies whose petitions have been heard. The companies serve Northport, Amityville, Glen Cove, Sea Cliff and Huntington, L. I.; Hornell, Canisteo, Ithaca, East Ithaca, Newburg, Walden, Peekskill and Ossining. The Hudson River and Eastern Traction Co., operating in Peekskill, is allowed to raise its fares to 7c. The other companies are allowed to raise their fares to 6c.

The commission decided the above cases after argument at length on these points raised by the opposition to the increased fares: (1) That, as the old state railway law limits fares to be charged on street cars within municipal limits to 5c, the commission has no power to raise the rate. (2) That franchises or municipal consents, limiting a fare to 5c constitute contracts, and the commission has no power to raise the fare. The commission overruled these points and held that it has the necessary rate making power. The increased rates of fare, the commission stated, may be reduced, if later on it be shown that they are no longer necessary.

Three other companies have been heard on their petitions for increased fares—the Peekskill Lighting and Rd. Co., which operates about 10 miles of track in and near Peekskill, N.Y.; the Putnam and Westchester Traction Co., a road of about three miles in and near Peekskill, N.Y.; the Glen Cove Rd. Co., which operates about three miles of track in and near Sea Cliff and Glen Cove and Hempstead Harbor, L.I. More than 20 other companies have petitioned for increased fares and it is expected these cases will now be rapidly disposed of. Each company has to make out a case on its own account.

Sandwich, Windsor and Amherstburg Ry. Franchise.—The Windsor, Ont., City Council decided, Dec. 5, to submit a question at the municipal elections Jan. 1, asking the ratepayers to state their views upon a proposed extension of the company's franchise, or the purchase of the system.



## Electric Railway Notes.

The Toronto and York Radial Ry. is negotiating for the purchase of four cars.

Winnipeg Electric Ry. Company's officials state that the chief difficulty in giving an adequate service is the difficulty in obtaining men.

The Sarnia Street Ry. resumed its car service to the Pere Marquette station in Sarnia, Ont., Dec. 13, which it discontinued some months ago.

The Toronto ratepayers are voting Jan. 1, as to whether they are, or not, in favor of the city taking over the Toronto Ry. on the expiration of the franchise in Sept. 1921.

The Sandwich, Windsor & Amherstberg Ry. has added to its rolling stock recently 3 single truck p.a.y.e. cars built in Canada and 2 double truck steel cars built in the United States.

The Brantford & Hamilton Ry. has opened a ticket agency at the corner of Colborne and Market Sts., Brantford, Ont., for the sale of through tickets to Hamilton. Tickets for intermediate points can only be had on the cars.

At the Hamilton, Ont., City Council meeting Dec. 12 the special street railway committee was directed to consider matters relating to the service on certain of the Hamilton St. Ry.'s routes, and delays occasioned to traffic on other lines.

The Toronto Works Commissioner has recommended that the city enter into a two years agreement with the Toronto Civic Ry. employees to confirm the existing rate of wages and working conditions.

The Calgary, Alta., Municipal Ry., owing to increasing traffic, has increased the number of cars being operated on several of its lines, and has rearranged the routes of the Sunnyside cars by making it a one-way route over the Louise bridge and back over Centre St. bridge.

In order to speed up Winnipeg Electric Ry. cars the city works committee has authorized the company to eliminate the waiting platforms at Garry, Smith and Donald Streets, and to stop only on the near side going west on these streets, and on the far side when going east.

A Hamilton St. Ry. official is reported to have stated in an interview Dec. 17 that it would not be a matter of surprise if the service at present being given by the company in the city should be reduced. The matter of power is a very serious one, owing to the munition plants' demands.

F. Hoover, business agent of the Street Railway Men's Union in Vancouver, is preparing a report on one-man cars for presentation to the British Columbia Government in connection with the recommendations on the matter in the Shortt report, which is summarized on another page of this issue. The "report" will doubtless take the form of a protest against the use of one-man cars.

The Toronto Suburban Ry. placed in effect, from Dec. 1, 1917, a special express tariff over its line between West Toronto and Guelph, Ont. The rates are graded from 30c to 40c per 100 lb., with special rates for market produce, etc. The rates include collection and delivery at agent points, viz., Toronto, Georgetown and Guelph. F. Butcher has been appointed in charge of the express department, with office at 2896 Dundas St., West Toronto.

The short supply of coal in Hamilton, Ont., is said to be the cause of the cars on the Hamilton St. Ry. being inadequately heated. E. P. Coleman, General Manager, stated recently that orders for coal were placed in April last, but there had been no deliveries. The company was getting what coal it could, and was making the most economical use of it until the prospects of getting a sufficient supply were brighter. The use of electric heaters was not feasible, owing to the demands for electric power for the munition plants.

In connection with the elimination of the level crossing of railway tracks by the Toronto Ry., on Queen St., Toronto, near Don station, the Board of Railway Commissioners has ordered the C.P.R., G. T.R., Canadian Northern Ontario Ry. and Toronto Ry. to pay in addition to amounts already paid, if any, to the City of Toronto \$115,000, \$30,000 \$135,000, and \$80,000 respectively, in respect of damages incidental to the work, without prejudice to the correctness or otherwise of accounts submitted.

Lethbridge Municipal Ry. employees state that the report that they are being paid at the rate of 37½c an hour is incorrect. They say they are receiving 30c an hour with a war bonus of \$1.75 a week if they work every day, which works out to 33 1/5c an hour. They further claim that while clerks and other city employees received an increase of pay, the manner in which the street railway men's pay is worked out has actually reduced their pay by about \$7.80 a month, equal to one hour's pay per day.

### Mainly About Electric Railway People.

R. H. Long, heretofore Electrical Superintendent, Winnipeg Electric Ry., has been appointed Power Superintendent.

George Garrett, heretofore Master Mechanic, Winnipeg Electric Ry., has been appointed Superintendent of Rolling Stock.

W. M. Fraser, Electrical Superintendent, British Columbia Electric Ry., Vancouver, is reported to have been given full charge of operating.

F. S. Easton, Hydro Electric Engineer, British Columbia Electric Ry., Vancouver, is reported to have been given full charge of its producing plants.

G. A. Mills, heretofore Electrical Engineer, Waterloo, Cedar Falls & Northern Ry., Waterloo, Iowa, has been appointed Electrical Engineer, Winnipeg Electric Ry.

Jas. O. Heyworth, M.A.Soc.C.E., general contractor, Chicago, who has been appointed in full charge of wooden shipbuilding for the Emergency Fleet Corporation, United States Shipbuilding Board, is President of the International Transit Co. of Sault Ste. Marie, Ont.

W. C. Hawkins, Vice President and Managing Director, Dominion Power and Transmission Co., Hamilton, Ont., who has been a director of the Southern Canada Power Co. for some little time, has been elected President of that company, which includes among its subsidiaries the Sherbrooke Railway & Power Co., operating at Sherbrooke, Que.

M. E. McCormick, whose appointment as Assistant to General Manager, New

Brunswick Power Co., which operates the St. John, N.B., street railway, was announced in our last issue, was in the Bangor Railway and Electric Co.'s service at Bangor, Me., for 20 years, working up from service in the car house to Assistant General Manager.

G. D. Archibald, Superintendent, Saskatoon Municipal Ry., who while out duck shooting on Oct. 8 received a gun shot wound which necessitated the amputation of two toes, is able to be out again, and to get around on crutches, after being in a hospital for several weeks. During his absence from duty, H. Swail, Assistant to Superintendent, is acting as Superintendent.

### The Sherbrooke Railway & Railway Co's Directorate, Etc.

W. C. Hawkins, Vice President and Managing Director, Dominion Power & Transmission Co., Ltd., Hamilton, Ont., has been elected President of the Southern Canada Power Co., Ltd., succeeding C. J. McCuaig, of Montreal. This company operates in the Province of Quebec, south and east of the St. Lawrence River and owns and controls the following properties:—Southern Canada Power Co., South Shore Power & Paper Co., La Cie De Gaz, Electricite & Pouvoir, St. Johns Electric Light Co., Brome Lake Electric Power Co., Richmond County Electric Co., Sherbrooke Railway & Power Co., Lennoxville Light & Power Co., Eastern Townships Electric Co., Stanstead Electric Light Co., Burroughs Falls Power Co. and International Electric Co. of Vermont.

The Sherbrooke Railway & Power Co.'s annual meeting was held in Montreal Dec. 13. It does not issue a separate report, its figures being included in the Southern Canada Power Co.'s report with other subsidiary companies. The officers for the current year are:—President, W. C. Hawkins; Vice President, F. W. Teele, Vice President, Southern Canada Power Co., formerly General Manager, Porto Rico Ry. Co.; General Manager, J. B. Woodyatt. General Manager, Southern Canada Power Co.; Secretary Treasurer and Purchasing Agent, L. C. Haskell, Secretary Treasurer, Southern Canada Power Co.; other directors, C. J. McCuaig, S. H. Ewing, S. W. Ewing and Grant Johnston. Charles Johnstone is Assistant Secretary Treasurer and Controller.

### London and Port Stanley Railway Operating Results.

The report for the year ended June 30, 1917, shows as follows:

EARNINGS.	
Passenger . . . . .	\$147,470.44
Baggage . . . . .	1,080.10
Parlor, sleeping and special cars . . . .	264.47
Mails . . . . .	1,042.80
Express . . . . .	3,298.04
Milk . . . . .	157.10
Freight . . . . .	121,023.02
Switching . . . . .	26,685.14
Miscellaneous transportation . . . . .	118.55
Storage . . . . .	29.85
Demurrage . . . . .	2,653.00
Rent of tracks and facilities . . . . .	6,071.92
Rent of buildings and other property . .	3,257.03
Miscellaneous . . . . .	3,533.74
	<hr/>
	\$316,685.21
Operating expenses . . . . .	\$207,356.08
Gross income . . . . .	\$109,329.13
Taxes . . . . .	\$ 3,166.25
Interest . . . . .	48,667.28
Rental of line . . . . .	20,000.00
Sinking fund . . . . .	10,914.12
	<hr/>
	\$ 82,747.65
Net income . . . . .	\$26,581.48



# Marine Department

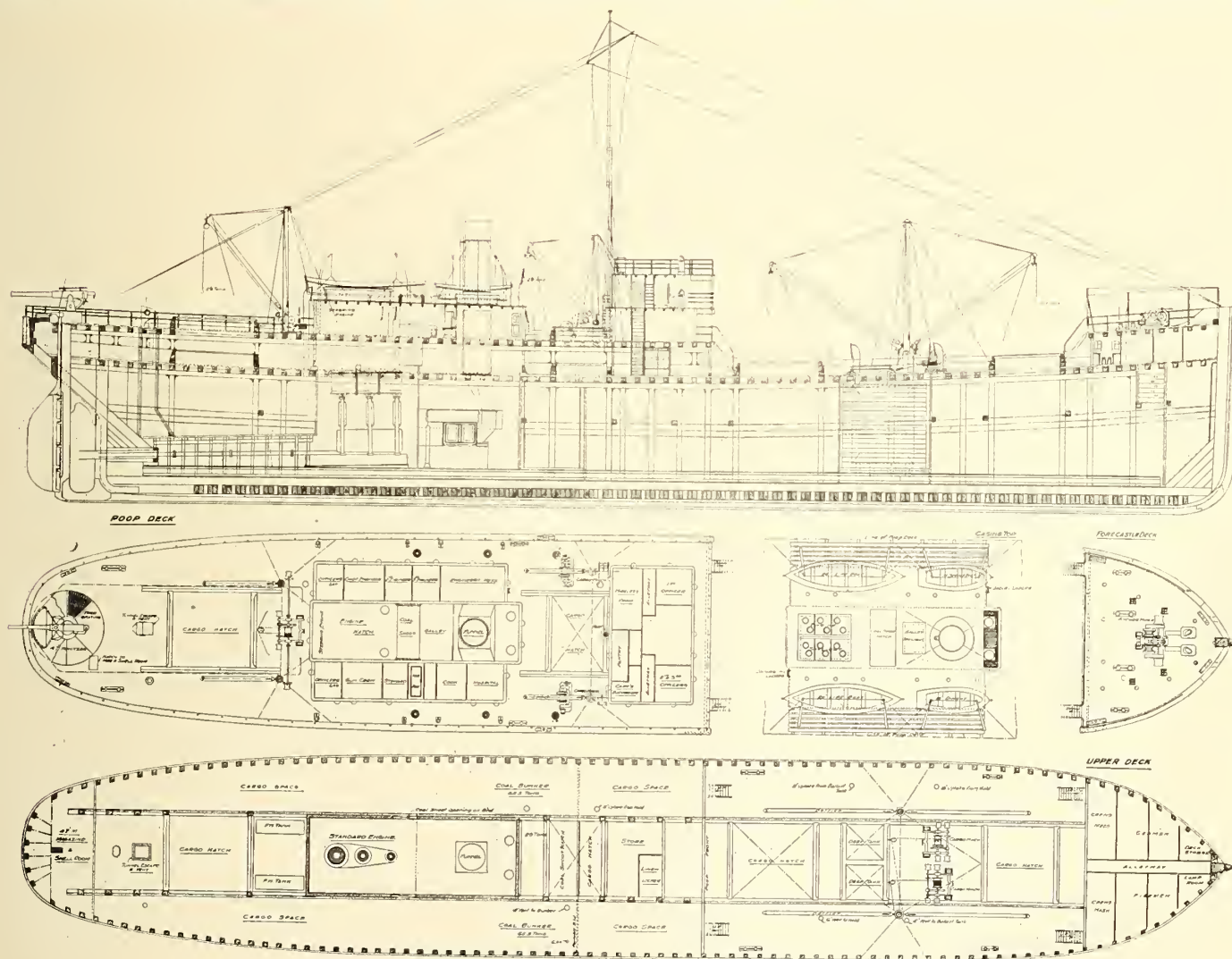
## Specifications and Plans of Standard Wooden Steamships for British Government.

Following is a summary of the specifications for standard wooden steamships for the British Government, which have been prepared by the Imperial Munitions Board's shipbuilding department at Ottawa, and under which the 46 vessels, which have been ordered at different points from Nova Scotia to British Columbia, are being built. The details of construction, fastening, etc., are such as will meet in general with the approval of Lloyd's and the board's technical advisers,

Length between perpendiculars .....	250 ft.
Length over all .....	259 ft.
Breadth, extreme .....	43½ ft.
Breadth, molded .....	42½ ft.
Depth, molded .....	25 ft.
Depth over keel .....	27 ft.
Draft for displacement .....	22 ft.
Draft over keel .....	21 ft.
Deadweight on 20 ft. max. draft to Lloyd's summer freeboard, approx. ....	2,500 tons
Deadweight on 21 ft. max. draft, approx. ....	2,800 tons

The vessels are to be of the single deck cargo type, built principally of Douglas fir, with hold beams, wood deck houses

as usual. The forepeak and after peak to be fitted for fresh water with filling pipes, suction, etc. The vessels are to be driven by single screw, with engine shaft amidships, but the builders of the hulls have no responsibility in connection with the installation of the machinery, except in the putting in of foundations for the main engines and auxiliaries, deck gear, and for piercing the hull for sea cocks, valves, etc., as directed by the board's representative, and also in the



Standard Wooden Steamships being built in Canada for British Government.

ers, but nothing in the specifications will relieve the contractor from the responsibility of employing a skilled staff to work out detail drawings and submit proposals for such details to the Classification Society and to the board's advisers, who will, however, give all assistance in their power to help contractors, without accepting responsibility for the proper carrying out of the contract. The vessels are to be built to Lloyd's requirements for A1 classification and to the British Board of Trade requirements as far as necessary for cargo steamers. The hull's dimensions are to be as follows:—

and rails, elliptical stern with long poop deck aft, and raised forecabin forward; 5 hatches; 1 deep ballast tank with longitudinal divisions; 6 watertight wooden bulkheads; 1 watertight bunker bulkhead; 1 screen bulkhead and 1 watertight door between engine room and tunnel. Officers' accommodation is to be in deck-houses on the poop deck, with a bridge and bridge house at the forward end. There will be six cargo winches, one to be a warping winch, and the windlass on the forecabin head is to be suitable for handling anchors and full scope of chain, also to be arranged for warping,

fastening of the deck machinery, fittings and windlass.

All lumber used is to be Douglas fir, unless otherwise specified, and all material is to be to the satisfaction of the board's inspectors. Long lengths are to be used in the keels, keelsons, planking and ceiling, and all decking to be edge grain. Fastenings to be treenails, screw bolts and drift bolts of galvanized and black iron. Builders are to supply the board with hulls built in a workmanlike manner, satisfactory for ocean service and fitted in all respects for the safe handling of freight. Drawings and plans



to be used will be supplied by the board during the progress of the work, and if the contractor is in doubt as to the method of construction or fastening, he is to call upon the inspector, who will at once see that he is provided with the necessary details. Fore and aft peaks will be tested with a head of water, a sinstructed by Lloyd's and the British Board of Trade's inspectors.

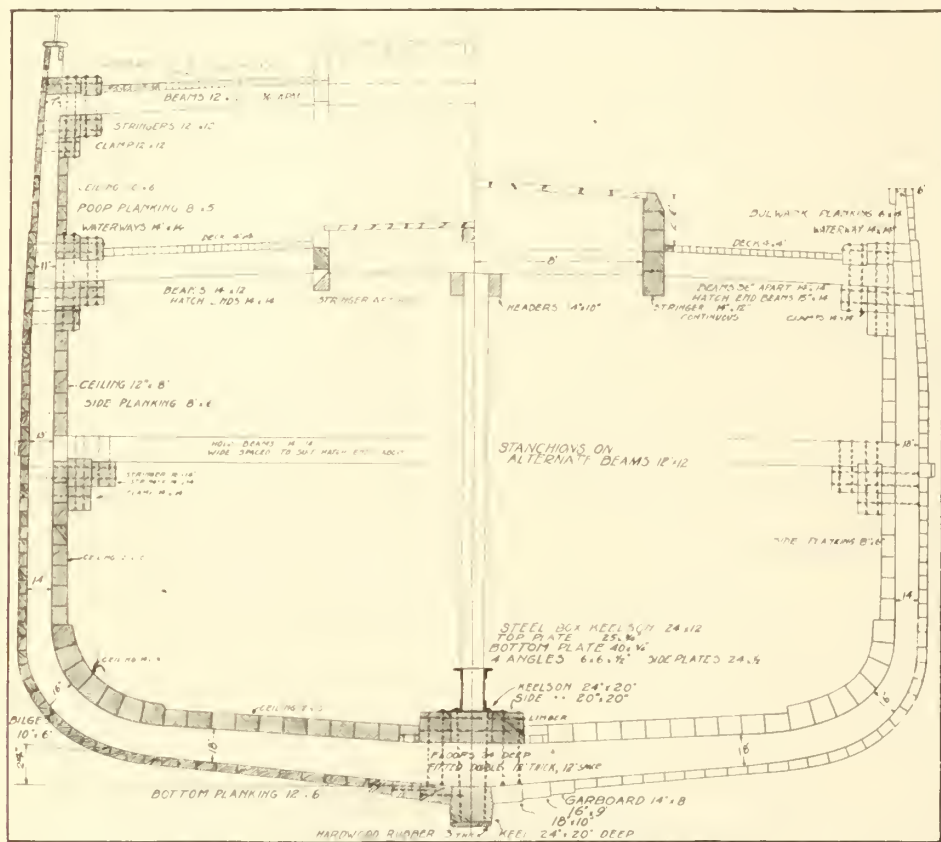
The keel is to be sided 24 in., moulded 20 in., to be in 4 lengths, scarphs 12 ft. long, copper painted before fastening, scarph ribs to be 4 in. deep, and all fastened with 1 in. galvanized button head screw bolts with heads sunk below flush for cementing before shoe is fitted; the ends of the scarphs to be spiked. The shoe is to be of 3 in. fir approximately 24 ft. lengths, fastened with 8 by 7/16 in. galvanized spikes, 15 in. centres and staggered, with heads set in about 1/2 in. and

Rudder post 24 x 24 in., tapering to 12 in. at top of keel. Frames to be double to side 12 in. and mould 24 in. at keel, 18 in. at long floor futtock, 16 in. at turn of bilge, 14 in. in way of top of thick ceiling, 13 in. in way of hold bears, 11 in. at deck and 7 in. at upper deck. The double frames to be efficiently fastened to one another with fir treenails.

In way of the well a single frame to be run up, forming a bulwark stanchion. In the way of the poop and forecabin the double frames will be run up, the ends of the top timbers to be left long to accommodate the covering board. Above the knuckle, the framing at stern will be of the rim type stern, the rim extending forward to frame 2. Three keelsons, the centre being 24 x 20 in., the sister keelsons being 20 x 20 in. The centre keelson to be in 4 lengths and scarphed with 10 ft. scarphs, the port sister keelson in

under the hold beam clamps. Between main and upper deck beams, 5 in. chocks are to be fitted, leaving air spaces. In the outside planking, the first garboard is to be 18 x 10 in., with 5 ft. scarphs; second garboard 16 x 9 in. and third garboard 14 x 8 in.; bottom planking 12 x 6 in.; bilge planking 10 x 6 in.; side planking 8 x 6 in., up to guard; top side planking 8 x 5 in., the 8 x 6 and 8 x 5 planking to be fastened double and single. Guard to be 16 x 9 in., covering board 5 x 18 in. grooved on under side to receive projecting heads of frames. Rail in way of bulwarks 6 x 20 in., grooved on under side to receive heads of stanchions. Hold beams 14 x 14 in.; main deck beams 14 x 14 in. at 'midships, running to 10 x 14 in. at ends, 5 in. worked and 4 in. sprung, spacing 36 in., to have a camber of 9 in. 'midships; upper deck beams 12 x 12 in., 36 in. centres; main deck hatch coamings 12 x 14 in., notched into beams in way of hatches; upper deck hatch coamings 12 x 12 in. notched into deck beams. A continuous fore and aft stringer to run under deck beams below hatch coamings, 12 x 14 in., scarphed with 5 ft. scarphs; 2 side keelsons 12 x 16 in. to be fitted to ceiling directly under the continuous stringer, and to be continuous and scarphed. A continuous stringer under upper deck to be 10 x 12 in., and scarphed similarly. Quarter pillars 12 x 12 in. between the side keelson and the continuous stringer under main deck beams; upper deck pillars 4 x 8 in. from top of continuous coaming on main deck to under side of stringer on upper deck. Continuous coaming on main deck to be built of 3 course 12 x 12 in. in way of hatches and two courses between; cross coamings on main deck in way of hatches to be laid on top deck; upper deck hatch coamings to be similarly built to main deck coamings; hatchways to be lined with 1/8 in. steel plate with 2 in. half round chafing iron at bottom running in fore and aft direction. As chafing iron will not register with one running athwartships, it is to be carried beyond the hatch ends at both ends for 2 ft. Hatch covers to be of wood 3 in. thick, of two pieces 3 1/2 x 13 in. through bolted to one another with three 5/8 in. bars clinched in the usual manner.

There are to be 4 ordinary watertight bulkheads, one forward of the bunker, one at the after end of the engine room, one at the after peak and at the collision bulkhead, built of 2 thicknesses of 3 in. lumber, laid diagonally and fitted between the two diagonal courses with canvas, painted with marine glue. The boundary timbers will be 7 x 7 in. fitted on both sides of the bulkhead and the vertical stiffeners 3 x 5 in. spaced 18 in. centres. The bulkheads are to be made watertight to construction details furnished. There will be a bulkhead at the after end of bunker, similarly built, but with no canvas between courses, and it will be fitted with necessary openings for access to coal, the vertical stiffeners being spaced 30 in. instead of 18 in. There will also be 2 special bulkheads, fitted as a deep tank and built of 2 thicknesses of 4 in. lumber laid diagonally with canvas between, 7 x 7 in. boundaries on both sides and 6 x 4 in. stiffeners spaced 18 in. centres. In the deep tank a fore and aft centre line bulkhead will be built of 8 in. lumber with lightening holes. The main deck planking will be 5 x 5 in., and the upper deck 4 x 4 in., finishing about half an inch less in each case. The planking is to be in lengths 20 and 40 ft., averaging 30 ft., the edges to be bevelled for caulking, the bevels leaving the vertical grain upward. Two sets of pointers for-



Cross Section, Standard Wooden Steamships, for British Government.

cemented. The stem is to side and mould 18 in. with cutwater reduced to 5 in. and gradually widen out to conform to the curve of the forefoot as it widens to meet the keel. The stem and forefoot to be securely connected to the keel and to each other, and also to the apron and deadwood. An iron stem band is to extend from the top of the stem to beyond the keel scarph connecting the forefoot, and to widen out to suit the forefoot, which is to be scarphed from stem to keel. Apron to side 24 and mould 28 in., to extend down till it dies in the forefoot. Propeller post to mould 30 and generally side 24 in., and in the way of the shaft tube to swell out to 32 in., to be tenoned into keel and skid log. The knee fastening keel to propeller post to be a natural crook, both arms to be not less than 7 ft. and fitted the full 7 ft. along the keel, the other arm to be fitted to suit height of shaft logs. Deadwood forward and aft to be generally 24 by 24 in., fastened to knee aft and forefoot forward and to come about 3 in. above face of ceiling.

3 lengths and the starboard sister keelson in 4 lengths, also with 10 ft. scarphs. A steel rider keelson to be fitted on top of the wood keelsons, and to extend from the forespeak bulkhead to the after peak bulkhead. It is to be made with wide foundation plate with built up box girder 12 x 24 in. riveted to centre of foundation plate. This steel keelson will be supplied to the contractors.

The bottom ceiling to be 12 x 10 in. in lengths, with limber strake fitted adjacent to the sister keelsons. Ceiling in way of bilge to be 14 x 14 in., and ceiling directly above bilge ceiling to 12 x 10 in., the remainder to the under side of main deck stringers to be 12 x 8 in., and 'tween decks 10 x 6 in. Hold beam stringers and clamps to be 16 x 14 and 14 x 14 in. respectively; main deck stringers and clamps 14 x 14 in.; waterways on main deck 14 x 14 in.; upper deck stringers and clamps 12 x 12 in. A 3 in. air course is to be fitted for one-fifth the entire length of the vessel each end, between keelson and hold beam clamps, and also



ward and 2 sets aft to be suitably located to give strength, and to be 12 x 18 in. to mould suitably, and to be connected at heels with a natural crook. Knees will be fitted at head of hold pillars, and to be 8 in., one arm 2 ft. long and another 3 ft.; similar sized knees to be fitted as lodging knees in way of all openings, and other similar ones, both hanging and lodging, fitted at bulkhead in way of continuous stringer under deck; hanging knees to be fitted under the fore-castle deck beams at ends, to be 10 in., with one arm 3 ft. and other 4 ft. Knightheads in way of stem and stern for approximately 6½ ft., and 2 horn timbers to extend from deadwood to after end of vessel, each 12 x 12 in., fastened to skid log, rudder post and frames.

Regarding the construction in way of engine and boiler room, the spaces between the floors in engine room and part of boiler room will be filled in solid from long floor to long floor timber, the lower edge of the filling pieces to be bevelled, and the fore and aft timber fitted to the height of the top of the steel rider keelson, extending from after bunker bulkhead to bulkhead at after end of engine room, these to form engine and thrust seatings. A deck to be laid over shaft tunnel to form bottom of after hold, 10 x 4 in. with 2 in. sheathing in way of hatch; deck beam to be 6 x 6 in., spaced 3 ft. and supported on 6 x 6 in. pillars, 1 pillar on every beam and 4 rows of pillars to be fitted if possible. The bulkhead at forward end of poop to be of solid 5 in. lumber, as also the bulkhead at after end of fore-castle. Casing round engine and boilers to be of solid 4 in. lumber.

All outside planks are to be caulked with hand picked oakum, in the proportion of one strand of oakum to each inch thickness of plank. Outside plank seams up to 18 ft. water line to be cemented, balance to be puttied. Deck planks to be similarly caulked and ceilings to be caulked so as to be watertight. Two pole masts or derrick posts to carry sets of derricks capable of handling 5 tons; mast partners to be fitted in way of masts and filled in solid 5 ft. on each side, end pieces being let into the adjacent beams. Ventilators, 15 in., to be fitted in cargo holds and in way of deep tank, with swan neck ventilators where directed. Beds for windlass, winches, steering engine and auxiliary machinery to be laid as directed. A steel rudder to be fitted, with steel stock, with steel gudgeons and pintles, gudgeons lined with lignum vitae.

The accommodation for the crew in the fore-castle to be plainly but substantially built, with open iron berths and with lockers. All plumbing to be substantial and executed with great care. Accommodation for officers, with dining room and pantry, all to be in good cargo boat style, with spring berths, hardwood front, upholstered settee, desk, drawers and folding lavatory, and floors laid with linoleum and carpet runner. Dining room panelled in hardwood, with tables, swivel chairs, sideboards, etc., usual for vessels of this class. In the way of engine room casing are to be the galley, crew's mess room, store room, ice house, officers', engineers' and petty officers' bath rooms and lavatories, wireless telegraph room, and accommodation for petty officers, cook and boy.

Two class A life boats to be fitted to the British Board of Trade requirements, one on each side of the vessel, each capable of taking the whole crew, and a service boat to the Board of Trade's class X requirements, to be supplied. The boats are to be supported in davits to the Clas-

sification Society requirements and fitted with all necessary gear and rigging for handling same. The boats will be furnished by the Imperial Munitions Board. Vessel to be fitted with stockless, self tripping type of anchor, with cables of the stud link type. The steering engine of approved make to be arranged directly over the rudder, with all necessary pulleys, chains, quadrants, etc., and fitted with suitable hand gear, and with control rods laid from the steering engine to the steering wheel on bridge. A house is to be built over the steering engine aft, of suitable construction to carry gun seating on deck. Wireless telegraph aerials and leads to wireless telegraph room to be fitted to approval. Vessel to be equipped with an efficient system of heating, and an electric lighting system of 7½ k.w. capacity driven by a turbine to be installed. Complete pumping system for sanitary and fresh water purposes, and a complete fire service.

It is to be understood that while reference is made to winches, windlasses, hawser pipes, steam heating, pumping, fire service, etc., the contractors will only do the necessary work to allow of their being installed, and the specification does not include any equipment, ship or engine supplies, deck or engine fittings, all fittings being supplied by the Imperial Munitions Board.

**Respecting Deserting Seamen.**—An order in council has been passed providing that where a seaman has been imprisoned for desertion, and signifies his willingness to sign on as one of a crew of any vessel trading to European ports, the court by which he was committed, may, notwithstanding that the term of his imprisonment has not been completed, order the sentence suspended and the prisoner released, and direct him to be taken before the shipping master to sign articles and thence to be conveyed on board any such vessel, or the court may order him to be delivered to the master or mate of such vessel, or to any officer of the navy, for the same purpose. Before directing the release of a seaman the court may order that any fine or penalty imposed may be remitted or suspended. If the seaman after his release fails to observe the court's order, he may be arrested forthwith and imprisoned for the uncompleted term.

**Transportation of Explosives.**—The Defence of Canada Order 1917 has been amended to provide that the management or master of any vessel, notwithstanding any statute or order to the contrary, may be authorized, upon the requisition of a competent naval authority, to carry ammunition and explosives, from, to, or between, any places within or without Canada, provided they are packed and stored in accordance with Admiralty regulations, and any provisions of any statutes or orders conflicting with this are suspended.

**An Agile Torpedo.**—In writing of what is stated to be a practically unsinkable steamship, which has been designed in England recently, an exchange says that if a torpedo hit her in three places she would still float. It is not stated what would happen if the torpedo continued business and hit her in a fourth place.

**The Beaver Trading & Transportation Co., Ltd.,** has been incorporated under the Dominion Companies Act, with \$3,000,000 capital and office at Toronto, to carry on a general trading and transportation business. The incorporators named are connected with a legal firm in Montreal.

## A Lake Shipping Amalgamation.

The George Hall Coal and Transportation Co., of Ogdensburg, N.Y., Frontier Trading Co., Ogdensburg, and Canada Shipping Co., Montreal, have amalgamated their interests in a number of vessels operated on the St. Lawrence River and Lake Ontario, and these are now being operated under the name of the first mentioned company. The new fleet comprises the steamships *Adrian Iselin*, A. D. MacTier, F. P. Jones, Fred Mercur, George L. Eaton, Hecla, John Rugee, Lucius W. Robinson, Phenix, and the barges *Kendall* and *Walter A. Sherman*, all of U.S. register, and formerly owned by the George Hall Coal Co., the tug *Seymour*, formerly owned by the Frontier Trading Co., Ogdensburg, N.Y., and the steamships *Cabotia*, *Compton*, *John B. Ketchum 2nd*, *James W. Follette*, *Robert R. Rhodes*, *Rock Ferry* and *Senator Derbyshire*; the tugs *Florence*, *J. H. Hackett* and *Margaret Hackett*, and the barges, A.D., F. D. Ewen, *Katie H.*, and *Zapotec* of Canadian register, and formerly owned by Canada Shipping Co., Montreal. It is stated that the vessels will be operated in the coal and wood pulp trades between ports on Lake Ontario and the St. Lawrence River. It is reported that four of the steamships named above as being owned by the George Hall Coal Co., have been requisitioned by the U. S. Government.

The Canada Shipping Co., which is associated with the Canadian Import Co., Montreal, went into the vessel business largely during 1917, and acquired a number of vessels formerly owned by F. E. Hall and Co., Montreal; and the Quebec Transportation and Forwarding Co. It still retains a number of vessels, most of which are owned by individual subsidiary companies.

**Information Respecting Vessel Movements.**—An order in council has been passed providing that no person shall, without permission of a competent naval or military authority, send, or attempt to send by cable, radiotelegraphy or other means of electric communication, to any vessel, or place overseas, any information respecting the movements of merchant ships, not being ships engaged exclusively on lake or river service, or any message from which such information can be deduced.

**Compagnie Furness (France) Ltd.,** has been organized with a capital of 2,500,000 francs, and office in Paris, France, to carry on a general transportation business, and general commercial, industrial and financial enterprises. Lord Furness, head of Furness, Withy & Co., who is also associated with Canada Steamship Lines, Ltd., is chiefly concerned.

**Woods Limited** has been incorporated under the Manitoba Companies Act with a capital of \$25,000 and office at Teulon, Man., to carry on a general business, in connection with which it is authorized to own and operate steam and other vessels, to build wharves, piers and warehouses, and to act as wharfingers, forwarders and public carriers.

**Grain Shipments from Head of Lakes.** Port Arthur, Ont., press dispatch Dec. 22.—In spite of various conditions which were expected to militate against the movement of grain from Port Arthur and Fort William, the season of 1917 proved to be the second best in total of shipments in the history of these ports. A total of 207,721,403 bushels was shipped.



# Shipbuilding Activities Throughout Canada.

## STEEL AND WOODEN STEAMSHIPS BUILDING FOR BRITISH GOVERNMENT.

**British Columbia Wooden Shipbuilding.**—In response to enquiries as to the probable dates for launching any of the wooden steamships being built in British Columbia under the Imperial Munitions Board's orders, R. P. Butchart, Director of Wooden Shipbuilding for British Columbia, is reported to have stated that machinery was being waited for from the east, and until it arrived it would not be possible to undertake any launchings. He stated that several hulls were ready for the machinery, but it would be inadvisable to float them, as there was still a good deal of work to be done on them which could better be done on the stocks. It is the intention to fix in the main shafts and propellers before launching the hulls, the other machinery being installed at the Ogden Point assembling plant, Victoria, to which the hulls will be towed. It was anticipated that several hulls would be launched before the end of December.

**Cameron-Genoa Mills Shipbuilders Ltd.**—The hull of the first of the wooden steamships under construction on the Pacific coast for the Imperial Munitions Board, was to be launched at this company's Victoria yards in December. The keel was laid July 18. The company has a contract for four of these vessels, and these are in various stages of progress, the keel of the last one having been laid at the end of November.

**J. Coughlan & Sons, Vancouver, B.C.**—The Imperial Munitions Board has ordered 4 additional steel steamships from this firm, making a total of 9 of these vessels to be built at these yards. They are to be of 8,800 tons capacity, and are included in the statement of shipbuilding for the British Government given in this issue on another page. Another similar steel steamship is under construction for Norwegian interests and it was expected to have this launched by the end of the year.

**The William Lyall Shipbuilding Co.'s** management is reported to have stated recently that the first wooden hull for the Imperial Munitions Board had been ready for launching for several days, but was held up pending the arrival of the tail shaft, propeller, rudder, etc., and the launching could not take place until these were installed. The second hull was expected to be ready by the end of December, subject to similar delay.

**New Westminster Construction and Engineering Co.**—Work is reported to be proceeding satisfactorily on this arrangement of this company's yards at New Westminster, B.C., for the construction of the hulls of four wooden steamships for the Imperial Munitions Board. The first vessel is being planked and will be ready for the beams shortly. The launching ways are under construction, and it is expected that the launch of the first hull will take place about Feb. 1. The second and third vessels are also proceeding, and the keel for the fourth has been laid.

**Victoria, B.C., Assembling Shed.**—The large shed which is being built on pier 2, Ogden Point, for the assembling and installation of the engines and machinery in the wooden hulls which are being built for the Imperial Munitions Board along the British Columbia coast, is proceeding rapidly. Several of these hulls are now

approaching completion, and when launched they will be towed to Ogden Point. It is expected that the shed will be ready early in the year. The area between the concrete walls of pier 2 has been filled in, and a depressed railway track running the entire length of the shed has been laid.

**Western Canada Shipyards Ltd.**—The first of the wooden hulls under order from the Imperial Munitions Board, to be built by this company at Vancouver, was announced to be ready for launching Dec. 10, with the exception of the rudder and screw. Two other hulls are advancing, one having the inside sheathing about completed and the planking well under way.

## GENERAL SHIPBUILDING NOTES.

**E. E. Armstrong, Hantsport, N.S.**, launched a completely rigged three masted schooner there recently.

**Canada West Coast Navigation Co.** It is reported that the company has sold to French interests 9 of the 12 auxiliary powered vessels, which it had built at Vancouver and Victoria recently. H. W. Brown, General Manager, was stated to have been in Montreal recently in connection with the probable ordering of more vessels of this type, but on his return is reported to have stated that reports as to the sale to French interests were incorrect except as regards the Mabel Brown and Esquimalt.

**Canadian Vickers, Ltd., Montreal**, during 1917, built and delivered 12 submarines for the allied governments; built 8 steel trawlers, complete with machinery and boilers; built 9 steel trawler hulls and installed the machinery and boilers supplied to them; built 29 wooden drifter hulls, and installed machinery and boilers in 16 drifters, all the trawlers and drifters being for the Naval Service Department; built one 7,000 ton cargo boat, Porsanger, which is described and illustrated on another page of this issue; and docked and repaired 30 vessels during the navigation season, with a gross tonnage of 109,450 tons. The company has completed all its shell contracts and has reconstructed the shop for the manufacture of deck machinery, of which it is turning out a considerable amount for cargo steamships.

**The Clare Shipbuilding Co., Meteghan, N.S.**, has commenced work on a second schooner of the same type and size as the Racewell, the launching of which was mentioned in our last issue. She will be 135 ft. long and 350 tons register.

**G. A. Cox, Shelburne, N.S.**, launched a 320 ton schooner there, Dec. 1. She has been named Bachelor, and will be used in the builder's service for the foreign trade.

**Ernst Shipbuilding Co., Mahone Bay, N.S.**—A two masted schooner, named Agnes D. McGlashen was launched in November. Her dimensions are, length 130 ft., beam 26.8 ft., depth of hold 10.8 ft.

**The R. H. Howes Construction Co., New York**, is reported to have taken a seven year lease of the shipyard at Meteghan, N.S., formerly controlled by the late James Cosman. It is stated that schooners of about 350 tons register are to be built there, and that the keel for the first has been laid. It is also stated that the company has purchased the Blackadar

mills, and incorporated them with the Meteghan plant, after equipping them with up to date machinery for shipbuilding.

**International Shipbuilding Corporation, Ltd.**—The remodelling of the lumber mill at Nordin, N.B., formerly owned by the Rosebank Lumber Co., is proceeding rapidly, notwithstanding a fire which destroyed some portion of the property recently. A shed is being erected for the building of ships under cover, so that the men will be protected from the weather. The building will be lighted by electricity. The keel of the first vessel, a four masted schooner rigged ship of about 550 tons, is expected to be laid shortly.

**The Kingston Shipbuilding Co., Kingston, Ont.**, launched on Dec. 22 the first of several steel trawlers which it is building for the Naval Service Department.

**The Marine Construction Co., Canada, Ltd.**, is reported to have taken over the shipbuilding business of D. H. Saker & Co., St. John, N.B. An auxiliary powered schooner is under way, and will be named Dorphontein, when launched. The plant is located on the Warner mill site. The vessel's dimensions are, length 185 ft., beam 40 ft., depth moulded 18 ft. There will be four masts and the auxiliary power will be supplied by a semi Diesel engine of 8,000 h.p. The construction is in charge of J. Densmore, formerly of Boston, Mass., as superintendent, and the management is in the hands of D. H. Saker.

**W. C. McKay & Son, Shelburne, N.S.**, launched a 140 ton schooner there, Dec. 1. Her dimensions are: length 130 ft., breadth 26½ ft., depth 11 ft. Capt. A. Ritchey, Riverport, N.S., is managing owner.

**M. Mahaffy, Toronto**, is reported to have leased the shipyard at Mahone Bay, N.S., formerly operated by McLean Bros. The yard is being enlarged for the simultaneous building of three schooners. The frame for the first vessel is erected, and keel has been laid for the second one, larger than the first.

**Montreal Shipbuilders, Ltd.**—The incorporation of this company under the Dominion Companies Act, with an authorized capital of \$300,000, was mentioned in Canadian Railway and Marine World for December. The directors are: President, W. Rutherford, of Wm. Rutherford & Sons Co., Ltd., manufacturers of sashes, doors, etc.; Vice President, E. Peck, Vice President, Peck Rolling Mills; Managing Director, C. M. Morssen, President and Manager, Atlas Construction Co.; other directors, Thos. Hall, of Hall Engineering Works, J. A. Caron, of Caron Bros. The Secretary is Arthur Jarvis. The company's principal object is the building of concrete ships, and it is said that it has taken over the business of the Atlas Concrete Shipbuilding Co., which is building a concrete steamship in Montreal.

**Nova Scotia Shipbuilding Co., Bristol, N.S.**—The three-masted schooner Ruby W., which was launched at these yards recently, is to be equipped with auxiliary driven by oil fuel. Her dimensions are, length, keel, 118 ft., beam 33 ft., depth of hold 12 ft. Another three masted schooner is in frame, for an Australian owner, and orders are on hand for another three-masted schooner and a two masted schooner.



**Polson Iron Works, Toronto.**—Two more steam trawlers for the Naval Service Department were launched at this company's yards, Dec. 25. These vessels are numbered T.R. 16 and 17, three other similar vessels, numbered 13, 14, and 15, having been launched previously by the company. The vessels are each 130 ft. long.

**Polson Iron Works, Toronto.**—A fire occurred at these works, Dec. 6, completely destroying the building containing the pattern and carpenter shop and pattern storage, with all contents. This building was located at the south end of the plant, and considerable damage was done to one of the cargo steamships on the stocks close by, as well as to the shipyard plate shop building. A new building, to house the pattern and carpenter shop, is being erected immediately, and it will be located on the western side of the property, thus removing risk of damage to vessels under construction should a similar fire occur. A new pattern storage building will also be built as soon as possible. None of the patterns concerned with vessels on order, or under construction, were in the store at the time of the fire. A delay of possibly six weeks will occur in the launching of the cargo steamship which was damaged, but it is expected that she will be ready for launching early in the year.

**J. N. Rafuse & Son, Conquer Bank, N.S.,** launched a three masted schooner, named *Integral*, there recently. She is the second of four similar vessels being built there for J. O. Williams & Co. She is of 375 tons register, and is of the following dimensions, keel 122½ ft., beam 32 ft., depth 12 ft.

**Rexton, N.B.**—It is reported that a shipbuilding yard is being prepared for operation for the building of wooden ships, and that orders are in hand for four vessels of about 700 tons each. It is stated that the yard is under the control of a Montreal shipbuilding company.

**The Saulnierville Shipbuilding Co.** is reported to have commenced shipbuilding operations at Saulnierville, N.S.

**Sorel Shipbuilding.**—The shipbuilding yards at Sorel turned out considerable work during 1917, including the following: Dominion Government Shipyard, 3 steel trawlers and 3 drifters; H. H. Sheppard, 5 drifters; Leclaire & Sons, 6 drifters; Sorel Shipbuilding & Coal Co., 6 drifters. These were all for the Naval Service Department. Sincennes-McNaughton Line, Ltd., built 3 large tugs.

**Southern Salvage Co., Halifax, N.S.**—A two masted schooner was launched in the company's yards, during November, and named *Win the War*. Her dimensions are, length 137 ft. overall, beam 26.2 ft., depth of hold 11.6 ft.; tonnage, 187 gross.

**Wallace Shipyards, Ltd., North Vancouver, B.C.**—Work on a steel freight steamship was being pushed rapidly during December, the double bottom being reported as having been completed. The company is reported to be arranging a second berth alongside, with the view of laying another keel early in January, so that work may be carried on simultaneously on both vessels. All the steel for both vessels has been received, and the engines for the first vessel have been completed, the boilers being practically complete. The company is building three sets of engines for other steamships under order at other plants for the Imperial Munitions Board.

**The Yarmouth Shipbuilding Co., Yar-**

**mouth, N.S.,** has a schooner on the stocks practically finished, and as soon as she is launched, the keel for another will be laid.

### Mainly About Marine People.

**H. B. Brownell,** Division Freight Agent, Canada Steamship Lines, Winnipeg, has resigned to engage in private business.

**W. Murdoch,** from Lloyd's staff at Seattle, Wash., has been appointed acting surveyor for Lloyd's at Vancouver, B.C., on account of the death of T. G. Mitchell. A permanent appointment will be made later.

**F. B. O'Connor,** heretofore agent at Nome, Alaska, has been appointed agent, Pacific Steamship Co., Vancouver, B.C., vice S. B. Stocking, who is reported to have been appointed chief clerk in the General Manager's office at Seattle, Wash.

**Capt. J. J. Murchison,** formerly master of the car ferry steamship *Prince Edward Island*, has been appointed dock master at Port Borden, P.E.I., in connection with the operation of the Canadian Government Railways' car ferry service between Cape Tormentine and Port Borden.

**James Yorston,** a well known builder of wooden ships, died at Pictou, N.S., recently, aged 70. He was a partner in J. & J. Yorston, who operated the marine railway, etc., at Pictou, and was also engaged in the fishing business. His son, L. Yorston, is now Manager, Pictou Marine Railway.

**F. J. Warren,** who has been appointed Division Freight and Passenger Agent, Canada Steamship Lines, Ltd., Winnipeg, was for several years in C.P.R. service as a freight claims investigator, and was subsequently Soliciting Freight Agent, Inland Lines, Ltd., and Canada Steamship Lines, Ltd., at Montreal, and since Apr., 1915, City Freight Agent for the latter company at Winnipeg.

**James Carruthers,** President, Canada Steamship Lines, Ltd., has offered to the British Government four aeroplanes for use on the western front. The British Air Board in accepting the gift expressed its warm appreciation of so generous a contribution. Mr. Carruthers had previously given three aeroplanes to the Canadian authorities.

**Capt. J. A. Murray,** harbor master, Quebec, Que., was one of the victims of the disastrous explosion at Halifax, N.S., Dec. 6, being there on special duty in connection with shipping affairs. Prior to his appointment as harbor master at Quebec, he was in C.P.R. service for many years, and for some time prior to her loss, was master of the company's s.s. *Empress of Ireland*. He was Lieutenant-Commander of the Royal Canadian Naval Volunteer Reserves, and also a Lieutenant, R.N.R.

**T. G. Mitchell,** one of Lloyd's surveyors at Vancouver, B.C., died there, suddenly, Dec. 8. He had lived in British Columbia for several years, going there about 35 years ago as chief engineer of the s.s. *Amelia*, owned by the People's Navigation Co., transferring to a similar position on the s.s. *Premier*, now s.s. *Charmer*. He was for some time in C.P.R. service on the B. C. coast vessels, and in 1902 superintended the construction of the s.s. *Princess Victoria* in Great Britain for the company. On his return to Canada he was appointed Lloyd's surveyor, which position he held until his death. Since the outbreak of war, he has also

acted as superintendent of construction under Lloyd's, for steel vessels under construction in the province for the British Government.

### Atlantic and Pacific Ocean Marine.

The Norwegian s.s. *Kristianiafjord*, which was wrecked off Cape Race a few months ago, is reported to have been completely broken up during a severe storm on Nov. 29.

The Nova Scotia schooner *Maple Leaf*, 251 tons, is reported to have been lost at sea. The captain and crew were rescued by a Russian schooner and transferred to a British vessel.

The Royal Mail Steam Packet Co. has denied the report that it intended abandoning the call at St. John N.B., with its vessels on the West Indies route. The s.s. *Caraquet*, which stranded at Trinidad recently, is being overhauled, and as soon as she is ready for service she will again be placed on the St. John route.

The France and Canada Steamship Co. during 1917 purchased fourteen U.S. schooners for general service. These are of various types, four, five and six masted, and have a total deadweight capacity of about 50,000 tons. The name and tonnage of each are as follows: *Camilla May* Page, 1,035 tons; *Carl F. Cressy*, 1,347; *Cora F. Cressy*, 3,748; *Dorothy Palmer*, 4,079; *Edward J. Lawrence*, 5,025; *Evelyn W. Hinkly*, 1,047; *Governor Brooks*, 3,942; *Jane Palmer*, 4,707; *Malcolm Baxter, Jr.*, 2,598; *Martha P. Small*, 3,267; *Oakley C. Curtiss*, 3,561; *Ruth E. Merrill*, 4,504; *Singleton Palmer*, 4,288; *Wyoming*, 5,950.

### Maritime Provinces and Newfoundland.

The ferry superintendent at St. John, N.B., stated to the city council, Dec. 4, that it cost \$27,000 more than the receipts, to operate the St. John ferry, during 1917.

The U.S. Government is reported to have purchased three of the Eastern Steamship Corporation's steamships for \$4,725,000, and in addition, to have chartered two others.

The operation of lights and fog alarms in the Bay of Fundy, on the south coast of New Brunswick, each of Quaco Head, will be discontinued from about Jan. 10 to about April 1, in each year, without any special notice being given.

The Russian s.s. *Edininie*, formerly the steam yacht *Cyprus*, which was damaged by an explosion recently, was sold by tender during December, as she lies at Sydney, N.S. Her dimensions are, length 262 ft., beam 28 ft., depth 27 ft., draft 12.14 ft., 1,600 gross tons. She is equipped with engine of 3000 h.p. driving twin screws.

Canada Steamship Lines, Ltd., has entered action in the Admiralty Court, Halifax, N.S., claiming \$200,000 for salvage and damages against the s.s. *North-ern King*. The claim covers damage incurred in collision and salvage services rendered to the vessel in Halifax harbor, Dec. 7, following the disastrous explosion of a munitions vessel there. The *North-ern King* is one of the steamships owned by the Great Lakes Transit Co., which was cut in two recently for passage through the Welland Canal, for ocean service.

The s.s. *Tuscarora* was reported, Dec. 26, to have been wrecked and lost, near



Cape Breton Island, N.S. She was built at Cleveland, Ohio, in 1890, was owned by the Lehigh Valley Transportation Co., and was one of a number of U. S. lake vessels to be cut in two for passage through the Welland Canal for ocean service. Her dimensions were, length 291 ft., breadth 40 ft., depth 22 ft.; tonnage, 2,386 gross, 1,679 register, and she was equipped with triple expansion engines with cylinders 24, 38 and 61 ins. diam. by 42 ins. stroke, 1,500 i.h.p. at 85 r.p.m.

### Province of Quebec Marine.

While proceeding from Montreal to Quebec, Dec. 3, a small drifter vessel was caught in the ice and jammed close to shore under the Quebec bridge on the Quebec side. It was feared that the vessel would be crushed. The five or six of the crew were removed from the vessel by a cage lowered from the bridge, to which they were hoisted safely. The vessel was cleared from the ice later in the day.

### Ontario and the Great Lakes.

The Montreal, Ottawa and Georgian Bay Canal Co. will apply at the next parliamentary session for an extension of time for commencing and completing the construction of canals as authorized by its act of incorporation, and for other purposes.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level for November, as follows: Superior, 602.46; Michigan and Huron, 581.16; St. Clair, 575.76; Erie, 572.97; Ontario 246.6. Compared with the average November levels for the past ten years, Superior 0.05 ft. below; Michigan and Huron 1.02 ft. above; Erie 1.26 ft. above, and Ontario 1.17 ft. above.

The United States Engineer Office has issued a notice to vessel masters, requiring that when vessels anchor in channels connecting the Great Lakes, they shall select for such anchorage deep water as near the bank as possible, leaving the largest practicable clear channel for the passage of other vessels. In no case shall they lie so as to endanger through traffic. This has special reference to anchorage near the head of St. Clair River, near Port Huron, Mich.

### British Columbia and Pacific Coast.

The Alaska Steamship Co.'s s.s. Mariposa, which was wrecked on Strait Island, about 50 miles west of Wrangell, Alaska, late in November, has been broken up during the severe weather experienced along the coast. Attempts at salvaging the vessel, which had a valuable cargo of gold and copper, have been abandoned.

The Grand Trunk Pacific Coast Steamship Co. will, according to press reports, keep its vessels on the northern route in service throughout the winter, on account of heavy traffic to Prince Rupert and Alaska ports. The s.s. Prince George was to be docked at Prince Rupert for a general overhaul at the end of December, and she will replace the s.s. Prince Rupert about the end of January, which in turn will be overhauled, also at Prince Rupert.

Canada West Coast Navigation Co.'s auxiliary powered schooner Margaret Haney, which sailed from Vancouver, May 1, 1917, for Bombay, with lumber,

completed the voyage in 85 days, on which arrangements were made with the owning company that she be retained for service in Indian waters. Recent advices state that on her maiden voyage, when approaching Bombay, she ran on a mud shoal, and after being released ran over a submerged rock and tore away part of her keel and rudder. Repairs were made at Bombay.

The car ferry for the Canadian Northern Ry.'s service between the Fraser River and Patricia Bay, Vancouver Island, which is under construction by the Davie Shipbuilding and Repair Co., Levis, Que., is expected to be completed and ready for operation in the spring. She has been designed with a capacity of 20 cars. The following are the chief dimensions: Length over all 308 ft., breadth 52 ft., depth 20½ ft.; tonnage approximate gross 5,000; net 3,000. Capacity no. 1 hold, 40,000 cub. ft., no. 2 hold 30,000 cub. ft., area of main deck 13,000 sq. ft. She will be equipped with four cylinder, triple expansion engines 2,200 i.h.p., supplied with steam by four Scotch boilers each 11½ ft. diam., at 175 lbs. working pressure.

The C.P.R. British Columbia Coast Service schedule is reported as being arranged for the winter. It is stated that the s.s. Princess Royal, which has been thoroughly overhauled, will be placed on the route from Vancouver to Prince Rupert, calling at way ports, including Rivers Inlet and Ocean Falls, replacing the steamships Princess Beatrice and Princess May, which have been dividing service on that route. Both of the latter vessels will, it is said, be laid up for two months for overhaul, after almost a year in continuous service. The s.s. Princess Victoria has been withdrawn from the triangular route, for her annual overhaul, and the service on that route will be continued by the steamships Princess Adelaide and Princess Charlotte. The night service between Victoria and Vancouver will, it is reported, be undertaken by the steamships Princess Beatrice and Princess Mary.

**Licensing Shipments for the Allies.**—An order has been issued that, provided shippers secure an export license from the Food Controller's office at Ottawa, shipments via U.S. ports may be sent forward without license from the War Trade Board at Washington, if consigned to Great Britain, France or Italy and their possessions and protectorates. Shippers must continue to use the U.S. customs carriers' manifest, but in duplicate instead of one copy only as heretofore, so that the U.S. collector of customs may send one copy to the War Board of Trade at Washington.

**Imperial Oil Ltd.** has been incorporated under the Dominion Companies Act, with \$50,000,000 and office at Toronto, to take over the business in Canada and Newfoundland, hitherto carried on by the Imperial Oil Co. Ltd. The Imperial Oil Co. has added considerably to its steamship, dock and other transportation facilities recently, five steel tank steamships having been built by the Collingwood Shipbuilding Co.

**The Ogdensburg Coal and Towing Co.,** Dominion Companies Act, with \$1,500,000 Ltd., has been incorporated under the capital and office at Montreal, to carry on a general coal, timber and merchandise business, and to own and operate steam and other vessels for the transportation of passengers and freight throughout Canada and elsewhere.

### The Halifax Steamship Collision and Explosion.

The terrible catastrophe at Halifax, N.S., on Dec. 6, has been dealt with at great length in the daily papers, but most of the matter published has been of a very fragmentary nature. The main facts are that on Dec. 6, the Cie Generale Transatlantique s.s. Mont Blanc, with explosives, inward bound for convoy, from New York, and the Norwegian s.s. Imo, outward bound with grain for Belgian relief purposes, collided in the mouth of the Narrows near Bedford Basin, Halifax harbor, causing a tremendous explosion, doing immense damage both on land and water, and causing the death of approximately 1,500 persons and injury to several thousands. The damage has been so great, that it has been practically impossible to obtain any reliable figures as to losses, either of lives or property, and so far as the loss of life is concerned, it may be taken for granted that the exact total of deaths will not be ascertained at any time. Various estimates have been made as to the cost of replacement of buildings and other property, these generally being in the neighborhood of \$40,000,000.

The s.s. Mont Blanc was a single screw steamship of 3,121 tons gross, 320 ft. long, 44 ft. beam and 15¼ ft. deep, and was built at Middlesbrough, Eng., in 1899. The s.s. Imo was built at Belfast, Ireland, in 1881, and was formerly the s.s. Runic, and owned by the White Star Line, being purchased a few years ago by the Southern Pacific Whaling Co., of Christiania, Norway. Her dimensions are, length 430 ft., beam 45 ft. 2 ins., depth 30¾ ft., tonnage 5,043 gross.

The s.s. Mont Blanc, A. Lamadoc, master, sailed from New York, with a cargo of gun cotton, benzol and t.n.t., under orders to proceed to Halifax to await convoy, and was being taken into Bedford Basin, under charge of a local pilot, Frank Mackay. The s.s. Imo left New York about Nov. 28 and was ordered to Halifax for examination, etc., and was outward bound in charge of pilot Wm. Haynes, who was killed by the explosion.

Apparently owing to mistaken signals, or from other causes, which are being enquired into, the vessels collided near pier 8, the Imo piercing the Mont Blanc and setting fire to the benzol cargo on deck. When it became clear that an explosion was inevitable, the machinery was stopped and the vessel abandoned by the crew. There was, however, a certain amount of way on the vessel, and she headed for pier 8 close to which the explosion occurred. The Imo was eventually beached on the Dartmouth shore.

An official enquiry was opened at Halifax, Dec. 13, before Justice Drysdale, Judge in Admiralty, with Capt. L. A. Demers, Dominion Wreck Commissioner, and Capt. Hawes, R.N., as nautical assessors. At the time of writing, Dec. 29, the enquiry is still proceeding, so that the matter will be more fully dealt with when judgment has been pronounced.

When the s.s. Imo started out on her voyage, which has ended so disastrously, she had just left a repair yard in Philadelphia, and was on her way down the river, when she was labelled by those undertaking the repairs, and was only overtaken by the use of a fast tug boat. She was eventually released on depositing a bond for \$11,000 pending settlement of the claims against her.

Particulars of the damage to the Canadian Government Railways property are given on another page of this issue.



## The White Pass and Yukon Railway's Navigation Operations.

The White Pass & Yukon Ry.'s report for the year ended June 30, 1917, which was presented at the annual meeting in London, Eng., on Dec. 17, embraced the accounts, etc., of the local companies forming the White Pass & Yukon Route for the year ended Dec. 31, 1916. Following are extracts from President F. C. Elliott's report on the River Division for 1916:—

Through navigation to Dawson was opened on the river at White Horse with the sailing of the Casca on June 5, and closed with the arrival of the Dawson and Nasutlin on Oct. 23. Through navigation to points below Dawson opened with the sailing of the Yukon from White Horse for Fairbanks on June 6, and closed with the sailing of the Alaska from Nenana Oct. 5 for White Horse, which she reached on Oct. 19.

In addition to the usual amount of work done on the boats to put them in proper condition for service, we constructed permanent ways at Atlin, for the purpose of hauling out and wintering the steamboat Scotia and the barge Atlin. Experience has shown the indavisiability and danger of wintering our steamboats in the water at Dawson. Hence the ways at Dawson were put in condition to receive barges, and arrangements were made with the Northern Light, Power & Coal Co. to secure the use of its ways, which were put in condition to receive steamboats.

The operating expenses of the River Division, between White Horse and Dawson, and Carcross and Atlin, show an increase of \$47,551.74. The principal items of increase are: Boat maintenance, \$32,373.87; boat service, \$2,563; boat supplies, \$5,652.46; longshoring, \$4,087.07.

The increase in maintenance account is due to extensive repairs to steamboats, Dawson, Canada, Nasutlin and Gleaner, and the repair work on the different shipyard plants. During last year there was a considerable increase in the cost of repair material, the material used in the White Horse shipyard last season costing approximately \$10,000 more than it would have cost in the previous season. The increase in boat service account is due to boats remaining in commission longer, also to the necessity of importing men to take the places of strikers. We had to pay the transportation of these men from the coast to White Horse and return. Boat supplies increase is due to cost of additional lifesaving equipment placed on all boats in accordance with the Canadian Government requirements, extra number of passengers carried, and increased cost of food stuffs and other commodities. The food supplies issued from the White Horse store cost approximately \$3,000 more than they would have cost in the previous season. Longshore increase is due to extra tonnage handled and also to strikes and labor disturbances at White Horse.

We were handicapped all season on account of shortage of good deck hands and firemen between White Horse and Dawson, as many of our regular men had gone to the front. We also experienced considerable trouble and delay through strikes of longshoremen and crews, but only once were we nearly at a standstill, namely, when the Dawson was without a crew at the time she was due to sail from White Horse. However, this difficulty was

overcome by a volunteer crew, consisting of our Superintendent Engineer and our Fuel Agent, who worked as firemen, and a number of citizens of White Horse, who acted as deck hands. While these troubles did not stop the movement of freight, they contributed to the increased cost of handling, especially the item of longshoring.

The tourist traffic during 1916 assumed proportions making it worthy of special note. The total revenue amounted to approximately \$102,000, which is about double that of 1915, and the latter up to that time was the best tourist year we had had. To meet this increased tourist business we purchased two second hand cars to be converted into parlor cars, thus giving us four parlor cars, and various changes were made in the accommodation on the steamboats Gleaner, White Horse and Casca. At Lake Atlin we were confronted with the utterly inadequate facilities for the accommodation of tourists. Consequently, we proceeded to construct a hotel. The plans were designed, materials purchased and shipped north, but owing to the late opening of navigation and low water, the ground was not broken for the hotel until June 10. However, it was completed ready for guests on July 15. The hotel and its management have been commended by everyone, and some have stayed longer than planned, and have declared their intention of returning for a whole summer's sojourn.

The car ferry steamship Leonard, which has been operated between the Quebec and Levis shores of the St. Lawrence River, since Sept. 1914, awaiting the completion of the Quebec Bridge, has been removed from that route, as it is no longer required there. The disposition of the vessel is under consideration by the Railways Department, and some reports state that it is probable she will be placed in operation on the Strait of Canso. She was built at Birkenhead, Eng., in 1914, her dimensions being, length 326 ft., beam 55 ft., mean draft 15 ft. Trains are carried on a tidal deck above the main deck on three tracks each 272 ft. long. The tidal deck rests on gunmetal nuts, working up and down on 10 vertical lifting screws on each side, supported on columns, and the lifting gear is arranged to lift the tidal deck at the rate of 1 ft. a minute when fully loaded, to a height of 18 ft., thus allowing trains to run on at any stage of the tide. There was considerable delay in the building of the vessel, and it was feared that the outbreak of war would prevent her from crossing the ocean, but though she did not leave England until after, she arrived on this side safely, Aug. 18, 1914, crossing under her own steam without incident.

Tide tables and information on currents for the eastern coasts of Canada including the river and gulf of St. Lawrence, the Atlantic Coast, the Bay of Fundy, and Northumberland and Cabot Straits, and for the Pacific Coast of Canada, including Fuca and Georgia Straits and the northern coasts, with data for slack water in the navigable passes and narrows, have been issued in two separate books by the Naval Service Departments tidal and current survey and will be mailed free on request to the department.

## Wreck Commissioner's Investigations and Judgments.

### Striking of s.s. Scandinavian.

An investigation was concluded at Montreal, Dec. 1, into the striking of a submerged obstacle by Canadian Pacific Ocean Services' s.s. Scandinavian, in the St. Lawrence River, Nov. 17. The court consisted of Capt. L. A. Demers, Dominion Wreck Commissioner, and Capt. F. Nash and C. Lapierre, nautical assessors. After hearing the evidence, which the court considered as of the greatest importance as regards the reputation of Canada's fairway from Quebec to Montreal the pilot, master and officers of the vessel were exonerated from all blame for the casualty. The evidence showed that there was a depth of 30 or 31 ft. of water in the channel, and that the vessel was drawing 24 ft. 8 ins. aft. The anchors mooring the buoys are of the stockless type, 3 to 4 ft. high from the bottom. The Superintending Engineer of the Ship Channel stated that he gave instructions to sweep the place or part of the river between buoys 90Q and 92Q, where the vessel is stated to have struck. The sweeper detector was laid up, but a scow with roller appliance was sent on, under the supervision of two engineers, and in tow of the tug Frontenac. When they arrived at the spot it was found that owing to the fracture of a part of the machinery no work could be performed. Another scow was requisitioned and the first dragging was made just one week after the casualty, and continued for two days until the scow sprang a leak. Some doubt was created as to the effectiveness of the endeavor to sweep the channel, and it was admitted that owing to the ice causing the scow to leak, the staff had to return without completing the work with the thoroughness the occasion demanded. The court commented on the unreliable and unsatisfactory manner in which, according to the evidence, the sweeping was done, and considered it elementary for shipping men, owners, agents and underwriters, to trust that throughout the season, up to the time the last vessel had left the St. Lawrence, immediate help would be at hand. The attempt to assure the public that the channel was clear, or not clear, was not conclusive. An evidence of real effective effort to sweep the channel from bank to bank, would have gone far toward helping the court to arrive at a solution of the case and to offset the evil consequences of a report to Lloyd's, and broadcast, to the effect that a boulder was struck in the ship channel late in the season, practically at the close, with a dozen or more vessels still to pass. In conclusion, the court stated that the evidence was there, and in the face of it, it could not arrive at any other decision than to accept the preponderance of the testimony of the Scandinavian officers, and exonerate them from all blame, and to add that the nature of the obstacle which caused the damage to the hull had not been revealed nor ascertained.

Canadian Marine and Commercial Co., Ltd., has been incorporated under the Dominion Companies Act, with \$500,000 authorized capital and office at Montreal, to carry on business as steamship agents, ship brokers and forwarders, and as agents for placing and procuring marine insurance, etc., also to design, build, own and operate steam and other vessels, wharves, docks and other transportation facilities.



### Launch of the s.s. Porsanger at Montreal.

A steel freight steamship was launched by Canadian Vickers, Ltd., at Montreal, Nov. 29, and was christened Porsanger, by Mrs. W. H. Lynch, wife of the company's Managing Director. The vessel was launched stern on, instead of the sideway launch customary in Canadian waters. She has been built under Government permit for Norwegian owners, and classed 100 A1 at Lloyd's and Det Norske Veritas. Her dimensions are, length over all 394½ ft., breadth extreme 49¼ ft., depth moulded 30 ft.; dead-weight tonnage 7,000; gross tonnage, 4,670; load draft, 24 ft. The hull is fitted with double bottom fore and aft, subdivided into 14 separate water tight compartments, with total water ballast capacity of 1,630 tons. The officers' accommodation is in deck houses in the bridge, and the crew are berthed in the poop deck in separate two-berth rooms. All



Launching of s.s. Porsanger at Montreal, Nov. 29, 1917.

accommodation is large and roomy and well ventilated and lighted. The vessel is provided throughout with Chadburn's ship telegraphs, manufactured by Taylor and Arnold, Ltd., Montreal. The propelling machinery consists of triple expansion engines, 2 main boilers and large donkey boiler. There are 5 large cargo hatches, 11 steam winches, powerful steam windlass, steam and hand steering gear, 2 steel masts, the topmasts being made telescopic to suit bridges across the Manchester (Eng.) ship canal. It is stated that the work of equipping the hull will not be proceeded with during the winter, owing to the difficulty of working in the open, but it is expected that the vessel will be ready for service by May.

In launching vessels in Great Britain, there is a custom of presenting the sponsor with some article of personal jewelry, but the lady who acted in the present case, did so on the understanding that this would be a donation for the Y.M.C.A. Hut Fund (France), which was made \$750.

### United States Government Shipbuilding, Etc.

The following table shows the vessels under contract and pending contract, and vessels which had been requisitioned by the Emergency Fleet Corporation, U. S. Shipping Board, up to Nov. 30.

Type of vessels.	No of vessels	deadweight capacity
Wood . . . . .	375	1,330,900
Composite . . . . .	58	207,000
Steel . . . . .	451	3,186,400
Total contracted for . . . . .	884	4,724,300
Contracts pending . . . . .	99	610,000
Total . . . . .	983	5,334,300
Total requisitioned (all types)*. . . . .	426	3,029,508
Grand total . . . . .	1,409	8,363,808

\* This total includes requisitioned vessels completed and released—33 vessels; 257,575 tons, that is requisitioned vessels completed, accepted by the corporation and turned over to the U.S. Shipping Board for operation; requisitioned vessels completed and accepted, but later reconveyed to former owners prior to completion and acceptance by the corporation.

Chairman Hurley, of the U. S. Shipping

### Loss of the Dominion Government s.s. Simcoe.

The Dominion Government s.s. Simcoe, which sailed from Quebec about the beginning of November, to remove buoys from the lower St. Lawrence, was lost with the entire crew, about Dec. 6., during a severe storm. A wireless message was received from Fame Point, Dec. 5, that the vessel was in distress and sinking, after which no further message was received. Early on Dec. 5, a message had been received that she had called at Bird Rock, Magdalen Islands, and as she had completed her buoy work in that neighborhood, was bound for Prince Edward Island.

She was built at Newcastle upon Tyne, Eng., in 1909, and was designed and built specially for lighthouse and buoy work. She was classed 100 A1 at Lloyd's for Canadian lake service, and was constructed with water ballast and double bottom fore and aft, and was capable of being navigated through solid ice 12 in. thick. The hull was designed with straight stem and elliptical stern, with seven water tight bulkheads, and two steel masts, the forward one carrying heavy derrick and gear for buoy service, capable of lifting 27 tons. She carried, when built, a steam launch, 2 surf boats and 2 dinghys.

The s.s. Turbinia, owned by Canada Steamship Lines, Ltd., is reported to have been sold to French interests for salt water navigation, for \$300,000. She was built at Newcastle upon Tyne, Eng., in 1904 and is stated to have cost \$220,000. She was the first steamer of the turbine type to be operated on the Canadian lakes, also the last. The operation of turbine driven steamships on the Great Lakes cannot be a success, as the benefits of the use of the turbine are apparent only in cases of high speed and long distances. By operating turbines at the low speeds necessary for safe navigation on the lakes, and on the comparatively short distances run, there is a large waste of fuel, and useless wear and tear. It has been proved that, up to the present at any rate, for general lake navigation, with its attendant manoeuvring in and out of harbors, and for canal traffic the reciprocating engine is the best. The Turbinia, since arriving on the lakes, has passed through several hands, and for some time, was operated in the West Indies service under charter. As a financial venture on the lakes, she was not a success.

The Lake Carriers' Association, acting on the approval of members holding 85% of the tonnage represented in the association, has voted for the mobilization of the Great Lakes steamships next season, for its operation under a single management, on a similar plan to that already adopted by the railways. A committee of management has been selected, consisting of H. Coulby, President, Pittsburg Steamship Co., Cleveland; J. S. Ashley, Manager, Hanna & Co., Cleveland; H. S. Wilkinson, Manager, Great Lakes Steamship Co., Syracuse; C. D. Dyer, Vice President, Shenango Steamship Co., Pittsburg; and C. L. Hutchinson, Manager, Pioneer Steamship Co., Cleveland.

The Coastwise Steamship and Barge Co. has purchased the four masted schooner Coquitlam City, which has been converted into a barge. She was the first vessel to be built by the Coquitlam Shipbuilding and Marine Railway Co., at Coquitlam in 1913.

Board, in testifying before the Senate investigating committee in Washington, Dec. 1, read a statement showing among other things, 1,427 ships of 8,573,108 deadweight tons under construction, and contract; 74 new shipyards established in the U. S. since Jan. 1, 1917; 149,270 workmen on merchant ships on Dec. 8, an increase of 45.2% in nine weeks.

Chas. Piez, of Chicago, has been appointed General Manager, Emergency Fleet Corporation, U. S. Shipping Board, succeeding Rear Admiral A. R. Harris, who resigned after having only occupied the position a few weeks in succession to Rear Admiral W. A. Capps. Naval Constructor, U.S.N., who resigned on account of ill health. J. O. Heyworth, M.Am.Can.Soc.C.E., general contractor, Chicago, and President of the International Transit Co., of Salt Ste. Marie, Ont., has been appointed in full charge of wooden steamship building and Chas. Day has been appointed Manager of the Production Department.



## Steamship Building in Canada for British Government and for Norwegian Orders.

Canadian Railway and Marine World has been favored with the following official information as to orders for steamships to be built in Canada placed by the Imperial Munitions Board at Ottawa for the British Government.

Up to Dec. 3, 1917, the Board has ordered 44 steel steamships, of which 4 had been delivered. The individual carrying capacity of these vessels is from 1,800 tons to 8,800 tons d.w. each. The total carrying capacity of the 44 is 213,000 tons.

The total number of wooden steamships ordered by the board up to Dec. 3, 1917, was 46, of which 27 are being built in British Columbia, and 19 in Eastern Canada. The individual carrying capacity of these wooden steamships is 2,500 tons d. w. each. The total carrying capacity of 46 is 115,000 tons.

The total number of steamships of all classes ordered by the board is 90, and the grand total carrying capacity of all steamships ordered is 328,600 tons.

The steel steamships are being built at New Glasgow, N.S.; Montreal, Que.; Toronto, Welland, Midland, Collingwood and Port Arthur, Ont.; Vancouver and North Vancouver, B.C.

The wooden steamships are being built at Liverpool, N.S.; St. John, N.B.; Isle of Orleans, Quebec, Three Rivers and Cote St. Paul (Montreal), Que.; Toronto, and Fort William, Ont.; Coquitlam, New Westminster, Vancouver North Vancouver and Victoria, B.C.

In addition to the above mentioned steamships ordered by the Imperial Munitions Board, 22 steel steamships, of 3,500 ton d.w. capacity each, have been ordered by outside companies for Norwegian account, with a total tonnage of 77,000 tons, which, in addition to the 328,600 tons ordered by the board, makes a grand total under contract in Canada of 405,600 tons. The money value of this total tonnage exceeds \$80,000,000.

A full description and plans of the hulls of the standard wooden steamships are given on another page of this issue.

**Water Transport for United States Mails:**—The U. S. Post Office Department has established coastwise parcel post water routes, primarily to facilitate service for the various army cantonnments, which will operate to relieve the war time railway congestion and expedite service for the general public. In the present congested condition of transportation, practically as prompt service is to be obtained by water routes to certain points as by rail, and the railways may by that means be considerably relieved. Steamship routes for parcel post have been established from Boston to Norfolk, and Savannah; New York to Norfolk, Charleston, Jacksonville, Savannah, New Orleans and Galveston; Philadelphia to Savannah and Jacksonville, Baltimore to Savannah and Jacksonville.

**Improvement in sea transportation** was discussed at the London, Eng., Chamber of Commerce, Dec. 5, when Lord Dabernon emphasized the need of bigger ships of great speed after the war. He suggested the government should start the provision of big harbors. About \$20,000,000 would provide for vessels of 38 ft. draft at practically all the leading harbors from Great Britain to the furthest dominions.

## Shipbuilding in the United Kingdom.

Recent statements in the British House of Commons show that the number and gross tonnage of vessels built in the United Kingdom for British firms during the years from 1913 to, and including, the first half of 1917, are as follows: 1913, 678 vessels, 1,406,415 tons; 1914, 682 vessels, 1,326,589 tons; 1915, 377 vessels, 76,530 tons; 1916, 312 vessels, 527,824 tons; 1917 (6 months), 211 vessels, 629,850 tons.

Up to Oct. 25, 1917, five of the standardized type of steamships had been put into service, and one had been lost. It was expected that 18 more of these vessels would be in service between Oct. 25 and Dec. 31. On the former date there were 1,000,000 tons of this type of vessel under construction in the United Kingdom.

Three new national shipyards are under construction on the Severn River, and it is expected that the first keels will be laid there early this year, and that the vessels so built will be more highly stan-

dardized than any attempted hitherto. A great deal of the steel work will be done in bridge yards, and a considerable part of the labor will be performed by prisoners of war and unskilled help. These yards will provide 34 shipbuilding berths and the approximate cost will be £3,887,000.

The First Lord of the Admiralty stated recently that in 1913, Great Britain launched 2,282,000 tons of shipping of which 1,920,000 tons was merchant shipping. This was the highest output in any one year, and, he continued, if the output for December was as good as that in November, the tonnage launched in 1917 would reach that of 1913.

Regarding the salvaging and repairing of torpedoed vessels, it was announced that since June, only three vessels torpedoed in home waters had been abandoned, and there was only one which it had been decided not to repair for the present. In June, 27% of the total salved tonnage was under repair, and early in December, 80% were being put into condition for further service. Since August repairs in dry docks had increased 48%, and repairs afloat 45%.

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during December, 1917.

		Eastbound.			
ARTICLES.		Can. Canal.	U.S. Canal.	Total.	
Flour . . . . .	Barrels	116,800	763,890	880,690	
Wheat . . . . .	Bushels	4,439,102	13,985,084	18,424,186	
Grain . . . . .	Bushels	1,362,550	5,646,536	7,009,086	
Copper . . . . .	Short tons		2,585	2,585	
Iron Ore . . . . .	Short tons	45,696	1,141,291	1,186,987	
Pig Iron . . . . .	Short tons				
Lumber . . . . .	M. ft. B. M.		2,271	2,271	
General Merchandise . . . . .	Short tons	10,213	3,675	13,888	
Passengers . . . . .	Number	19	3	22	
		Westbound.			
Flour . . . . .	Barrels				
Grain . . . . .	Bushels				
Coal, hard . . . . .	Short tons		51,741	51,741	
Coal, soft . . . . .	Short tons		495,685	495,685	
Iron Ore . . . . .	Short tons				
Manufactured Iron . . . . .	Short tons	400		400	
Salt . . . . .	Barrels				
General Merchandise . . . . .	Short tons	10,163	9,767	19,930	
Passengers . . . . .	Number	8		8	
		Summary.			
Vessel passages . . . . .	Number	120	460	580	
Registered Tonnage . . . . .	Net	217,500	1,365,260	1,582,760	
Freight—					
Eastbound . . . . .	Short tons	224,854	1,767,528	1,992,382	
Westbound . . . . .	Short tons	10,563	557,193	567,756	
Total Freight . . . . .	Short tons	235,417	2,324,721	2,560,138	

## STATEMENT FOR 1917.

		Eastbound.	Westbound.	Summary.
Flour . . . . .	Barrels	3,344,438	5,105,511	8,449,949
Wheat . . . . .	Bushels	65,148,093	120,751,356	185,899,449
Grain . . . . .	Bushels	18,369,851	49,045,944	67,415,795
Copper . . . . .	Short tons	8,624	110,188	118,812
Iron Ore . . . . .	Short tons	11,107,205	50,201,456	61,308,661
Pig Iron . . . . .	Short tons	10,624	10,624	21,248
Lumber . . . . .	M. ft. B. M.	8,558	342,051	350,609
General merchandise . . . . .	Short tons	68,635	196,203	264,838
Passengers . . . . .	Number	12,541	6,339	18,880
		Westbound.		
Flour . . . . .	Barrels	10	80	90
Grain . . . . .	Bushels		8,185	8,185
Coal, hard . . . . .	Short tons	172,750	2,389,449	2,562,199
Coal, soft . . . . .	Short tons	1,088,087	14,648,567	15,736,654
Iron Ore . . . . .	Short tons	18,563	46,866	65,429
Manufactured Iron . . . . .	Short tons	13,145	78,313	91,458
Salt . . . . .	Barrels	117,229	452,727	569,956
General Merchandise . . . . .	Short tons	300,789	926,087	1,226,876
Passengers . . . . .	Number	13,808	5,651	19,459
		Summary.		
Vessel passages . . . . .	Number	5,349	17,536	22,885
Registered Tonnage . . . . .	Net	11,893,426	53,413,807	65,307,233
Freight—				
Eastbound . . . . .	Short tons	13,841,966	56,204,519	70,046,485
Westbound . . . . .	Short tons	1,610,082	18,157,331	19,767,413
Total Freight . . . . .	Short tons	15,452,048	74,361,850	89,813,898

The Canadian canal was opened April 25 and closed Dec. 17, 1917, season 237 days.

The U.S. canal was opened April 24 and closed Dec. 17, 1917, season 238 days.



### Proposed New Ferry Service for Detroit River.

The Windsor, Ont., City Council Dec. 14 consented to the granting of a patent for a water lot at the foot of Brock St., to be used as a landing for a new ferry line between Windsor and Detroit. The application was made by C. Miller, Barrister, of Toronto, on behalf of a syndicate said to be working in connection with the G.T.R. The application was granted with the stipulation that the property be used only for an international ferry, and when it ceases to be used for that purpose it is to be conveyed to the City of Windsor. If the syndicate fails to carry out its plans within two years the water lot is to be handed over to the city. There is a protective clause that the city is to take possession if any attempt be made to transfer the rights to the Detroit and Windsor Ferry Co. It was stated that the syndicate intends to expend from \$500,000 to \$1,000,000 in the erection of buildings, and in providing double ended ferry boats, but there is no definite information in this connection.

### Telegraph, Telephone and Cable Matters.

C. A. Radford has been appointed chief operator, Grand Trunk Pacific Telegraph Co., Edmonton, Alta.

A Vogel has been appointed city manager, Grand Trunk Pacific Telegraph Co., Calgary, Alta., vice G. Moore, resigned.

The British Columbia Telephone Co. is laying submarine telephone cables in False Creek across the draw span of the Connaught bridge, Vancouver.

J. Stevens has been appointed acting city manager, Grand Trunk Pacific Telegraph Co., Saskatoon, Sask., vice J. E. Grace, transferred to Winnipeg.

J. E. Grace, heretofore city manager, Grand Trunk Pacific Telegraph Co., Saskatoon, Sask., has been appointed city manager, Winnipeg, vice R. M. Hicks resigned.

E. E. Hiscock, heretofore electrical inspector, Grand Trunk Pacific Telegraph Co., has been appointed Electrical Engineer, Central Division, Winnipeg, reporting to the Division Superintendent.

The Great North Western Telegraph Co. has opened offices at Alderdale, Ont., Galahad, Heisler and Lyalto, Alta., and has closed its offices at St. Ulric, Riviere Blanche, Que., and Beaumaris and Mowat, Ont.

J. O. Pilon has been appointed city manager, Grand Trunk Pacific Telegraph Co., Edmonton, Alta., vice R. M. MacMillan, whose appointment as Division Superintendent at Winnipeg, was announced in our last issue.

The Western Union Telegraph Co.'s property along the Great Northern Ry. right of way between St. Paul, Minn., and Seattle, Wash., is reported to have been taken over by the G.N.R., thus cancelling the operating contract between the companies. The property is valued at about \$2,000,000.

Robert MacDonald MacMillan, whose appointment as Division Superintendent, Grand Trunk Pacific Ry. Telegraphs, Winnipeg, was announced in our last issue, was born at Cape George, N.S., Oct. 17, 1887, and entered telegraph service in Mar. 1904, since when he has been, to May, 1906, messenger and clerk; May,

1906 to Apr. 1907 operator; Apr. 1907 to June 1910, city manager, Western Union Telegraph Co., Sydney, N.S.; June 1910 to Sept. 1911, assistant manager, same company, Halifax, N.S.; Sept. 1911 to Aug. 1912, operator, C.P.R. Telegraphs, Winnipeg; Aug. 1912 to Jan. 1913, night manager, Grand Trunk Pacific Ry. Telegraphs, Winnipeg; Jan. 1913 to Mar. 1914, graphs, Winnipeg; Jan. 1913 to Mar. 1914, city manager, same company, Regina, Sask.; Mar. to Nov. 1914, city manager, same company, Calgary, Alta.; Nov. 1914 to Nov. 1917, city manager, same company, Edmonton, Alta.

### Among the Express Companies.

The Canadian Ex. Co. has opened offices at Gray, Estlin and Quinton, Sask., and Skagway, Alaska.

The Dominion Ex. Co. has opened offices at Clarenceville, Henryville, Noyan Jct., and Sabrevois, Que.

H. E. Race, heretofore correspondent, Canadian Northern Ex. Co., Winnipeg, has been appointed agent at Humbolt, Sask., vice W. R. Russell, transferred.

The Board of Railway Commissioners have approved a Northern Ex. Co.'s by-law authorizing E. W. Bennett, Traffic Superintendent, St. Paul, Minn., to file tariffs for the company in Canada. The Northern Pacific Ry. Commences operating jointly with the Great Northern Ry., over the line between Sumas, Wash., and Vancouver, B.C., and the Northern and Great Northern Ex. Co.'s will also be operated over the same territory, in connection therewith.

The Interstate Commerce Commission held a hearing, Dec. 7, on the application of express companies to file tariffs providing for increased express rates on all classes of express matter, of 10%, between all points in the U.S. and between points in the U.S. and points in adjacent countries. Amongst the companies associated with the application are, the Dominion, Canadian and Canadian Northern Ex. Cos., the Halifax and South Western Ry. Express Department, and the Newfoundland Ex. Co.

The Malahat Motor-Ship Co., Ltd., and The Ship Esquimalt Co., Ltd., which were incorporated during 1917, under the British Columbia Companies Act, with offices at Vancouver, are being wound up voluntarily, with Knox Walkem, Vancouver, as liquidator. The companies were subsidiaries of H. W. Brown & Co., Ltd., with H. W. Brown, General Manager, Canada West Coast Navigation Co., Ltd., as Managing Director. The companies owned the auxiliary powered schooners Malahat and Esquimalt, respectively, which, on completion, were placed under the management of Canada West Coast Navigation Co., Ltd. The latter vessel has since been reported as sold to French interests.

The International Mercantile Marine Co. has declared a cash dividend of \$10 a share on the preferred stock, against an accumulated dividend of 82%. It is announced that the directors consider any plan for funding the accumulated dividends inexpedient for the present.

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### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Commercial Acetylene Welding Co., Inc., has removed its Toronto office to 18 Toronto St.

Lyman Tube & Supply Co., Ltd.—R. Bruce Bennett has been appointed acting manager of the company's Toronto office, succeeding A. Lorne Flaws, who has received a commission as second lieutenant in the Royal Flying Corps.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Association for National Defence, W. M. Neal, General Secretary, 263 St. James St., Montreal.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Canadian Society of Civil Engineers—F. S. Keith, 176 Mansfield St., Montreal.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—C. E. Blaney, 2337 Third Ave. West, Vancouver, B.C.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

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One 2-6-0

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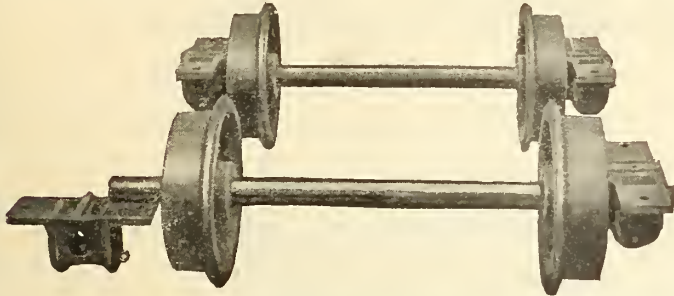
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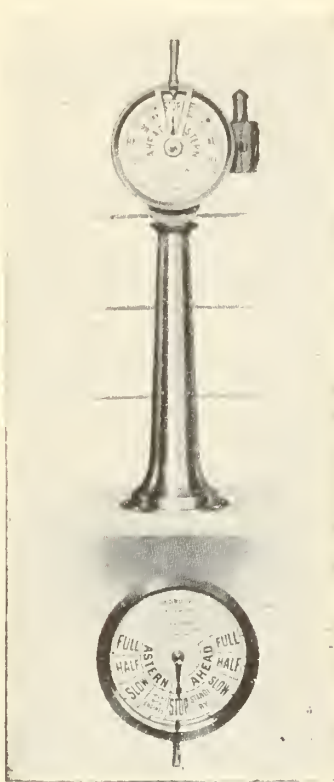
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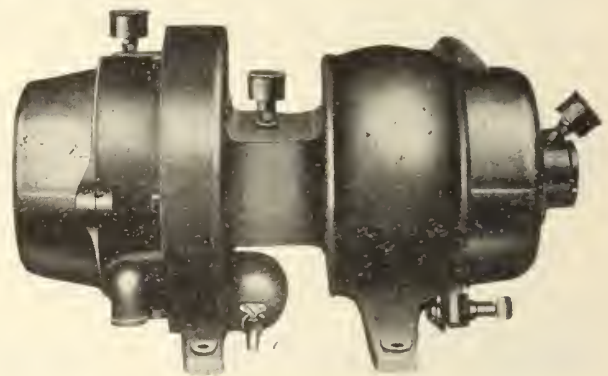
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These foundations are constructed of steel box girders reinforced within by closely fitting yellow pine blocks previously subjected to an 8-lb. treatment of Grade 1 Creosote Oil. All voids are then filled with pitch and the bottom plates riveted on. The pitch and creosote prolong the life of the blocks and the interior of the steel girders indefinitely. The blocks not only serve as fillers, but they aid in transferring the track loads directly to the ballast. The girders are built strong enough to sustain the heaviest locomotives over a span of 6 feet unsupported by the ballast, without affecting smooth running over the crossing.

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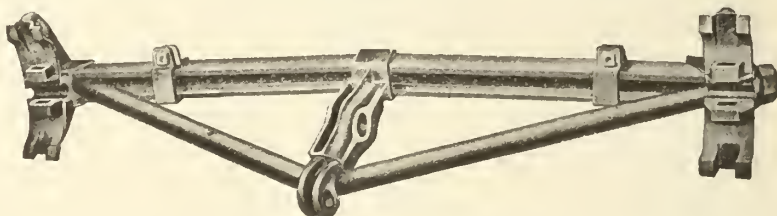
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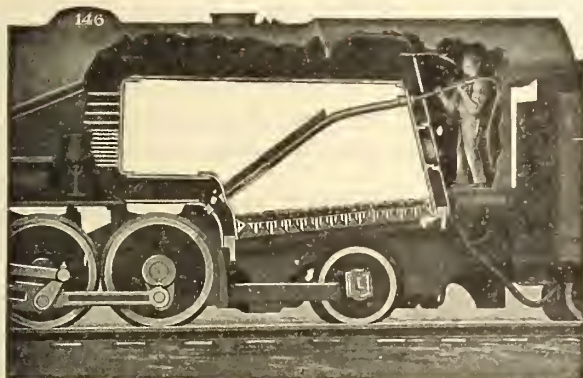
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## Intercolonial Railway

## Prince Edward Island Ry.

	Mileage
1872 First through train between St. John and Halifax.....	274
1880 Levis, St. John, Halifax, Mulgrave .....	1,039
1898 Montreal, St. John, Halifax, The Sydneys .....	1,526

Passengers Carried	Tons Carried
1877 - - 707,384	1877 - - 449,685
1897 - - 1,633,188	1897 - - 1,348,179
1916 - - 5,859,482	1916 - - 10,352,622

Gross Earnings	Employees
1877 - \$1,272,506.00	1877 - - 4,462
1897 - 3,019,471.00	1897 - - 5,600
1916 - 21,374,697.00	1916 - - 19,791

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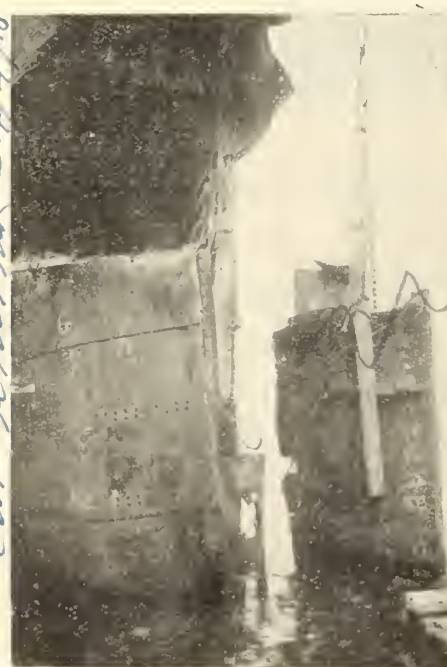
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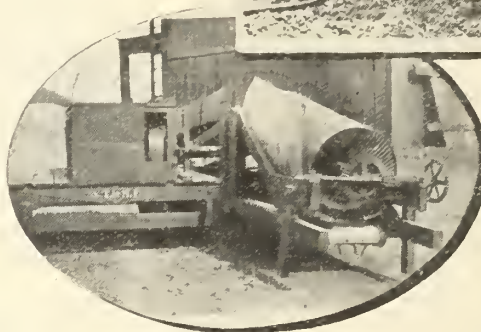
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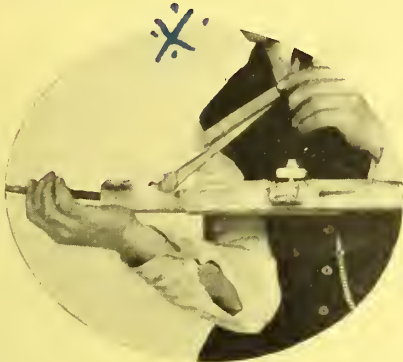
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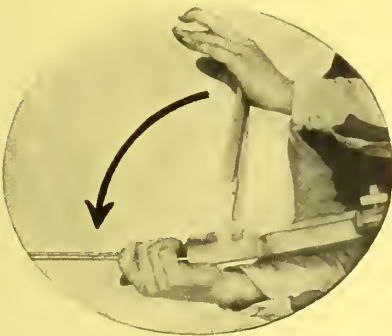


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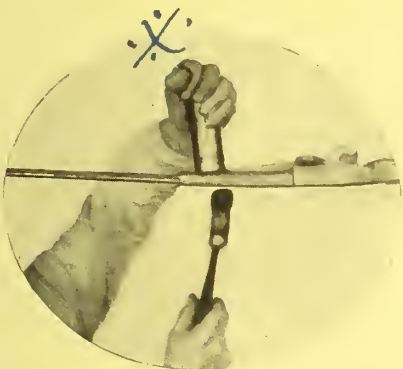
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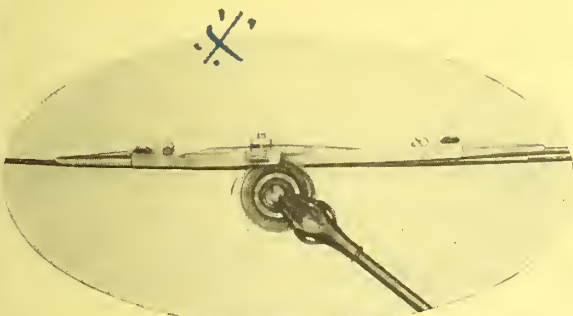
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*Catalog No. 16*

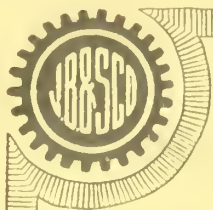
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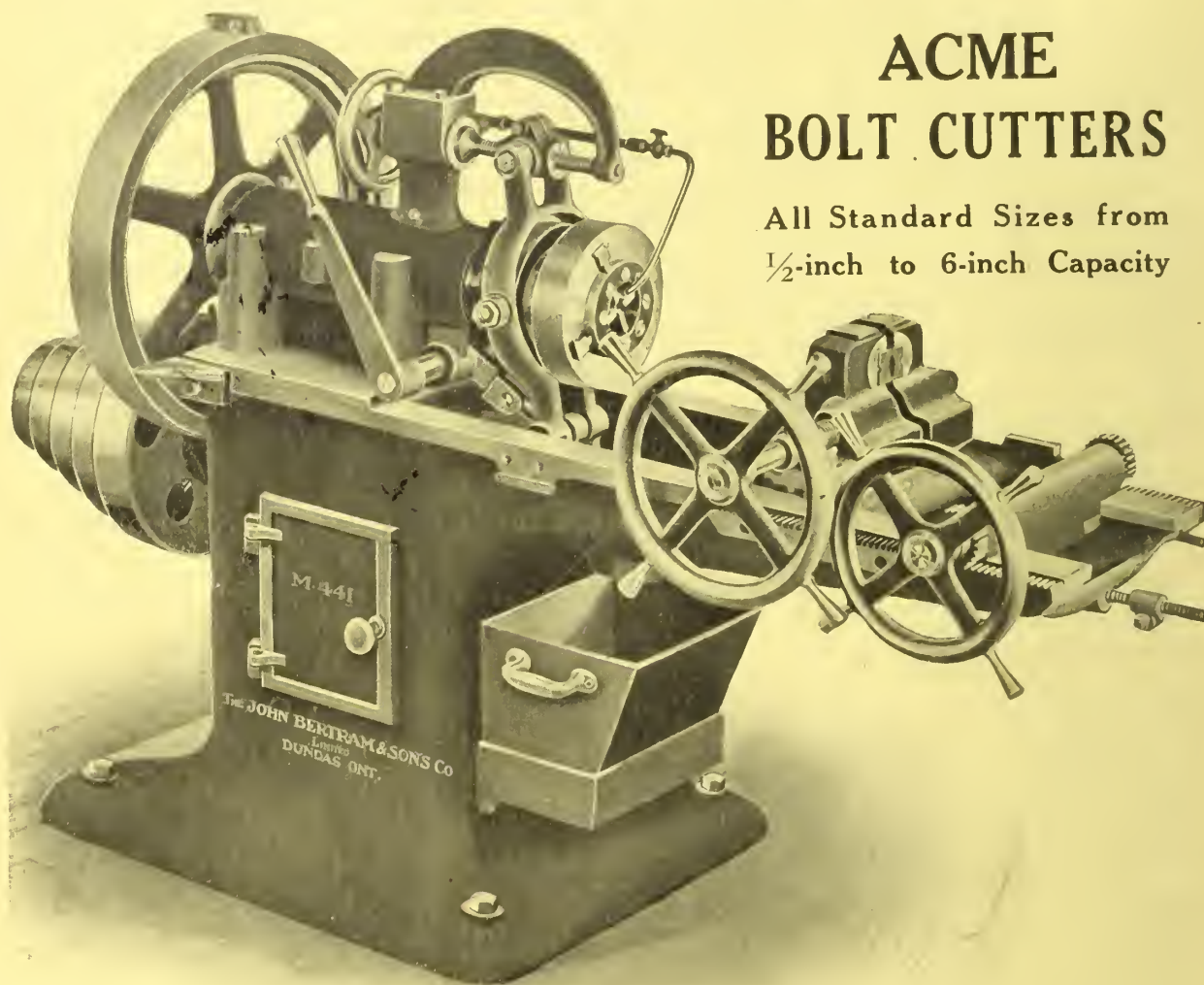




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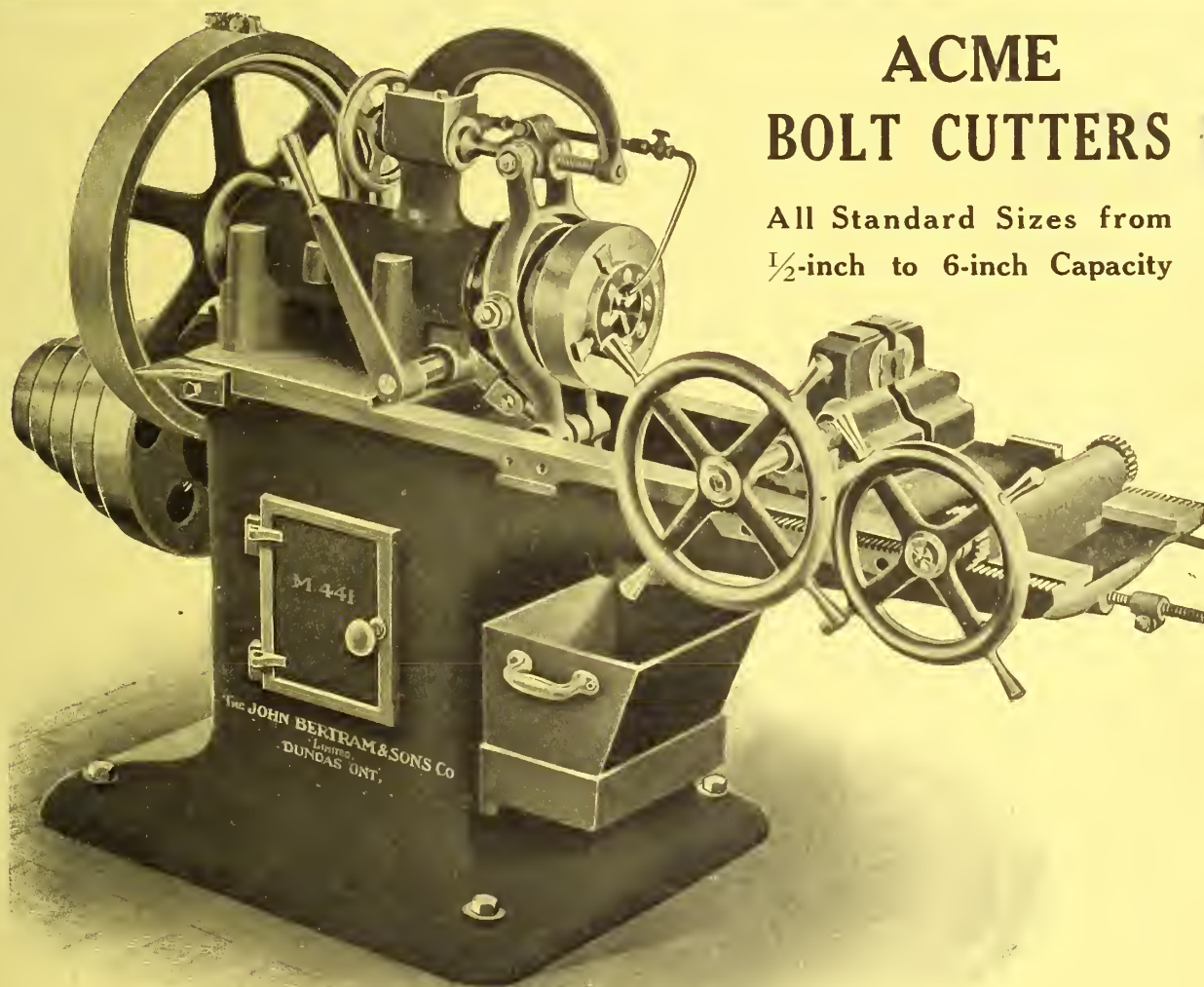
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ESTABLISHED 1898.

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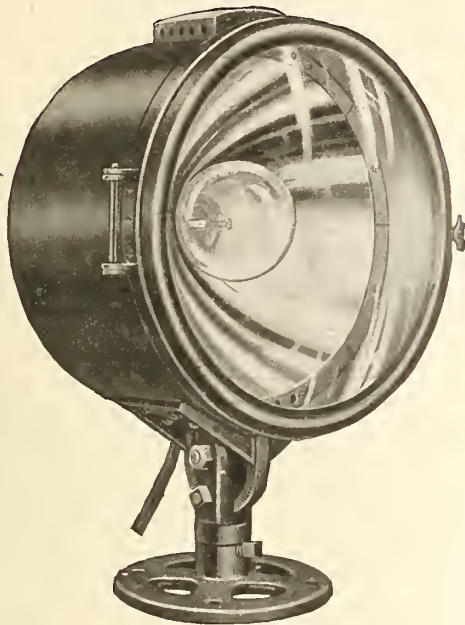
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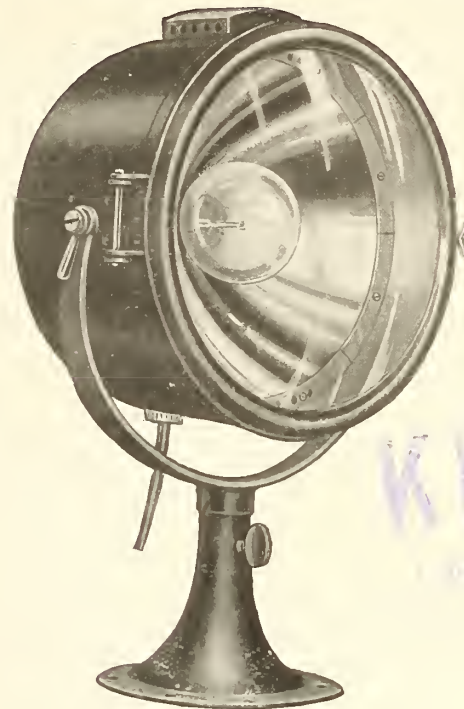
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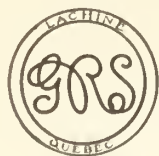
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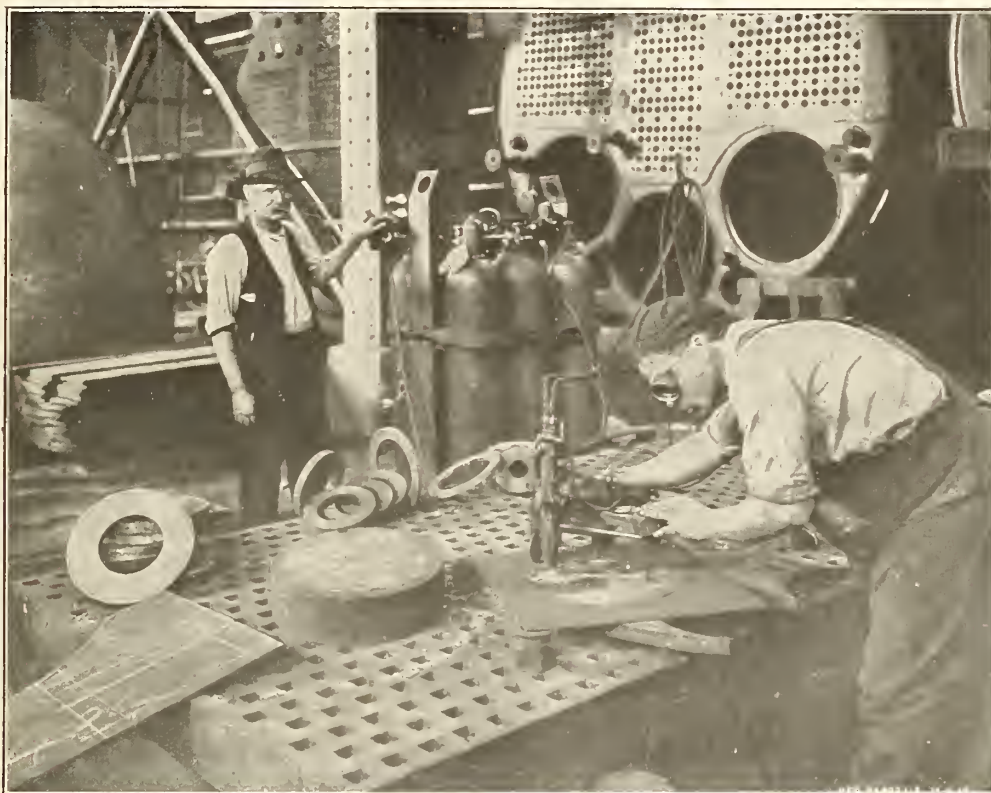
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Canadian Representative — Robert McVicar, 603 Shaughnessy  
Bldg., Montreal, Que.



## The Value of Oxy-Acetylene And Davis-Bournonville Apparatus

has never been so fully demonstrated as during the past year of government preparations and demands upon the foundries, steel mills, munition plants, and the entire metal-working industry, and particularly in the great shipbuilding program.



The Radiagraph, an exclusive Davis-Bournonville development for mechanical cutting with the Oxy-Acetylene or Oxy-Hydrogen flame, in the New York Shipbuilding yard, being used for circular cutting of steel plate. Note the true and finished cut and the thicknesses of the several pieces.—Photo by New York Shipbuilding Corp.

Exclusive developments in mechanical cutting and welding with Oxy-Acetylene and Oxy-Hydrogen have been of invaluable assistance to metal workers, coupled with highest efficiency in results and lowest operating cost. The Radiagraph cuts from  $\frac{1}{2}$ -in. to 20-in. steel plate, in straight lines or circles. The Oxygraph cuts in any direction, according to pattern or drawing, along straight lines, curves or sharp angles. Speed from 3 to 18 inches per minute according to thickness.

"Davis Apparatus" has been continuously and effectively developed from the time the company brought the positive, independent pressure system of oxy-acetylene welding and cutting to America ten years ago, and is backed by the longest practical experience, greatest development and widest application, providing portable hand welding and cutting outfits or the most complete installations with acetylene and oxygen and hydrogen producing and compressing plants.

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**Carter Welding Co., Toronto, Ont.**

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They provide smooth running over crossings, practically eliminate bolt breakage, prevent rail creepage, have larger tamping area than wooden ties and simplify crossing maintenance.

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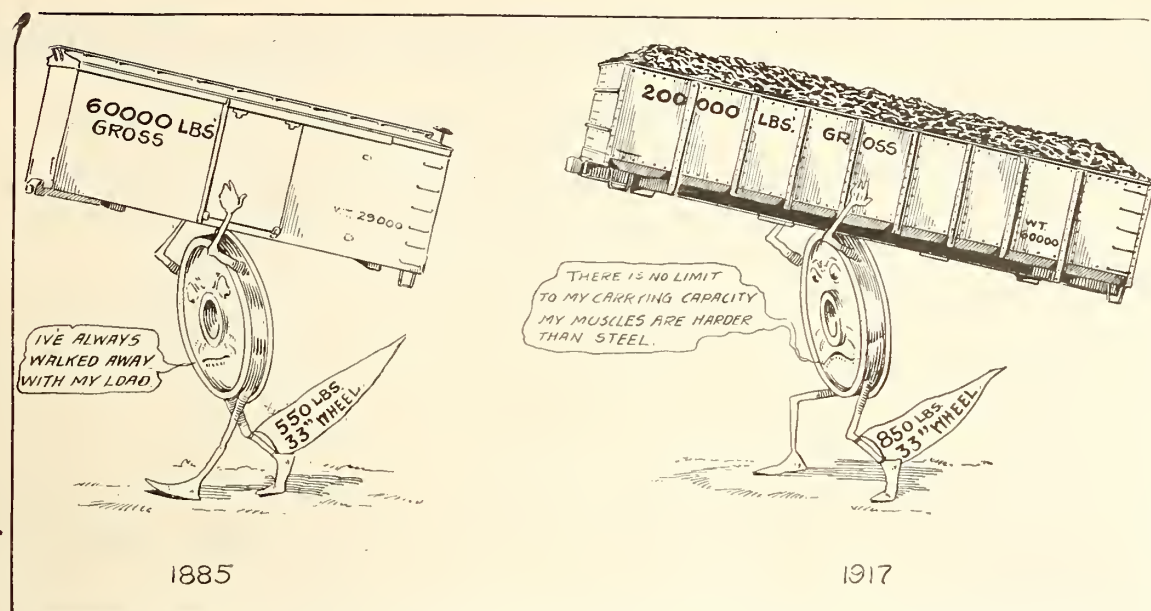
Crossing of The Lake Shore & Michigan Southern Ry. and The Cleveland Southwestern & Columbus Ry. at Oberlin, Ohio.

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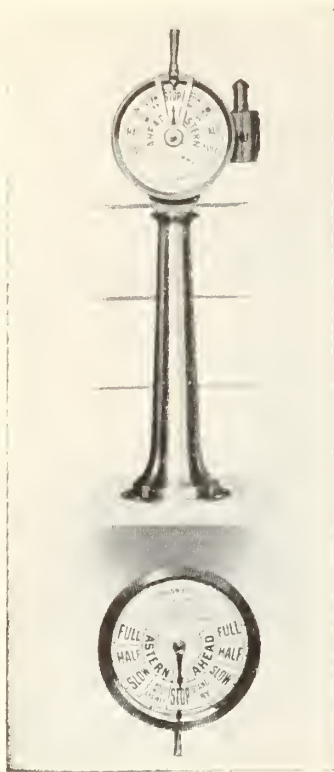
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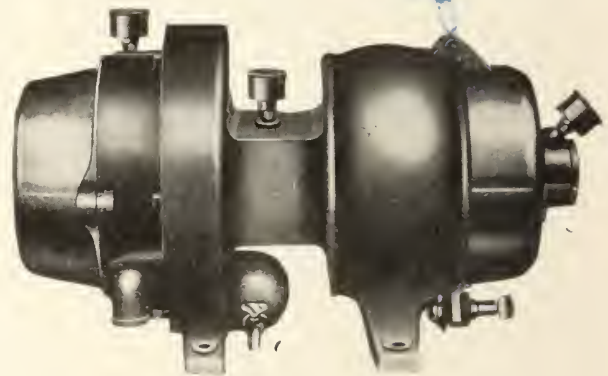
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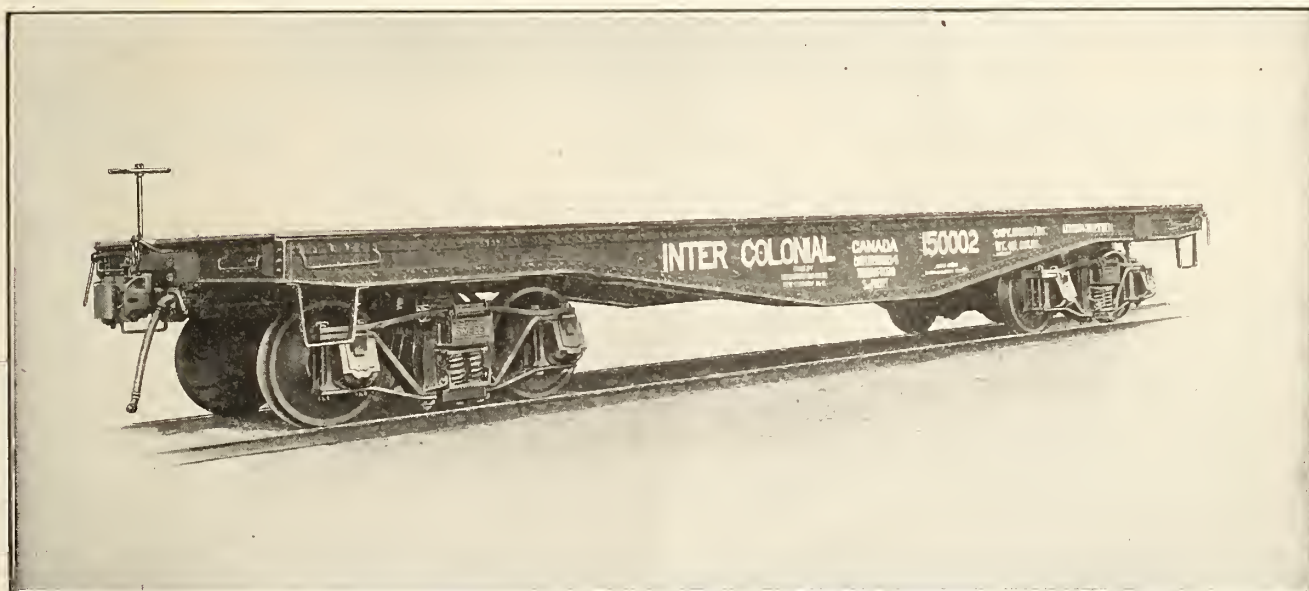
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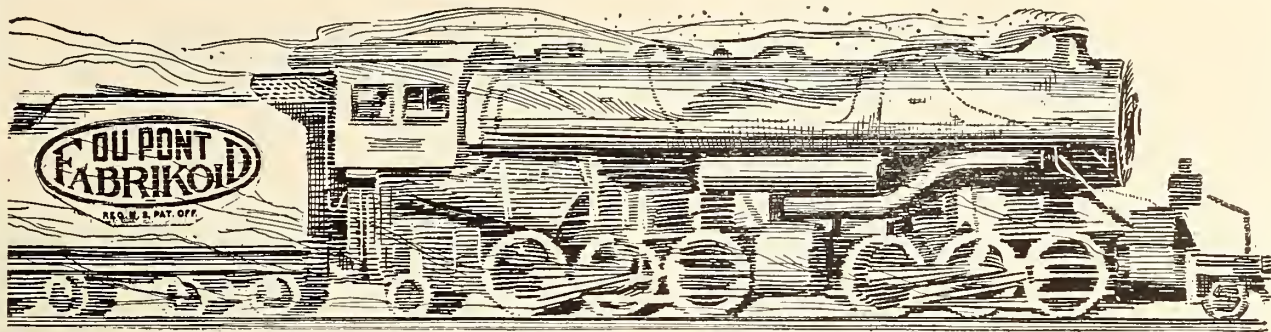
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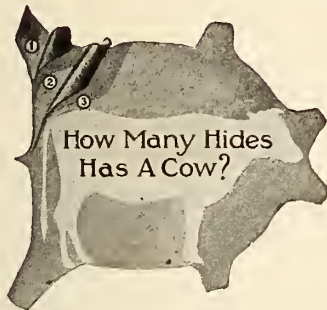
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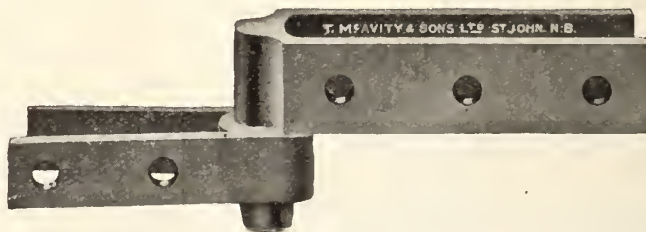
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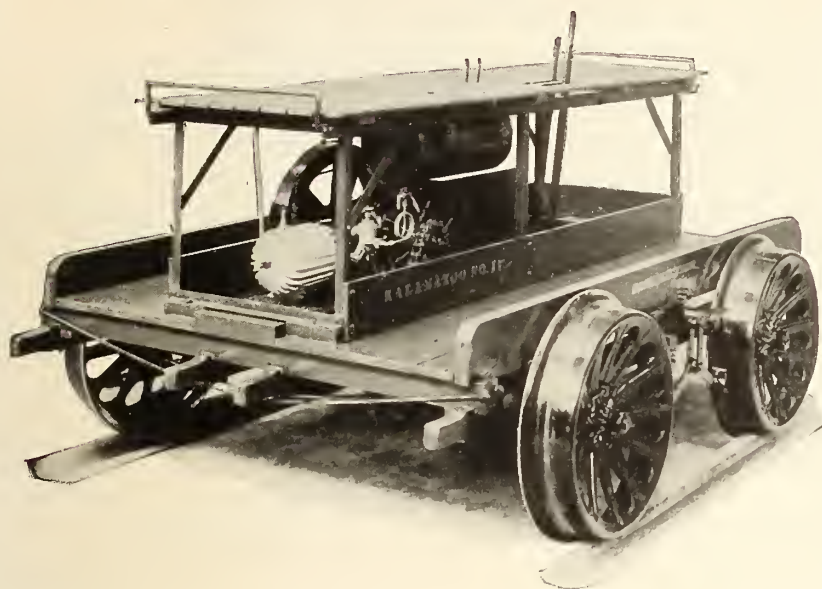
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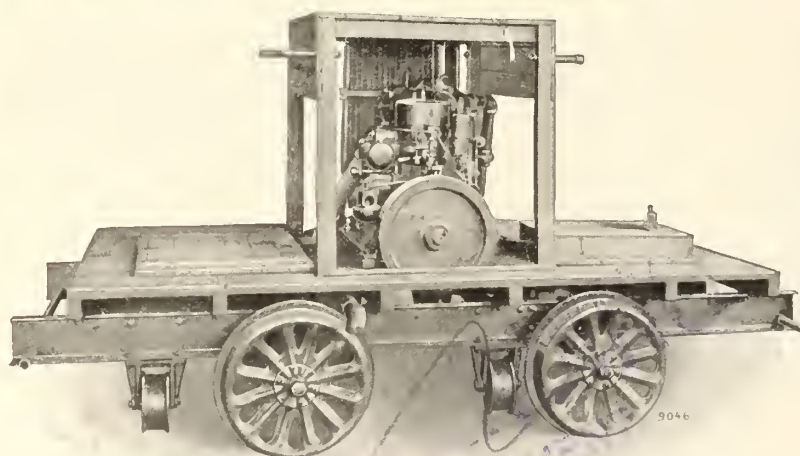
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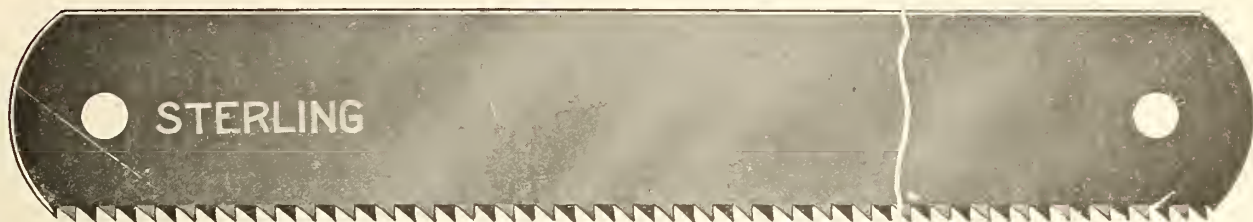
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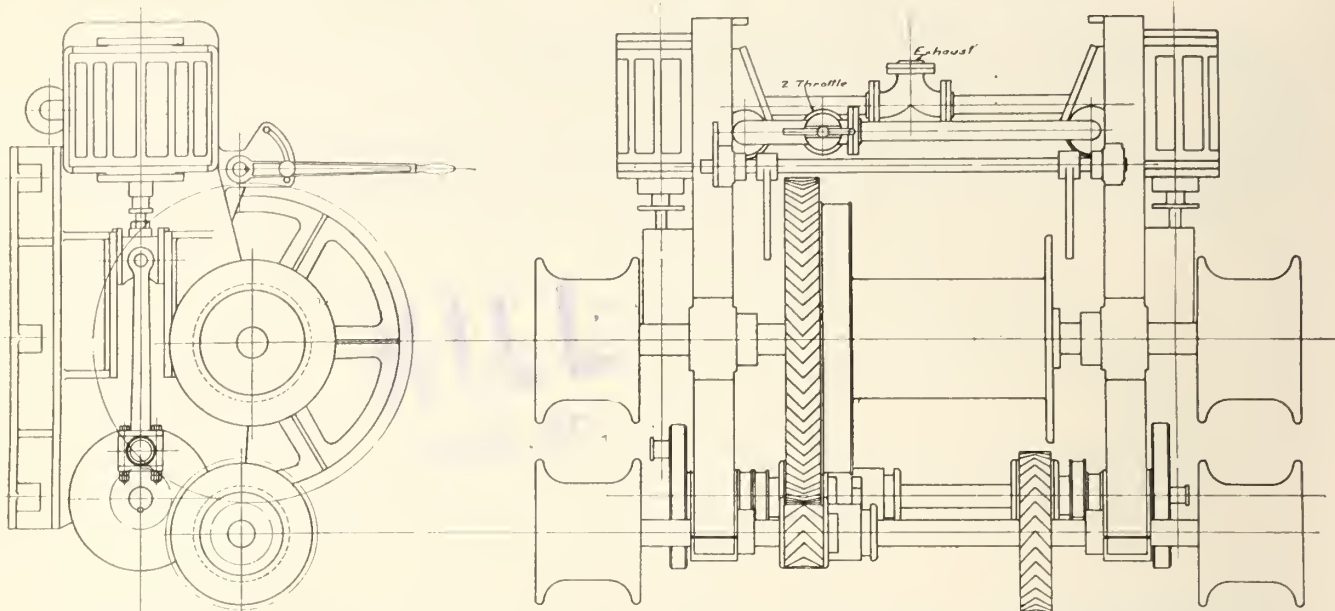
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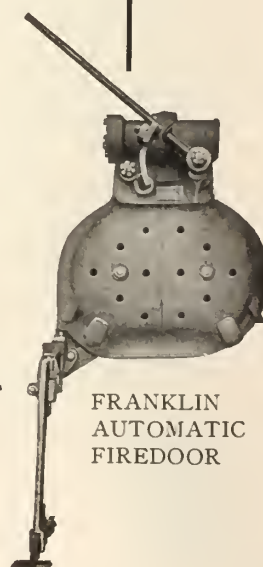
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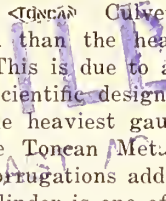
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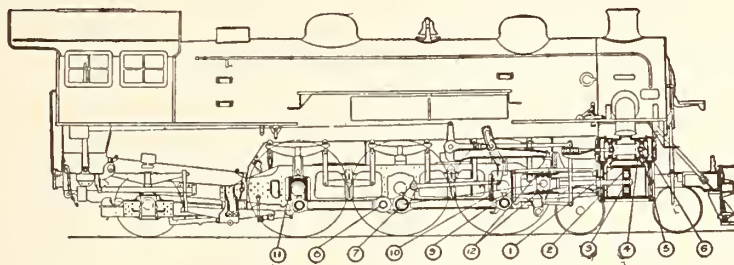
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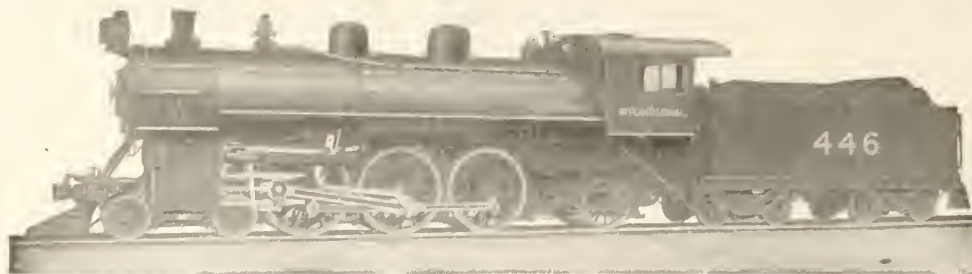
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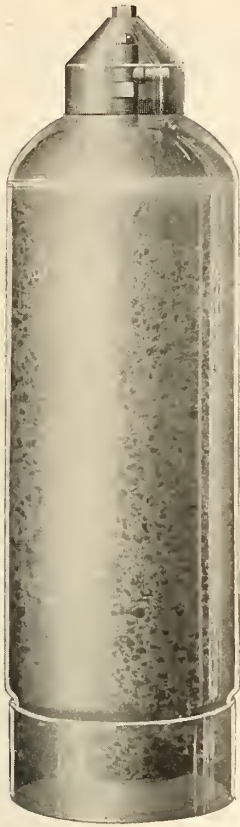
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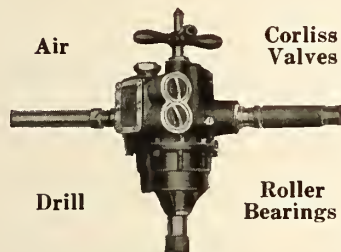
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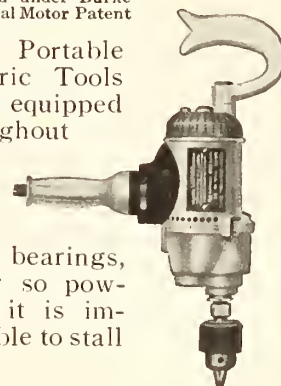


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# Canadian Railway and Marine World

February, 1918.

## The Question of the Increase of Freight and Passenger Rates Before the Board of Railway Commissioners and the Dominion Government.

Canadian Railway and Marine World for January contained a summary of the judgment given by Sir Henry Drayton, Chief Commissioner, on Dec. 26, and concurred in by four other members of the board, authorizing certain increases in freight and passenger rates on steam railways. General order 213, to put the judgment into effect, was issued Dec. 26, as follows:

Re applications of Canadian Northern, Toronto, Hamilton & Buffalo, Grand Trunk, Grand Trunk Pacific, Canadian Pacific, New York Central, Kettle Valley, and Great Northern Railway companies and the Michigan Central and Pere Marquette Railroad companies, on behalf of themselves and other railway companies operating in Canada, subject to the Board's jurisdiction, for a recommendation to the Governor in council, under the War Measures Act, Statutes of Canada, 1914 (second sessions), chap 2, permitting all such railway companies to make a general advance in their tariffs of tolls of 15% on all class and commodity freight rates, except coal, and on all passenger fares, and a specific increase of 15c a ton on coal. Upon hearing the matter at Victoria, Vancouver, Nelson, Calgary, Edmonton, Saskatoon, Regina, Winnipeg, Fort William, Toronto, and Montreal, on June 5, 6, 16, 18, 19, 20, 21, 22, 25, 12, and 20, 1917, respectively in the presence of counsel for and representatives of the Canadian Pacific, Grand Trunk, Grand Trunk Pacific, Canadian Northern, and New York Central Railway companies, the Michigan Central Co., the boards of trade of Vancouver, Nelson, Calgary, Edmonton, Saskatoon, Regina, Winnipeg, Toronto, Montreal, and Kitchener, the Canadian Manufacturers' Association, Kitchener Manufacturers' Association, British Columbia Lumber & Shingle Manufacturers, Rat Portage Lumber Co., The Adolph Lumber Co., Retail Coal Dealers, Retail Merchants' Association of Canada (Manitoba Branch), Canadian Credit Men's Association, Winnipeg Implement Association, Stone Dealers' Association, St. Catharines Fruit Growers' Association, Willow Point District Fruit Growers' Association, Kootenay Fruit Growers' Union, United Farmers of Ontario, Saskatchewan Grain Growers' Association, Dominion Livestock Record Board, Western Livestock Association, Canadian Council of Agriculture, Department of Public Highways for Ontario, the Council of Trail, City of Winnipeg, Government of Manitoba, Associated Boards of Trade of Eastern British Columbia, Dominion Cannery, and Price Bros., the evidence adduced, and what was alleged; and upon reading the written submissions filed, judgment, dated Dec. 26, 1917, was delivered by the Chief Commissioner and concurred in by the other members of the Board, a certified copy of the said judgment being attached hereto marked "A":

It is ordered that, subject to the provisions of the Crowsnest Pass agreement and to the provisions of the said judgment, the standard tariffs of maximum mileage tolls approved by the board to

be charged between stations on the individual steam railway systems subject to its jurisdiction, may, by new tariffs to be submitted for the board's approval, and publication in The Canada Gazette, as required by the Railway Act, secs. 327 and 331, and following such approval and publication made effective not earlier than Feb. 1, 1918, be increased as follows, viz.:

Standard passenger tariffs applying between stations on railways east of and including Thornton, Alta., and east of and between Edmonton and Athabasca and the Canadian Pacific Ry. lines between Edmonton and Macleod, through Calgary, where the existing standard toll is less than 3½c a mile, by 15%, subject to a maximum toll of 3 45/100c a mile.

Standard freight tariffs in Alberta, west of and including Canmore and Edson, and in British Columbia, excepting between ports of call on the Arrow, Slokan, Kootenay and Okanagan Lakes and the Columbia River, also the Edmonton, Dunvegan & British Columbia Ry. standard freight tariff, by 10%.

Standard freight tariffs of railways east of and including Crowsnest, B.C.; Canmore, Nordegg, and Edson, Alta., also those applying between ports of call on the Arrow, Slokan, Kootenay, and Okanagan Lakes and the Columbia River, by 15%.

And it is further ordered that, in the interest of uniformity, the only fractional rate (if used) in the said standard freight tariffs be the half-cent, to be accounted the equivalent, inclusively, of twenty-five hundredths to seventy-four hundredths of a cent.

### Appeals from the Board's Judgment, and Extension of Time on Grain Rates.

On Jan. 10 several applications were made to the Board of Railway Commissioners in connection with its judgment of Dec. 26. F. H. Chrysler, K.C., Ottawa, on behalf of the Manitoba Government and J. H. Ashdown, a Winnipeg shipper, obtained leave to appeal to the Supreme Court of Canada on questions of law arising out of the agreement between the Manitoba Government and the Canadian Northern Ry.

F. H. Phippen, K.C., General Counsel, Canadian Northern, obtained leave to appeal to the Supreme Court against the board's finding in connection with the Crowsnest agreement.

In granting leave for these appeals the board decided that the going into effect of the new tariffs should not be affected thereby.

Mr. Fowler, for the North West Grain Dealers Association, asked that the advanced rates on grain be not put into effect until June 1.

C. C. Baker, for the Winnipeg Wholesale Lumbermen's Committee, asked for delay in putting the new rates on lumber in force.

The Chief Commissioner, on Jan. 15, gave the following judgment, which was concurred in by the Assistant Chief Commissioner, the Deputy Chief Commissioner,

er, and Commissioners McLean and Good-eve.

"As a result of protests which were made by live stock shippers associations, lumber shippers' associations, and grain shippers' associations, as well as the application of the Manitoba Government for leave to appeal from the judgment herein, a sitting of the Board was held at Ottawa on Jan. 10, 1918, to consider these protests. It was determined at the sitting to give leave to the Manitoba Government to appeal on the questions of law on which that government desired to appeal to the Supreme Court of Canada. The other protests referred to were not disposed of. The matter that the board considered in connection with these protests was the effective date which should be given to the board's judgment. No appearance was made by any live stock shippers' association, and no representations were, therefore, made on behalf of their interests. Dr. Magill and Frank Fowler appeared for the grain interests and Messrs. Kelly and Bacon for the lumbermen.

"I first deal with the lumber situation. At the hearing it was asked that the effective date should be postponed until April 1 next. Other representations have been made in writing, asking that the effective date of the tariffs should be made Mar. 1, Mar. 15, and April 1. There is no doubt that the desire of the trade to escape the higher rates is general.

"The application in this case was lodged in April, 1917. Sittings of the board, at which the application for an increase of rates was heard, were held as far back as June 5, 1917, and the lumber interests were represented at these hearings. As far back as June 6 last, Mr. Mackin, Chairman of the British Columbia Lumber & Shingle Manufacturers' Association, said: 'We notice one of the railways has stated that it would like to have an emergency declared, and this rate made effective within 30 days. What would be our position with a great deal of business on our books at present sold on the basis of the old rate? Is it not reasonable we should be given sufficient time? We think 30 days is not enough within which to clean up that business.'

"He was asked the question: 'Are your contracts made in that day? In view of the present situation, the changed conditions, are you not making most of your contracts subject to that?'

"His reply was: 'We have for the last ten days been doing that. But most of the lumber is sold on the conditions I have named above.'

"Alex. Wood appeared at the same sitting for the Rat Portage Lumber Co. He thought that three months would be the least time within which orders filed could be got out. Mr. Adolph, of the Adolph Lumber Company, at the sitting held on June 16 in Nelson, B.C., showed according to his quotations, that he had 2,000 orders which would have to be delivered at the present rates, and that he had no right of cancellation. He also stated that he had to deliver his lumber within 30 days if



he could, but that under present conditions it would take two months to deliver it.

"On cross-examination by Mr. Peters on behalf of the railway companies, the record shows—

"MR. PETERS: Have you any lumber contracts taken which you accepted on condition that the rates remain the same as at present? Haven't you got orders now booked where you are protected in case of advance in freight rates?"

"MR. ADOLPH: Yes, as soon as we understood that there was an application."

"MR. PETERS: You did not mention that. I thought you were going to mention it. How long have you had orders like that?"

"MR. ADOLPH: Probably three weeks."

"MR. PETERS: Not longer than that?"

"MR. ADOLPH: I do not think so, and we have not a great many taken under those conditions."

"MR. PETERS: They are all taken that way now?"

"MR. ADOLPH: A man would be a very poor business man to take them any other way."

"What may be said of lumber may be said of every other commodity handled by the railways. The fullest publicity has been given the railways' application for increased rates. The shippers have had notice of it for upwards of eight months. They have certainly had as much notice as they would have had if the railway companies had gone to the unnecessary expense of filing every tariff before the question was considered by the board. Speaking generally, they have been in a position to protect themselves by taking orders at the point of production, subject to the cost of railway haul, whatever that might be. The only notice under the act that the railway companies are obliged to give is 30 days. Shippers, in the present instance, have had notice, as already stated, of over eight months. Doubtless there has always to be more or less inconvenience and perhaps loss suffered every time a rate advance is made, but this trouble is caused just as much by other advances in any necessity whether it be supplies or labor. With the notice that the shippers have had in this instance, this inconvenience should have been reduced to an irreducible minimum if the ordinary precaution, as defined by Mr. Adolph himself, had been adopted. As it is now, there will still be delay before the increases are put in. The whole of the railway demands have not been given effect to. Instead of a blanket rate increase, effect has been given to the position taken by the lumber interests and specific advances are made, resulting in the necessity of having new tariffs provided. In all probability, this will take some time, and until the appropriate tariff is provided the judgment of course cannot be carried into effect. The circumstances and publicity of the application are such that no application for a stay of the judgment ought to be granted.

"This disposes of all requests for suspension of the judgment, except in so far as the movement of wheat is concerned. The position here is entirely different. I would give effect to Mr. Fowler's application. Wheat buyers and country elevators are not permitted to carry on business in the ordinary course, in so far as wheat is concerned. They are compelled by the Board of Grain Supervisors for Canada to purchase wheat at a specific price. They are also compelled by the same board to sell wheat at a specific price. Mr. Fowler's figures, which were not disputed by the railways, show that the Board of Grain Supervisors has held these grain buyers down to a price which will certainly permit of no excessive or unreasonable profit, but will possibly result in some loss, certainly in loss having regard to the activities of the buyers, in so far as wheat itself is concerned.

"In view of the artificial position, therefore, of wheat, brought about by legislation doubtless necessary in view of war conditions, and in view of the position in which wheat purchasers have been placed, I am of opinion that the increases allowed for the carriage of wheat ought not now to be made effective. I would postpone the effective date of rate increases for the transportation of this commodity until June 1 next. This will enable all wheat purchased at the old rate and subject to the old conditions to be hauled to Fort William before the new rates take effect.

"The like conditions do not apply to coarse grains, nor indeed to any grain other than wheat. In my opinion, the effective date of the judgment ought not to be postponed, having regard to these commodities. The board's judgment was issued on Dec. 26, 1917. It was then made public, and the parties to the issue were advised as to the board's action. The judgment was given the fullest publicity by the press. Under the Railway Act, tariffs may be filed by the railway companies of their own motion, or may be directed by the board; and the board in directing tariffs to be filed may designate the date at which any tariff will come into force. In view of all the circumstances, railway companies ought to file the necessary schedules and tariffs to take effect not earlier than Feb. 1, 1918."

The board passed general order 212, Jan. 15. After reciting the applications by the railways, the hearings, written submissions in it referred to the judgments given by the Chief Commissioner on Dec. 26, 1917, and Jan. 15, 1918, and to general order 213, Dec. 26, 1917, it provided as follows: It is ordered that, subject to the provisions of the Crowsnest Pass agreement and the judgment of Dec. 26, 1917, which is hereby made part of this order, the special freight tariffs issued under the authority of the judgment, except those applying on wheat, in carloads, to Port Arthur and Fort William, be published and filed at least five days previous to the date on which they are to become effective, which date shall not be earlier than Feb. 1, 1918; and it is further ordered that the rates authorized by the judgment to be charged on wheat, in carloads, to Port Arthur and Fort William only, may be made effective not earlier than June 1, 1918.

#### Approval of Freight Tariffs.

The Board of Railway Commissioners passed general order 215, Jan. 17, as follows: Re application of the undermentioned railway companies for approval of their standard freight tariffs of maximum mileage tolls. The said tariffs having been filed on the basis permitted by the Board in general order 213, Dec. 26, 1917, it is ordered that the following tariffs be approved; their rate scales to be published in at least two consecutive weekly issues of The Canada Gazette, preceded by the following notice: "The undermentioned standard freight tariffs having been filed for the approval of the Board of Railway Commissioners for Canada, and being found by the board to be in accordance with its general order 213, and having been approved by general order 215, Jan. 17, 1918, the rate scales thereof are hereby published as required by sec. 327 of the Railway Act."

Algoma Central & Hudson Bay, C.R.C. 441; Algoma Eastern, C.R.C. 195; Atlantic, Quebec & Western, C.R.C. 20; Boston & Maine, C.R.C. 1842; Canadian Northern, C.R.C. W-1052, E-1007; Canadian Pacific, C.R.C. W-2300, C.R.C. E-3379; Central Vermont, C.R.C. 1204; Dominion Atlan-

tic, C.R.C. 552; Edmonton, Dunvegan & British Columbia, C.R.C. 65; Esquimalt & Nanaimo, C.R.C. 371; Glengarry & Stormont, C.R.C. 80; Grand Trunk, C.R.C. E-3735; Grand Trunk Pacific, C.R.C. 244; Manitoba Great Northern, C.R.C. 1352; Brandon, Saskatchewan & Hudson Bay, C.R.C. 1353; Crows Nest Southern, C.R.C. 1354; New Westminster Southern, Nelson & Fort Sheppard, Vancouver, Victoria & Eastern Ry. and Navigation Co., C.R.C. 1355; Red Mountain, Kettle Valley, Victoria & Sidney Railway, C.R.C. V-50; Halifax & South Western, C.R.C. F-51; Kettle Valley, C.R.C. 130; Maine Central Railroad, Supplement 2 to C.R.C. C-1184; Michigan Central, C.R.C. 2735; Napierville Junction, C.R.C. 191; New York Central, C.R.C. 1225, C.R.C. 1226; Pere Marquette, C.R.C. 2144; Quebec, Montreal & Southern, C.R.C. 640; Quebec Oriental, C.R.C. 29; Temiscouata, C.R.C. 300; Thousand Islands, C.R.C. 332; Toronto, Hamilton & Buffalo Railway, C.R.C. 1192.

On Jan. 24 the Board passed general order 215a, approving the following freight tariffs:—Moncton & Boutouche Ry., C.R.C. 29; Quebec Ry., Light & Power Co., C.R.C. 103.

#### Approval of Passenger Tariffs.

The board passed general order 214, Jan. 10, as follows: Re application of the undermentioned railway companies for approval of their standard passenger tariffs of maximum mileage tolls. Standard passenger tariffs having been filed on the basis permitted by the board in general order 213, Dec. 26, 1917. It is ordered that the following standard tariffs of maximum mileage tolls for the carriage of passengers be approved; the said tariffs, together with a reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette.

Canadian Northern Ry., C.R.C. W1492.  
Canadian Pacific Ry., C.R.C. E1064.  
Central Vermont Ry., C.R.C. 502.  
Dominion Atlantic Ry., C.R.C. 404.  
Grand Trunk Ry., C.R.C. no. E-2669.  
Grand Trunk Pacific Ry., C.R.C. 660.  
Glengarry & Stormont Ry., C.R.C. 2.  
Halifax & South Western Ry., C.R.C. no. P-77.  
Michigan Central Ry., C.R.C. 2441.  
Napierville Junction Ry., C.R.C. 92.  
New York Central Rd., C.R.C. no. NYC-191.  
Pere Marquette Rd., C.R.C. 580.  
Quebec, Montreal & Southern Ry., C.R.C. 262.  
Toronto, Hamilton & Buffalo Ry., C.R.C. 1209.

The board passed general order 214a, Jan. 17, approving of the following additional standard passenger tariffs of maximum mileage tolls: Great Northern, C.R.C. 1161; Maine Central, C.R.C. 214; Temiscouata, C.R.C. 66; Wabash, C.R.C. 996. On Jan. 24 the Board passed general order 214b similarly approving the following passenger tariffs: Boston and Maine Rd., C.R.C. 305; and Moncton & Boutouche Ry., C.R.C. 27.

The standard passenger tariffs referred to above provide for a first class rate of 3.45 cents a mile, instead of 3c as heretofore. The new rates also apply to and from Canadian border points and through fares to United States destinations have been advanced accordingly on the Canadian portion of the fares, so as to protect Canadian border points.

#### The Dominion Government on Appeal Suspends New Rates from going Into Operation.

On Jan. 24, members of the Dominion Government heard at Ottawa, the Manitoba, Saskatchewan and Alberta Government's appeal against the Board of Railway Commissioners' decision authorizing an increase of freight and passenger rates, the argument being presented by H. J. Symington, K.C., of Winnipeg, in an address occupying several hours. At the resumption of the hearing in the af-



ternoon, Sir Robert Borden announced that, in view of the many pressing matters requiring the government's immediate attention, and the probability that considerably more time would be required for hearing arguments, it had been decided to adjourn the further consideration of the matter until March 1. The governments of the three prairie provinces would be given until Feb. 8 to submit their arguments in writing, the railway

companies to be given until Feb. 18 to reply, and to justify the increases ordered, and the prairie provinces governments' would then be given until Feb. 28 to submit further arguments in rebuttal. The question of the leave granted to appeal to the Supreme Court on points of law was discussed, Mr. Symington saying that he could not get ready for an early hearing, as well as preparing the argument to be submitted to the Dominion

Government. Counsel for the Canadian Pacific and Canadian Northern Railways objected to any postponement of the appeals to the Supreme Court, and Sir Robert Borden said the matter would be dealt with by the acting Attorney General, Hon. A. L. Sifton. An order in council was passed subsequently, suspending the going into effect of the increases in freight and passenger rates ordered by the Board, until Mar. 15.

## The Board of Railway Commissioners' Rate Judgment of Dec. 26, 1917.

The judgment given by the Chief Commissioner on Dec. 26 occupies 76 foolscap pages of typewritten matter and its conclusions were summarized in Canadian Railway and Marine World for December. Fuller particulars of it are now given as follows: After stating that the first application was filed by the Canadian Northern, on its own behalf and for all other railways operating in Canada, and that very similar applications were afterwards filed by the Canadian Pacific, Grand Trunk, Grand Trunk Pacific, Great Northern, Kettle Valley, Michigan Central, New York Central, and Toronto, Hamilton & Buffalo Railways, the judgment quoted the Canadian Northern's application as follows:

"Nothing is more essential to the welfare of Canada, whether considered in its own interests or as a part of the Empire, than that the railways operating within its borders should be in a position to respond immediately and effectively to the fullest demands made upon them, either by the general commerce of the country or in connection with the defence of the realm. Every industry, whether engaged in war preparation or in the manufacture of commercial commodities, and every individual in Canada is affected, either directly or indirectly, by the efficiency or inefficiency of transportation facilities, and while at present, owing to scarcity of skilled labor and other causes due to the war, it may not be possible to maintain the transportation service in a condition of highest efficiency, it is an imperative duty on the part of every one to see that the service is adequately sustained.

"The applicants claim that under the present revenues and rates applicable to their enterprises it is impossible to adequately sustain their service, to make needed betterments, or to meet the enormous decreases in net operating income attributable to the very substantial increased cost of fuel coal, materials, supplies, equipment of all kinds and wages entering into the maintenance and operation of their railways. The applicants submit herewith a summarized statement showing that upon the Canadian Northern system alone the increase cost to it of fuel coal, materials and equipment for the ensuing year as compared with the prices in the year just closed, and prepared on the assumed basis of the same quantity of business and the same volume of traffic in the two respective years will amount to over \$5,000,000; that these increases are attributable to the horizontal advance in the prices of coal fuel and other commodities purchased by the applicants in the United States and Canada as required, and are also in part attributable to increased duties, war taxes, and increased transportation costs of connecting carriers, both lake and rail, on imported materials. Since the rates of the railway companies are absolutely fixed under the Railway Act, the applicants are powerless to increase their revenue, to

equalize or even to approach equalization of this increased cost in fuel coal and other commodities, and they are faced with a huge deficit in net operating income unless immediate relief is granted.

"Substantial increases in both freight and passenger rates are therefore imperatively necessary, and the emergency requires that the relief granted should be made in the most expeditious manner and with the least possible delay. If advances in rates be proposed and filed with the board in compliance with its present rules governing the publication of tariffs, a long delay must necessarily ensue before such tariff publication can be prepared and made effective, and for these reasons it is deemed expedient that any advances permitted should be made by virtue of the War Measures Act and that the board upon the passage of any order in council as may be recommended by the board should permit the publication of flat percentage advances to existing tariffs by supplementary tariffs filed with the board and that such supplementary tariffs should be published and made effective at the earliest possible moment."

Public hearings of the applications were held at various points from Montreal to Victoria, B.C., from June 5 to 25, 1917, and several pages of the judgment are devoted to submissions by representatives of the Manitoba Government, various boards of trade, the Canadian Manufacturers' Association, and a number of business and farmers' organizations. Mr. Pitblado, who appeared for the Manitoba Government, challenged the board's jurisdiction to make a recommendation to the Governor in council under the War Measures Act. He said: "It is beside your powers for the railway companies to ask you to recommend to the Governor in council what they should do under the War Measures Act, and I submit that the responsibility and power and control is in the Governor in council, and that the railway companies have no right to ask you to do anything."

Mr. Pitblado also submitted that the railways in their application were attempting to override agreements. The first agreement referred to was the Crowsnest Pass agreement, made by the Canadian Pacific with the Dominion Government which provided that in consideration of \$11,000 a mile paid to the Canadian Pacific, not exceeding in the whole \$3,637,000, the rates should be reduced on a large number of commodities.

The other agreement referred to by Mr. Pitblado is the Canadian Northern Railway's agreement with the Manitoba Government, of 1901. Under that agreement, in consideration of guaranteeing the railway company's bonds and giving them a lease of the Northern Pacific and Manitoba Ry. a reduced rate schedule was agreed to by the Canadian Northern.

The Chief Commissioner upheld Mr. Pitblado's objection that the board has no jurisdiction to advise the Governor

in Council as to what action the Dominion Government ought to take under the War Measures Act. In regard to Mr. Pitblado's argument as to the Crowsnest Pass agreement and the Manitoba agreement, the Chief Commissioner quoted the principal provisions of the act under which C.P.R. rates were reduced upon certain articles, from Fort William and all points east of it on the C.P.R., to all points west of Fort William on the C.P.R., and said in part:

"There is no doubt that there is authority for the proposition that the passage of an act giving a new commission, by it formed, full jurisdiction to fix just and reasonable freight and passenger rates and fares, automatically repealed previous maximum rate laws—the basis supporting such proposition, of course, being that the object of the legislature is plainly declared, viz., the fixing of just and reasonable freight and passenger rates, having proper regard, not only to the question of the reasonableness and fairness of the rate itself, but also to the principle of equality as between different districts and shippers, which would be defeated by the continuance of a special act giving special rights to any particular district of the country, or creating rates, which by change of circumstances and conditions could not be described as just or reasonable.

"I am of the opinion, however, that this principle cannot be applied in the present instance. Sec. 3 of the Railway Act specifically provides that, unless expressly provided in the act to the contrary, wherever the provisions of the Railway Act, and of any special act passed by the Parliament of Canada, relate to the same subject matter, the provisions of the special act shall, in so far as it is necessary to give effect to such special act, be taken to override the provisions of the Railway Act. A specific reduction worked by the special act, therefore, limits the board's general jurisdiction, having regard to rates. In my view, no matter how great the shortage may be in railway revenue, the board cannot advance these Canadian Pacific rates, beyond the reduction secured under the special act. Owing to the manner in which our railways are constructed and the territories occupied by them, no useful object whatever would be served by increasing the rates on other lines, as it would simply mean that they would be carrying no business at the higher rate when the lower was available to the public on the Canadian Pacific rails.

"The situation in connection with the Manitoba agreement is entirely different. There, the act is of a provincial legislature, which does not bind the board. In the first instance, the Canadian Northern is a Dominion corporation. In the second instance, assuming that any of the component railways, which are now combined in the Canadian Northern system, were provincial undertakings, the rule obtain-



ing as to special acts passed by the Dominion Parliament, is entirely reversed in the case of all acts of provincial legislatures. Sec. 6 of the Railway Act provides that where any railway, the construction or operation of which is authorized by a special act passed by the legislature of any province, is declared by the Parliament of Canada to be a work for the general advantage of Canada, the Railway Act shall apply to such railway and to the company constructing or operating the same, to the exclusion of such of the provisions of the special act as are inconsistent with the Railway Act."

"The whole tariff situation and railway subject is surrounded with much difficulty, but some things are at least clear. Among them, it is clearly the board's duty to allow fair and just rates to carriers for the service they perform. It is also clear that the board can neither order nor enforce rates which are unremunerative to the carriers without infringing the principle of the Railway Act by denying carriers a fair and just rate. No enforced unremunerative rate can be said to be just to the carriers. The question is one directly affecting shippers and consignees on the one hand, and carriers on the other; but, in arriving at a solution of what a fair rate for the transportation of coal by the Grand Trunk from the frontier to Toronto would be, the fact that the country had relieved the Grand Trunk of a present liability by making a cash advance to the Grand Trunk Pacific, could hardly be a consideration or a reason why a rate otherwise fair and just ought not to be adopted.

"It is equally clear that any losses the Grand Trunk may have made in the Grand Trunk Pacific can afford no ground for increasing the rate, which, apart from such consideration, was fair and reasonable.

"There is no reason why the business of the Canadian Northern should be conducted at a loss, simply because the country owns it. Under the Railway Act, the board certainly cannot deny the people as a whole a rate which would be fair to individuals when owning the transportation system. It appears that a national railway, just as much as any other railway, ought to be operated so as to cover the cost. The interest cost on the Canadian Northern securities certainly cannot be looked upon as negligible and a matter of no moment to the country. Whether there be room for issue on this score or not, at any rate under the Railway Act the board cannot consider rates on the Canadian Northern on a different basis to those on other roads, simply because the country will in future own the stock."

"Undoubtedly the higher the rate the greater the cost to the country; but, it would appear, that the country as a whole could much better afford to pay increased rates than run the risk of transportation failure or embarrassment."

After referring to the automobile industry, and to the prosperity prevailing in Saskatchewan, the Chief Commissioner continued:—"The position is very similar in the other two provinces, Manitoba and Alberta. This condition in an agricultural community can only be expected as a result of the high prices obtaining for grain, live stock, and other farm produce. Some similar objection has been made in the east. There, again, the manufacture of munitions has in part at any rate duplicated the prosperity of the Prairie Provinces. The figures that have been presented in opposition to the application, correctly taken as they have been from the different companies' annual reports and from Government statistics, are

shown by the recent cost developments to be of little value in determining the position of the companies and the burden of today. The added costs are largely the outcome of advances made in the spring and summer of this year. More than that, they do not seem to be final, but rather appear to be growing. The last annual reports do not, therefore, mirror these increases at all, nor are they of the slightest help in arriving at a proper conclusion on this application. The fact is that abnormal increases in costs have developed since the last annual reports were made. The point was taken that costs of themselves were not the sole factor, but that increased gross to the companies might well offset the effect of the advances, and that this increased gross must be considered as well as the cost advances. As a matter of fact, the increased costs have not been met by the increased gross, as the more recent monthly reports show.

"The Canadian Northern figures for July, August, and September of 1917 and of 1916 are as follows:—

	Gross Revenue	Expenses	Net Revenue	Op'ting Ratio
July, 1917	\$3,844,883	\$2,940,026	\$ 904,856	76.46
July, 1916	3,834,191	2,636,812	1,197,379	68.77
Aug., 1917	3,405,200	2,812,000	593,200	82.57
Aug., 1916	3,684,900	2,612,900	1,072,000	70.90
Sept., 1917	3,341,700	2,915,800	425,900	87.26
Sept., 1916	3,187,900	2,455,300	732,600	76.95

"These results cannot be disregarded. They show that while the gross revenue of July had a slight increase, the net revenue decreased 24.43%. August, on the other hand, shows a decrease of \$279,700 in gross, but nevertheless has an increase in expenses of \$199,100, resulting in a reduction in net earnings of \$478,800 or 44.66%. In September, there was again an increase in gross amounting to \$153,800, but again the expenses increased by \$460,500, reducing the net return, notwithstanding the greater gross, by 41.86%. The figures for these three months are taken up in the company's general statement for the quarter ended Sept. 30, 1917. This quarterly statement also includes the results of the like quarter of the preceding year. The quarterly statement gives the company's total revenue for these three months as \$10,591,807.57 against \$10,706,995.89 for the same period of the previous year. The result is a comparatively small decrease of \$115,188.32 in gross receipts, which amounts in percentage to but a little over 1% of decrease. The expenses are shown as \$8,667,867.95 for the three months of 1917, as against \$7,704,982.67 for the same period of the year before. The resultant increase in expenses is \$962,885.28, which exceeds 12.49%. The net income for the 1917 period amounts to \$1,923,939.62 as against \$3,002,013.22 for the 1916 period. A decrease in the net income of \$1,078,073.60, which represents a percentage decrease in net amount to 35.91%. The increases in expenses are, as a matter of fact, greater than the totals I give. Necessary work has been deferred, owing to the state of the company's finances. The Canadian Northern certainly cannot be charged with ever expending more than was necessary for the maintenance of its lines. As a matter of fact, the charge in the past has been to the contrary, and the amounts expended by the company under this head can well be expressed as relatively small. Notwithstanding during the period in review the company only expended for maintenance of right of way and structures \$1,976,869.14 in 1917, as against \$2,279,658.41 in 1916, an apparent economy of \$302,789.27, representing a percentage decrease of 13.28%, as being effected in this connection. As a matter of fact, the expenditure is not

saved—it is merely deferred, and the only real result of deferred maintenance and repairs is that the ultimate expenditure will be greater than if made promptly and maintenance and repairs had been kept up concurrently with the necessity. This decrease of expenses is entirely eaten up by other increases. To merely illustrate: The cost of maintenance of equipment (necessary work and repairs on locomotives and other running stock, and the like) increased from \$1,156,419.05 in 1916 to \$1,502,779.46 in 1917, an increase of all but 30%.

"I also instance the advance in the cost of transportation, for this period in 1917 amounting to \$4,491,149.49 as against \$3,655,746.23 for the same period of 1916.

"The results of October are of particular interest, as in this month a substantial increase in gross revenue is shown. The Oct., 1917, earnings amounted to \$3,941,612.62, against \$3,716,784.77 for October, 1916. The resultant increase in gross is \$224,827.85 or over 6%. The expenses, however, grew at a very much greater ratio. Those of Oct. 1916, were \$2,496,512.78, while for Oct., 1917, they were \$3,350,486.03, the increase here amounting to 34.20%. As a necessary result, there is an alarming drop in net income from \$1,220,271.99 to \$591,126.59, a decrease of \$629,145.40. In short, the company's net revenue, with an increased gross of 6% decreases 51.55%.

"It should, however, be noted that, in connection with this month the economies of the preceding quarter in connection with the maintenance of way and structures were not practised. On the other hand, no extravagant expenditure was made under this head. The expenditures of 1917 were \$694,653.25 against \$510,141.25. In view of the increased costs which are apparent in other accounts the increased figures cannot sustain any charge either of improvidence or railway extravagances.

"Attention has already been called to the fact that the company spends but relatively little on its right of way. While the necessity of any possible economies cannot be denied, some economies cannot be practised without loss in efficiency and resultant damage, not only to the company itself, but also to that portion of the public that are dependent upon the transportation that it ought to provide. It is sufficient to give but one illustration of insufficient maintenance and repair. The grain movement of the autumn of 1916 to the head of the lakes was light. The October receipts at the lake terminals only amounted to 19,673,341 bush. of wheat, against 52,367,710 bush. for Oct., 1915. The total grain receipts for the month in 1916 only amounted to 27,189,876 bush. against 60,786,715 for Oct. 1915. In Oct. 1917, 27,729,126 bush. of wheat were received and 31,851,584 of all grains an increase of 4,661,708 over the same month of the year before or over 16%. The Canadian Northern, however, only hauled last October to the lake terminals 7,653 cars while it hauled 8,610 cars in Oct. 1916 of the year before. Instead of a proportionate increase in the road's grain business the month results in a car decrease of 957 cars or 11%. A direct reason for this decrease was the physical condition of the line between Winnipeg and Port Arthur. Train schedules could not be kept, and freight wrecks occurred. Efficiency in transportation, including as it does, sufficient terminal facilities, sufficient cars and locomotives for the business offering, and a properly maintained and repaired line of railway, constitutes the chief public necessity in railway transportation. This efficiency can only



be furnished by companies whose business is sufficiently remunerative as to produce the necessary funds to maintain the railway and to meet the ever-increasing demands of transportation. Transportation, if left long enough to the unaided efforts of insolvent or financially embarrassed companies, must, of necessity, break down, to the country's great hurt and injury.

"The question for the board to determine is whether, in the light of the above facts, effect ought to be given to the Manitoba agreement. If effect be given to the Manitoba agreement, practically no rate increases can be made in western territory, where the great bulk of the Canadian Northern's business is carried on. Should the usual practice as between parties to commercial contracts be followed and if it be the board's duty to consider the agreement as a pure matter of law, and having regard only to the contracting parties and not to public convenience and necessity, it will may be that the mere fact that the rate called for by the agreement constitutes an insufficient remuneration for the service rendered and may result in actual insolvency, constitutes of itself no ground for relief. If a builder agrees to do certain work for an inadequate consideration, his loss or its amount is no answer to his contractual liability. Distinctions, however, between the contractor, on the one hand, and railway companies on the other, are readily apparent. The contractor's charges are not subject to government or commission control. The railway company's charges are. The contractor is subject to no duty to the public. The railway company is. Public necessity and service constitute a direct justification for railway construction and railway company incorporation. Moreover, in case the contractor obtains under his agreement an excessive remuneration, that fact of itself is no bar to his enforcing his agreement and collecting the last cent of his consideration. On the other hand, the board is not bound by any contract under which railways may be entitled to an unreasonably large rate, but reduces that rate to whatever it finds just and reasonable. Under any other practice, traffic officers of the companies, could from time to time, in many cases make special contracts with shippers at unfairly high rates, or, on the other hand, give favored shippers unduly low rates. In either instance, the object of the act, which is to secure uniformity just as much as reasonableness in rates, would be defeated. An unduly low rate constitutes an unreasonable rate, just as much as an unduly high one, and the question of whether a rate is unduly low or unduly high can only be established with a knowledge of the cost entitled by the service, which must from time to time vary.

"It has been stated that railway directors are charged with duties and trusts, first, to the public, second, to the company's employees; and third, to the company's shareholders. I would place the duty to the public, involving as it does proper and sufficient transportation, as being the duty of primary importance. The mere fact that an agreement, in the light of changed circumstances, proves improvident and provides rates insufficient to enable the company's property to be properly kept up and to meet the current demands of transportation, also involves loss to the shareholders, is not an answer to the company's primary obligation to properly operate the road. It may well be that an agreement made by the directors elected by the shareholders cannot be set aside on the application of the

shareholders themselves, but, on the other hand, it is clear that no agreement ought to stand in the way of the public as a whole obtaining the full benefit of that measure of transportation, which a properly maintained condition of the company's facilities would permit. Further, an improvident contract made by one company is not merely of injury to itself and that portion of the public using its line—Parliament has so authorized railway construction that the line of one company or another parallels those of others to such an extent that in many instances an unreasonably low rate reserved by contract made by one company must be adopted by the other line. As a result, the other companies are just as much injured as is the company to the contract, and by an act over which they have not the slightest control. It is also apparent that an agreement which reserves an unremunerative rate applicable in the one district, involves a discrimination as against other districts where traffic and operating conditions are similar, and directly infringes on the provisions of the act requiring uniformity in rates. The board does not consider any agreement made by a shipper to pay a given rate any justification for the rate if it be unreasonably high. On the same principle, when rates reserved by contract prove, in the face of changed conditions and increased costs, unreasonably low, the rates must be made reasonable, notwithstanding the contract. In normal times, the contract was entirely free from objection. The discrimination which it caused in one district as against the other, was relieved by the Regina rate and western rate cases. With today's conditions, the contract reserves an unreasonable rate, under which the Canadian Northern is unable to properly maintain its properties; and, with the changed conditions, agreeable to the above principles and practice of the board, higher rates ought to be put in, notwithstanding the provisions of the agreement.

"The effect of increased costs on railway revenues is not peculiar to the Canadian Northern. With its larger field and greater diversity of operations, the Canadian Pacific returns would not as quickly show the effect of different cost advances as those of the Canadian Northern. The C.P.R. returns, however, for September show an increase of \$30,935 in gross on eastern lines, and on western lines of \$64,803. The expenses, however, have greatly increased, the increase in eastern lines amounting to \$732,049, and on western lines to \$839,145. As a result, with a total gross revenue of \$11,476,695, as against \$11,380,939, Sept., 1917, as compared with Sept. 1916, produces a net revenue of but \$3,727,173 as against \$5,202,611. In other words, the drop in net earnings on the system for the month amounts to a reduction of 28.3%.

"Taking the Grand Trunk Railway as the characteristic line in the east—the actual results are very nearly the same as those of the Canadian Northern. The increased traffic which the contestants to the application urged was inevitable to take place has materialized, but the increased gross has entirely failed to make up the losses brought about by increased expenses. The G.T.R.'s total transportation revenue from Jan. 1 to Oct. 31, 1917, was \$43,366,844, against \$39,100,498 for the same period of 1916. The resultant increase was practically 11%. For this same period in 1917, however, the working expenses were \$33,659,532.48, against \$27,479,538.79 for 1916. The increase in expenses is, therefore, 22.59%. The fact that expenses are unfortunately increas-

ing and that transportation in the later months of the year is subject to greater burdens than during the earlier months is emphasized by taking the figures for October out of this 10 months period and contrasting the results obtained in October with the results obtained for the full 10 months. Transportation receipts for Oct. 1917 were \$4,703,643 against \$4,618,000 for 1916. The increase is still present, although to a much smaller percentage, the whole increase amounting to 1.85%. The expenses for Oct. 1917, however, were \$3,876,019.95 against \$3,111,193.36 for Oct. 1916. The resultant increase is 24.58%. The result on the transportation net is that it only amounts to \$708,930.05 for Oct. 1917 against \$1,390,537.64, for Oct., 1916. Therefore, it decreased no less than 49%. The effect of the cost of railway operation over the whole country is beyond question. This loss in net of 49% may well be compared to the October figures of the Canadian Northern, where the net decrease was 51.55%. There can be no question, in view of the actual results, that the railways require greater revenues and must have them if proper efficiency is to be maintained and the demand of the country for transportation at all adequately met. I have already dealt with the difficulty in dealing with the emergency in the west and resulting from the agreements and statutes referred to. Difficulties also exist in the east and are specially attributable to the operation of the Grand Trunk under different tariffs. The rate situation in the east has been largely controlled by water competition and the competition of United States lines.

"Speaking generally, there is no doubt that it is the right of a company to ignore competition should it desire to do so; and there is also no doubt that the advances in water rates have lessened the competition from that source materially. The Grand Trunk situation, however, is aggravated by the fact that it is to quite a large extent a U. S. system. It derives a large portion of its tonnage from U.S. points through its ownership of the Chicago and Grand Trunk Ry. and other subsidiary U.S. systems. Again, speaking generally, these subsidiary U.S. systems (which are not only owned by Grand Trunk shareholders, but are operated by Grand Trunk officials, the whole being operated as one system) are operated under rates upon a lower basis than that obtaining in Eastern Canada. Not only does the Grand Trunk carry through Canadian territory goods of U.S. origin billed through to a U.S. point, but it also carries goods of U.S. origin into Canada which come into direct competition with Canadian producers, wholesalers, and jobbers. The discrimination was in the past greater than it now is. An application was made to the board in 1907, with a view of removing the rate discrepancy, and the disability of the Canadian producer was relieved by the order issued in the international rate case, which reduced rates in Canadian territory to as near the rates in U.S. territory as it was then felt that it was practicable to go. While undoubtedly the Grand Trunk proper has benefited by the traffic produced by its U. S. subsidiaries, unfortunately earnings in U.S. territory, based as they were upon lower rate schedules, resulted in unprofitable operation of these subsidiary lines, with the result that the Grand Trunk from time to time has had to make good, deficits occurring on the U.S. portions of the system, amounting to large sums. This, again, has been the subject of complaint by Canadian shippers, who have urged that the surplus that the company



earned out of their rates was used by the company to enable it to carry on transportation in the U. S. at less than cost. This feature of the rate situation was considered by the board in the eastern rates judgment; and, as a matter of fact, the increases there granted were not so great as they would have been had the tariff basis in the U.S. territory of the system been higher. The details of these deficits given the board by the company were filed in the eastern rates case in 1915, and related to the deficits of 1914. The net deficit then shown by the company, resulting from the operation of its U. S. subsidiaries and deducted from the net of the parent company, amounted to \$1,230,448.89. I understand, however, that, with the heavier traffic brought about by the war and before the present abnormal costs obtained, the earnings of these subsidiary lines greatly improved and the parent company was practically, if not altogether, relieved of the burden of these deficits. The statutory reports so indicate. In view of the necessities of the company and the deficits of the past on the company's U.S. subsidiary lines, the board has hoped that the rate situation would improve in U. S. territory and that the company would take advantage of whatever rate increases were possible under leave of the appropriate commissions.

"The condition brought about by advanced costs would appear to be somewhat similar in the U.S. situation to that in Canada. This has been recognized by the Interstate Commerce Commission in its report to Congress based, as it is, on the financial necessities of the roads, as well as the traffic demands of the nation. The Interstate Commerce Commission has recently granted a substantial increase in connection with the very important iron and steel movement in western territory. The Interstate Commerce Commission also authorized general increases in Central Freight Association territory as far back as June 29 last. For some reason or other these were not with ordinary dispatch fully put into effect by the railway companies. This question Mr. Hardwell has had up with the companies' officials.

"Perhaps one of the most important schedules, having regard to the position of the Canadian shipper, on the one hand, and his U. S. competitor on the other, is the Detroit schedule, covering rates from Detroit to Toronto and Montreal, and the intermediate points. The Grand Trunk rates in Canada of importance in this relation are the rates from Windsor (which, of course, is a station en route) to Toronto and Montreal, and upon which the rates from all intermediate stations are scaled. The basis under which traffic has been carried since the publication of the tariff authorized in the Canadian eastern rates case and prior to the publication of those authorized in the U. S. 15% case, is shown by the following schedule:

	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Toronto	38	33	24	17	14
Windsor to Toronto	38	33	29	24	19
Windsor differences	0	0	+ 5	+ 7	+ 5
	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Montreal	61.5	53.3	41.0	28.7	24.6
Windsor to Montreal	60.0	53.0	45.0	38.0	30.0
Windsor differences	1.5	0.3	+ 4.0	+ 9.3	+ 5.4

"From these schedules it will be observed that a shipper from the intermediate station, Windsor, in connection with the all important 5th class, paid 5c more than the shipper from Detroit in the foreign movement to Toronto, and for the movement to Montreal paid 5.4c more. The disparity was not as high in the past, the board having increased class rates in the eastern rates case by an addition of 2c first, scaling down to 1c, fifth class, other classes scaling proportionately. The Canadian increases were allowed owing to the financial position of the Grand Trunk, the board feeling that, although the apparent difference was great, under war conditions and the demand for all commodities the Canadian shipper would not as a matter of fact suffer. This added disability was cheerfully accepted by eastern shippers. Following the publication of the tariffs authorized in the U.S. 15% case the rate situation was as follows:

	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Montreal	70	61½	47	33	28
Windsor to Montreal	60	53	45	38	30
Windsor differences	10	8½	2	+ 5	+ 2

"The rates from Detroit to Toronto were not then advanced, the rates in Central Freight Association territory being still under consideration by the Interstate Commerce Commission. That commission, as previously mentioned, announced its decision on June 29, 1917, granting increases independently of the 15% previously allowed, but the railway companies, whatever the reason may have been, did not take advantage of this decision to advance the rates from Detroit to Toronto until Dec. 1. At the time of the hearing in this case, and indeed until Dec. 1, 1917, if effect were given to the application for a 15% increase, the result would have been that the rate from Detroit to Toronto, 5th class, would have been no less than 5.5 lower than the Windsor rate to Toronto, and the difference in favor of the Detroit shipper on articles moving under the 5th class into the Toronto market, as against the Windsor shipper, would have been no less than 8c. The same disability would apply proportionately to all intermediate points. The company has made it possible for the board to grant the advance without creating this discrimination against the Canadian shipper by filing, effective on Dec. 1, 1917, as already stated, its tariff increasing rates as authorized in the Central Freight Association territory. The following schedule shows the rates as they now will be under the rates from Detroit, as provided for by the company's tariff of Dec. 1, 1917, and with effect given as this judgment does, to the company's application for a 15% advance:

	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Toronto	50	42½	33½	25	17½
Windsor to Toronto	43½	38	33½	27½	22
Windsor differences	6½	4½	0	+ 2½	+ 4
	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Montreal	70	61½	47	33	28
Windsor to Montreal	69	61	52	43½	34½
Windsor differences	1	½	+ 5	+ 10½	+ 6½

"Absolute parity, of course, is not obtained. It was found impossible to obtain it in the international rate case. While

the rate situation is not all that can be desired in view of the necessities of the company and the higher U. S. rate basis made effective on Dec. 1, I would allow the increase of 15% as asked subject to the exceptions herein made. Increases were sought to be made in the all rail movement from the east to the west. The increases which the companies desired were increases entirely in eastern territory. The new all rail tariff became, therefore, a matter directly affecting the eastern situation, although the movement was entirely into western territory.

"On the record these rates should be considered on a different basis. The companies have already obtained a substantial increase, the 1st class all rail basing rate to Fort William being advanced from 75c to 81c, other classes scaling in proportion. The resultant increase of 6c on 5th class makes an average increase of under 6½% in the five classes of general merchandise; 15% on top of that would make an average increase of approximately 21½%. In view of the manner in which the through tariffs from eastern to western Canada are built up on the combination of the rates current from Port Arthur and Fort William west, and certain arbitrary rates from the eastern shipping points to Port Arthur and Fort William produced to a great extent by the summer competition of the lake and rail route; and in view also of the fact that the rates to different points in western territory have been constructed on the whole result thus obtained, it is obvious that an interference of a different percentage as applied to the whole might work changes in the relative rate bases of different distributing centres in western territory. This, of course, ought not to be done. Much trouble has been taken in the past to arrive at a fair basis of rates as between different districts and to maintain a rate situation of justice from different western distributing points. The matter was referred to the board's Chief Traffic Officer, Mr. Hardwell, to work out the effect of any change in percentages upon the whole district. This has necessitated Mr. Hardwell making up a very large number of rates and putting in much labor in comparing the rates in different sections of the country. His report is as follows:

"A close examination of the rate situation as it affects freight traffic between eastern and western Canada has convinced me that whether the proposal to allow an increase of 10% be sufficient or insufficient for railway needs, it is illogical, and would also upset the system that has always existed of basing the through rates on Fort William. The board recently granted increases in the proportionals for Fort William only:

1st class, from 75 cents to 81 cents.  
5th class, from 31 cents to 33 cents.

"The proposal to accept an increase of 15% in the local tariffs west of Lake Superior, would include the tariff from Fort William; therefore, the rates from Fort William to Winnipeg, for example, would advance as follows:

1st class, from 85 cents to 98 cents.  
5th class, from 38 cents to 43½ cents.

"The suggestion of an increase of 10% from Toronto and Montreal to Winnipeg would result as follows:

1st class, from 1.66 to 1.82½ cents.  
5th class, from 0.71 to 0.78 cents.

"Deducting from these proposed through rates the increased rates from Fort William would leave the eastern proportionals as follows:

1st class, 84½c instead of 81c = 104.2%  
5th class, 34½c instead of 33c = 104.4%

"Therefore, the proportionals recently



allowed would be increased by less than 4½%. Furthermore, the wholesale centres in the west might be expected to complain if their distributing rates were advanced 15% while the shippers in eastern Canada were asked to pay but 10% on their through rates.

"So far as the basing system is concerned, the existing eastern proportionals might be protected by increasing the rates west from Fort William 10 instead of 15%, but this would not remove the objections to be anticipated from the western jobbers. It might also be expected to arouse the coast cities, who would hardly favor a less increase in the terminal tariff from the Lake Superior ports than in the terminal tariff from Vancouver, etc. While the eastern arbitrary system may, perhaps, be considered theoretical, these trade objections may prove real. In my opinion, the logical solution is to confine the 10% advance to the proportionals east of Fort William. The recent allowance averaged under 6½% in the five classes of general merchandise so that the total now suggested would approximate 16½%. The through rates would then be made by adding the Fort William westbound rates increased by 15%. From Toronto and Montreal to Winnipeg the situation would then be expressed as follows:

	1st Class.	5th Class.
Present rates from Sept. 1, 1917	\$1.66	71c
If present through rates were increased 15% . . . . .	1.91	81½c
If present through rates were increased 10% . . . . .	1.82½	78c
If present rates were increased 10% to Fort William and 15% beyond . . . . .	1.87	79½c
If through rates prior to Sept. 1, 1917, were increased 15% . . . . .	1.84	79½c

"It will be observed that if the board had included the recent all rail case in the 15% application, and consequently now granted the full 15%, the rates would approximate to Winnipeg those I suggest; in fact, the important 5th class would be the same."

"I would adopt Mr. Hardwell's report. The result is that 15% will be allowed in so far as the territory west of Port Arthur is concerned, but the increase will be held down to 10% on the eastern balance of the through rate."

"There are already difficulties as to the spread of rates on coal. Those spreads would be but further aggravated if percentage increases were allowed on coal. I would allow a flat increase of not exceeding 15c a ton on all coal and coke carried in the eastern and western territories. This flat advance on the long hauls will, of course, be a great deal less than a percentage increase of 15%; but, on the other hand, on the shorter hauls, it will be larger than the 15% increase would be. The flat rate will, however, bear less harmfully on the consumers generally. The necessity of this 15c increase on a commodity of direct and urgent necessity to the public is much to be regretted. It is, however, inevitable. In order to increase railway revenues to an appreciable extent, commodities constituting a large part of the tonnage carried must bear an appreciable share of increased rates. Coal in eastern territory is chiefly carried by the Grand Trunk and in western territory the Canadian Northern coal tonnage is fast increasing. Both these systems require increased revenues very badly."

"Common clay and sand, gravel and crushed stone are commodities which cannot, in my view, stand a 15% increase. I would, however, permit the companies to increase their rates on these commodities both in eastern and western territories, by adding to existing rates not more than 5c a ton."

"In western territory, as already indicated, any relief the board can give the railways is limited by the provisions of the Crowsnest Pass agreement. The chief traffic in the west is grain. The Crowsnest Pass agreement will not permit a general increase of 15% to be made to the Lake Superior ports; but under it a flat increase of 2c a hundred, which will approximate a 10% advance on what is perhaps the average western grain rate, can be obtained on the commodities included in the existing tariffs on grain, flax seed and their products and I would allow it. It is quite true that neither the Canadian Northern nor the Grand Trunk Pacific are bound by the provisions of the Crowsnest Pass agreement or act. On the other hand, while it would be open for the board to permit an increase of 15% in their rates, over a very large part of the territory served by one or other of these systems, grain could undoubtedly be hauled to the Canadian Pacific. The result would be that both these companies, in order to protect their traffic, would reduce their rates at all points where their traffic would suffer from Canadian Pacific competition. The element of unequal rates would be again introduced into the western territory; and I am convinced that this is no better for the railways than it is for the districts."

"The Crowsnest Pass agreement again, does not call for lower rates for the whole territory as now operated. The reductions apply merely to the then existing tariffs, and therefore to operations of the company as carried on at the time that act was passed. I am of the opinion that discrimination should be avoided, and that the effect of the Crowsnest Pass agreement must be extended to the system of the company as today operated. Under present tariffs no distinction is made between stations in the territory covered by the company's tariffs in effect when the agreement was made and those upon its subsequent construction. The board, in my view, ought not to permit any such distinction to be now made. The Crowsnest Pass agreement was considered by the late Chief Commissioner Killam, in British Columbia Coast Cities vs. C. P. R. 7 C.R.C., 125. His judgment reads: 'As a result of this act and the agreement made under it, the company made tariffs of reduced rates upon the classes of merchandise referred to, not only from Fort William and points east thereof westward, but also from Winnipeg westward, without similarly reducing rates on the same classes of merchandise from Pacific points eastward. These reductions cannot be considered as having been forced upon the company, but were the result of an agreement which it chose to enter into for the purpose of obtaining a subsidy in aid of the construction of a line of railway. The agreement and the statute did not even deal with rates from Winnipeg at all. When the statute was passed and when the agreement was made, the law prohibited unjust discrimination between localities, and while parliament did not stipulate for similar reductions over western portions of the company's railway, it should not, in my opinion, be considered as having authorized what would, if done otherwise, have produced unjust discrimination. I think that we are justified in inferring that, in respect of the classes of merchandise to which these tariffs relate, the reductions did result in such discrimination, and that the rates from Vancouver eastward, upon similar traffic carried under similar circumstances, should be proportionately reduced.' In my view full effect should be given to the above principles."

"In so far as concerns carload rates on grain, flax seed and their products in the west, other than the rates to the Lake Superior ports and intermediate points held down by the terminal rates; also on the same commodities from Port Arthur and Fort William eastward, and carload grain and grain products in eastern Canada, I would allow the application for a flat 15% advance, subject to a maximum increase of 2c per 100 lb. in the existing rates."

"The consideration of chief importance underlying the lumber rates in the west is their relation one to the other. The spread is of greater importance to the lumber industry than the amount of the rate itself. A straight percentage increase would improperly accentuate existing spreads from lumber producing territories and dislocate business. It would have a specially detrimental effect upon the British Columbia industry. On the other hand, a general flat increase might bear with undue severity upon short hauls. There are rates as low as 5c a hundred. A flat increase of 3c, which on a rate of 46c would be an increase of only 6½%, would, in the case of a 5c rate, amount to an increase of 60%. The whole western lumber rate situation is full of difficulty and presents a highly technical rate problem. The question as to how increases in lumber rates can be best made without dislocation of traffic by changing the rate relationship now existing between present mills and at the same time result in no undue hardship to the consumer, was referred to Mr. Hardwell for his opinion. His report, in part, is as follows:—

"As regards lumber; so far the British Columbia mills are concerned, the desideratum being the preservation of the existing rate relationship between the various mills, as emphasized at the Calgary hearing and in past proceedings, it is clear that this cannot be attained by means of a percentage of increase, even though held down to a maximum per 100 lb. advance for the longer hauls. The entire situation has been very carefully examined, therefore, with the view of settling on flat increases in cents per 100 lb. which should avoid any possible complaints of preference or discrimination. Working on a tariff that has no uniform basis, it is impossible to arrive at advances accurately representing 15%. I find, however, that the adoption of the following recommendation would not only afford a broad basis, but would nearly approximate 15%, viz.:

"To Alberta destinations, also to C. P.R. main line stations as far east as Mortlach, Sask., the increase to be 3c per 100 lb. To all other destinations in Saskatchewan the increase to be 4c per 100 lb. To destinations in Manitoba, also in New Ontario, east to Port Arthur, the increase to be 5c per 100 lb. To a large number of destinations those suggested increases would equal 15%; to others they would be slightly over or under 15%. From the interior mills to Winnipeg the rate would advance from 33 to 38c, or precisely 15%; from the coast mills from 40 to 45c, or 1c less than 15%. From British Columbia to Eastern Canada I would increase the difference over the rates to Port Arthur to 10% as recommended for the class rates. From the interior and coast mills, respectively, the rates to Toronto points would go up from 60 and 67c to 67 and 74c; 110% of the through rates, as first proposed, would give 66 and 73½c. To Montreal points the result would be similar."

"From the other lumber shipping territories I submit the following recom-



mendations:—From northern Manitoba and Saskatchewan spruce districts, 15%, subject to a maximum of 3c per 100 lb. to destinations in Saskatchewan, also in Manitoba east to Winnipeg, and 4c to those in Alberta and east of Winnipeg to Port Arthur. From the Lake of the Woods and Rainy River districts 15%, subject to a maximum of 3c per 100 lb., to destinations in Manitoba, and 4c to those in Saskatchewan and Alberta. From Port Arthur 15%, subject to a maximum of 3c to Manitoba, 4c to Saskatchewan, and 5c to Alberta. Between points in Eastern Canada 15% flat. As the highest local eastern rate appears to be 20c, this would make the maximum advance 3c.

"I would adopt Mr. Hardwell's report. Under it the rate differences from the different competing mills would be maintained as they now are. In so far as the bulk of the movement is concerned, Mr. Hardwell's recommendations will result in the 15% increase; in other instances the increase will not amount to 15%; and, in other cases, the percentage will be slightly in excess of 15%. The adoption of Mr. Hardwell's recommendations will put the lumber rate upon a more scientific basis than it has been in the past. The rate situation which Mr. Hardwell's report preserves is the outcome of an agreement between the associated western mills and the railways. Under this arrangement, the rates from the coast mills east to Winnipeg and Port Arthur, are made the basic rates. The rates from the interior mountain mills and from the mills as far east as Calgary and Blairmore are all based on this standard rate and scale, not strictly having regard to mileage, but scaled according to the agreement between the trade and the railways. These mills enter into more or less competition with mills in the northern spruce belt (northern Manitoba and northern Saskatchewan); also with mills in the Lake of the Woods district on the Canadian Pacific, and in the Rainy River district on the Canadian Northern; and to some extent with the mills at Port Arthur. The situation is highly competitive having regard to the lumber business. Mr. Hardwell's report is in my opinion, the best solution available.

"On through movements of these lumber commodities from western shipping points to destinations east of Port Arthur, under Mr. Hardwell's report, the increase permitted is a proper and logical result having regard to the dispositions made of other through movements, and in view of the increases already made in the all rail and lake and rail rates. While increases have not been made in the U. S. transcontinental rates, I would, nevertheless, permit an increase in the transcontinental class rates, as they do not reflect competition to the extent the commodity rates do. The rates, however, are built up on the all rail movement, but in view of the U. S. scale and for the reasons already given I think the increase ought to be reduced to 10%. Transcontinental commodity rates, however, are directly competitive. If unduly increased over the U. S. transcontinental rates, the results well might be that Canadian produce would not move at all in cases where U. S. produce was available, or in some other instances, if it did move, it would move over U. S. lines. I would not at the present advance the transcontinental commodity rates unless these rates are advanced in conformity with advances made by the American lines.

"Generally speaking, the rail freight rates in British Columbia are on a considerably higher basis than in the prairie

territory. In the western rates case, the board found that a higher level of charges was justified by the greater cost of conducting transportation. An advance of 15% would, however, materially increase the spread between the mountain and the prairie tariffs, and having regard to all the circumstances, I am of the opinion that in the Pacific territory an increase of only 10% should be allowed, but, of course, no rates to be lower than the prairie rates as increased. This percentage difference will not apply to the rates between the ports of call on the British Columbia lakes, as being now on the prairie basis must take the prairie increase of 15%.

"Railway tolls covering services incidental to transportation stand on a different footing to those charged for the line movement. The application for a general advance and authority permitting a general advance in freight rates not exceeding 15% would, however, include them unless specifically excepted. Some of these charges, for example, tariffs for and the prairie tariffs, and having recently considered by the board. Other such services in their nature represent entirely a terminal activity and have particular importance at different local points. Strong objection has been taken by boards of trade, particularly those at larger points, to any increase being made on this application and on the general grounds on which it is supported to any increase in these tolls. In my opinion the objections are well taken, and I would refuse on the present record any increase of tolls and tariffs applicable to switching, whether local or inter-switching, weighing, demurrage, refrigeration, heated car service, car diversions, reconsignments, storage, wharfage, sleeping or parlor car accommodation, or other special services.

"The application for an increase covers passenger rates as well as freight rates. I am of opinion that the present maximum rate of 4c in British Columbia is so high that it ought not to be advanced. On the other hand, I would grant the advance in rates in other territory where the present maximum rate is 3c as against the 4c rate in British Columbia. In so far as passenger rates are concerned, it is entirely in the public interest at present that passenger travel should be as light as possible. The usual considerations applying to passenger traffic are today reversed. Public interest today calls for a reduction wherever possible in passenger service, to the end that the country's resources of coal, railway facilities and supplies, as well as man power, should be conserved as much as possible for all essential freight movement. The same considerations do not, of course, apply to the necessary freight movement. On the other hand, it must be realized that the board cannot make rates, having in mind an improved and more economic location and system of railways. The board's duty as I see it, and as I have already pointed out, is to control and adjust rates, having regard to the systems of railways that Parliament has authorized. The Board must take the railway ownership just as it finds it.

"No greater profits will be obtained by the railways under the new rate schedule than in the past. The increased rates allowed will certainly not equal the increase in costs to which the railways are subject. These increased costs are not in any way attributable to the railway managements. They are very largely represented in wage increases, which have had the approval of the public at large. Pub-

lic bodies and public sympathy have been with the men in the increases which they have obtained. No objection whatever has been made by any contestant on the ground that the railways have improvidently increased wages. The other items of cost increases are chiefly the result of today's prices of coal, steel material, and railway supplies. The railways suffer in this regard in common with other users of these necessities. The increased cost can certainly not be said to be the railways' fault. It must be realized that these increased costs can only be met by increase in tariffs. The railways' revenues are derived from transportation.

The increases granted do not work out at the same percentage in both eastern and western territory. While it may be that the increases granted in western territory may not prove sufficient to meet the increasing demands on the companies' exchequers, they are as great as the board can authorize on the present application, in view of the Crowsnest case, with the exception of the increases on coal rates. In the west, the application in one instance called for a 15% increase in coal rates. As the coal haul in western territory is long, a 15% rate increase would, on the whole, have netted more than 15c a ton—much more on some of the long hauls. The haul on coal in the east is certainly short, having regard to the volume moved; and the flat increase of 15c a ton the railways asked in eastern territory produces more revenue than a percentage increase of 15% would. In adopting the flat increase of 15c per ton on coal, I am of opinion that substantial justice is being done.

"While it is true that in so far as western territory is concerned, on the great bulk of traffic, rates would only increase approximately 10% and eastern rates are, speaking generally, raised 15%, it must be borne in mind that, while the rates in the two different sections of the country are much nearer equality since the deductions worked under the western rates case and the increases given under the eastern rates case took effect, again speaking generally, rates in the west are still higher. As a result, subject to the limitations worked by the Crowsnest agreement as extended by this judgment and to the specific directions herein contained the companies are permitted to raise their general rates 15% and make the specific advances herein allowed."

**A good story on E. W. Beatty.**—In addressing the Canadian Railway Club in Montreal a short time ago, in connection with the Victory Loan, E. W. Beatty, Vice President and General Counsel, C. P. R., told the following story on himself. "A friend of mine, who represented interests of considerable importance, was required to go to Washington and confer with a high financial authority on a certain matter, and he did not know just how to proceed. His company was involved in combinations which he feared might offend the Sherman anti trust law, and he said to this friend of his, 'I must be very careful and not do anything that will violate the laws of the United States, so I wish you would give me the name of a good lawyer, and I will consult him as to just how far I can go in bringing about these commercial arrangements.' His friend thought for a moment and then said: 'If I were you, I would not consult with a lawyer at all, I would just go to Montreal and talk it over with Beatty, of the C.P.R.'"



# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 211. Dec. 10.—Prescribing car-load minimum weights for lumber, for domestic consumption or for export; and directing that term "full capacity" permit a space of 12 in. between top of load and carlines or rafters of car; schedules to come into force by Jan. 1, 1918.

General order 213. Dec. 26, 1917.—Authorizing railway companies to increase standard tariffs of maximum mileage tolls, passenger and freight.

General order 214. Jan. 10.—Approving standard tariffs of maximum mileage tolls for passengers, on basis permitted in general order 213, Dec. 26, 1917, of C.N.R., C.P.R., Central Vermont Ry., Dominion Atlantic Ry., G.T.R., G.T.P.Ry., Gengarry & Stormont Ry.; Halifax & South Western Ry., Michigan Central Rd., Napierville Jct. Ry., New York Central Rd., Pere Marquette Ry., Quebec, Montreal & Southern Ry., and Toronto, Hamilton & Buffalo Ry.

26833. Dec. 15.—Apportioning cost of installing and maintaining gates at crossing of Burwell, Adelaide and Rectory Sts., London, Ont., by C.T.R., as required by order 26527, Sept. 11, 1917.

26834. Dec. 17.—Relieving C.P.R. from providing further protection at 4th Range crossing, South Roxton, Que.

26835. Dec. 15.—Dismissing application of Town of Oshawa, Ont., for order directing Oshawa Ry. to furnish passenger service to and from portions of town such as it is giving to G.T.R.

26836. Dec. 17.—Relieving G.T.R. from providing further protection at crossing at Wyton, Ont.

26837. Dec. 17.—Authorizing Michigan Central Rd. to build track extensions on Norton Co.'s lands, Chippawa, Ont.

26838. Dec. 17.—Approving Northern Pacific Ry. Standard Passenger Tariff, C.R.C. 303, applying rate of 4c a mile.

26839. Dec. 17.—Approving plan of Deitz award drain, under G.T.R., in Howick Tp., Ont.

26840. Dec. 15.—Extending to Apr. 30, 1918, time within which St. Martins Ry. shall repair bridges over Hanford Brook and Porter Brook as required by order 25865.

26841. Dec. 14.—Ordering C.P.R. to stop train 821, which leaves Toronto at 7 p.m., at Oakville, Ont., until further notice.

26842. Dec. 19.—Relieving G.T.R. from providing further protection at highway near St. Jacobs, Ont.

26843. Dec. 19.—Dismissing application of University Settlement of Montreal's Baby Welfare Committee for order requiring cars used for milk to be equipped with ice or other cooling process.

26844. Dec. 19.—Dismissing application of Town of Montreal East, Que., for crossings at George V. and Champetre Ave., over Canadian Northern Ry. and authorizing town to build highway crossings over C.N.R. at Camble Ave. and Boulevard, Montreal East.

26845. Dec. 20.—Extending for one year from date time within which Canadian Northern Ry. shall erect gates at crossings at Bay Ridge Road, Belleville, Ont., required by order 25932, Mar. 10, day and night watchmen to be placed at crossings pending installation; wages to be paid by C.N.R. and C.P.R.

26846. Dec. 19.—Approving plan and specifications of Stock drain, under C.T.R., on part lot 33, East Zorra Tp., Ont.

26847. Dec. 19.—Authorizing C.P.R. to build highway over St. Maurice Valley Ry. at mileage 6.95, maintenance to be paid by Three Rivers Parish, Que.

26848. Dec. 19.—Authorizing Crows Nest Southern Ry. to build spur for Baker Lumber Co., Mott, B.C.

26849. Dec. 20.—Ordering Canadian Northern Ry. to erect at least a 4th class station at Sandgud, Alta., by Sept. 1, 1918.

26850. Dec. 21.—Dismissing C.P.R. application for authority to build spur on Souigny Ave., Montreal, and authorizing it to renew its application at any future time, if it so desires.

26851. Dec. 22.—Authorizing Canadian Northern Ry. to build spur for Gem Mining Co. and Midland Collieries, Ltd., Drumheller, Alta.

26852. Dec. 22.—Authorizing C.P.R. to build spur for Weaver Coal Co., Toronto.

26853. Dec. 21.—Authorizing C.P.R. to remove transfer track at Conquest, Sask.

26854. Dec. 24.—Relieving C.T.R. from providing further protection at Con. 1, Sidney Tp., near Belleville, Ont.

26855. Dec. 21.—Approving clearances of loading shed for Ford Motor Co. of Canada, at Winnipeg.

26856. Dec. 24.—Relieving C.T.R. from providing further protection at highway crossing at Pickering, Ont.

26857. Dec. 24.—Ordering C.P.R. within 90 days to install improved type of automatic bell at highway crossing at McAdam yard, McAdam Jct.,

N.B.; 20% of cost to be paid out of railway grade crossing fund.

26858. Dec. 19.—Rescinding order 26476, Aug. 29, in so far as it affects rates from points on Maynooth, Rideau and Tweed Subdivisions, Canadian Northern Ry., and ordering that certain other rates be substituted. This order is given in full under "Traffic Orders by the Board of Railway Commissioners" on another page.

26859. Dec. 26.—Ordering C.T.R. not to exceed 10 miles an hour in operation of trains over crossing of Hyde Park Road, London Tp., Ont.

26860. Dec. 26.—Ordering Grand Trunk Pacific Ry. to appoint caretakers at Peers and Oatley, Alta., to see that stations are heated and lighted for passenger service, freight and express matter properly housed, and make delivery of shipments between 8 a.m. and 6 p.m., from Jan. 1 to Sept. 1, 1918.

26861. Dec. 27.—Authorizing Saskatchewan Government to build highway crossing over east end of Canadian Northern Ry. grounds at Vibank.

26862. Dec. 26.—Authorizing C.P.R. to build spur for Baker & Betcherman, Eastview, Ont.

26863. Dec. 27.—Authorizing C.P.R. to build passing siding at grade across diverted road in W. ½ Lot 13, Con. 7, Camden Tp., Ont.

26864. Dec. 26.—Relieving Grand Trunk Pacific Ry. from providing further protection at highway near Allan, Sask.

26865. Dec. 26.—Rescinding orders 25427 and 26768; Sept. 15, 1916, and Nov. 23, 1917, respectively; and approving Canadian Northern Ry. time table showing train leaving Deseronto at 9.15 a.m., arriving at Belleville at 9.45 a.m., daily, except Sunday; and present local train, eastbound, leaving Belleville at 5.45 p.m., arriving Deseronto at 6.15 p.m., in lieu of Toronto-Napanee local running east of Trenton.

26866. Dec. 28.—Ordering Canadian Northern Ry. forthwith to appoint station agent at Junkins, Alta.

26867. Dec. 31.—Authorizing C.P.R. to build spur for Forest Mills of British Columbia, Ltd., mileage 19.6, Boundary Subdivision, B.C.

26868, 26869. Dec. 26.—Authorizing C.P.R. to rebuild bridges 81.4 and 62.8 over Thames River, Ont.

26870. Dec. 26.—Authorizing C.P.R. to build spur for Military Hospitals Commission at mileage 15.5, Winchester Subdivision, Que.

26871. Dec. 26.—Authorizing C.P.R. to alter spur for Canadian-Connecticut Cotton Mills, Ascot Tp., Que.

26872. Dec. 27.—Dismissing complaint of residents of Osgoode, Vernon, Kars and North Gower, Ont., against C.P.R. train service between Prescott and Ottawa; and dismissing C.P.R. application to inaugurate mixed freight and passenger service between these points.

26873. Dec. 29.—Approving revised location of Essex Terminal Ry. between stake 518+60.24 and Reaume Road, near stake 567+14.58, in Sandwich West Tp., Ont.

26874. Dec. 26.—Authorizing C.P.R. to rebuild bridge 68.0 over River Nith, Galt Subdivision, Ont.

26875. Dec. 29.—Approving Northern Pacific Ry. Standard Parlor Car Tariff, C.R.C. S3, showing rate of ½c. a mile between stations in British Columbia.

26876. Dec. 29.—Authorizing Dominion Atlantic Ry. to withdraw trains 3 and 4 and to run trains 96 and 97 on Mondays, Wednesdays and Saturdays only between Halifax and Kentville, N.S.; effective Jan. 6, 1918.

26877. Jan. 2, 1918.—Authorizing Essex Terminal Ry. to cross Canada Southern Ry. (M.C.R.) near Amherstburg, Ont., E.T.R. to pay cost of providing, maintaining and operating half interlocking plant.

26878. Dec. 19, 1917.—Ordering C.T.R. to install gates at crossings of St. Philippe, Convent, St. Ambroise, St. Ferdinand and Ste. Marguerite streets, Montreal, to be operated by day and night watchmen, and apportioning cost; Ste. Marguerite and St. Ambroise streets to be protected by day and night watchmen, pending installation of gates.

26879. Dec. 31.—Approving clearances of proposed coal chute and loader for Saskatchewan Coal, Brick & Power Co., at Shand, Sask.

26880. Dec. 24.—Authorizing Canadian Northern Quebec Ry. to build highway over its track at Orleans St., Maisonneuve, Que.; crossing to be protected by gates, operated by day and night watchmen; 20% of cost to be paid out of railway grade crossing fund, remainder by Town of Maisonneuve; maintenance to be paid by town.

26881. Jan. 3, 1918. Ordering that 20% of removing obstructions to view at Humber Summit crossing, 1½ miles east of Woodbridge, Ont., be paid out of railway grade crossing fund.

26882. Jan. 3.—Authorizing Grand Trunk Pacific Ry. to build highway crossing and road diversion in South ½ Sec. 3, Tp. 37, Range 16, west 3rd meridian, mileage 538.3, Rosemount Rural Municipality 378, Saskatoon District, Sask.; and to close crossing at mileage 538; and rescinding order 4022, Nov. 16, 1907, authorizing said crossing.

26883. Jan. 3.—Approving agreement between Bell Telephone Co. and Mayo & Blanche Rural Telephone Co., Labelle County, Que., Dec. 14, 1917.

26884. Jan. 3.—Authorizing G.T.R. to build spur for Midland Engine Works Co., Midland, Ont.

26885. Jan. 4.—Authorizing Vancouver, Victoria & Eastern Ry. & Nav. Co. to build extension to Northern Pacific Ry. freight house at New Westminster, B.C.

26886. Jan. 4.—Relieving C.P.R. from providing further protection at crossing near St. Cuthbert, Que.

26887. Jan. 3.—Amending order 26400, Aug. 1, 1917, re G.T.R. interchange tracks at Port Hope, Ont.

26888. Dec. 22, 1917.—Ordering G.T.R. to build undercrossing between farms of H. Ancil and A. Cayer, near Walkers cutting, Bulstrode Tp., Que.; and an undercrossing or grade crossing on Jos. Proulx's property if he so desires, and at his expense; work to be completed by June 30, 1918.

26889. Jan. 5, 1918.—Amending order 26850, Dec. 21, 1918, re C.P.R. application to build spur on Souigny Ave., Montreal.

26890. Jan. 4.—Ordering G.T.R. to lower roadway at subway at Komoka, Ont., 1 ft. and to raise track 1½ ft., to be completed by May 31.

26891. Jan. 4.—Ordering G.T.R. not to exceed 10 miles an hour over Paquette's crossing, Hawkesbury Tp., Ont.

26892. Jan. 4.—Authorizing Canadian Northern Ry. to cross and divert highway between s. w. ¼ Sec. 4, Tp. 43, Range 13, and n. e. ¼ Sec. 32, Tp. 42, Range 13, west 3rd meridian, Sask.

26893. Jan. 7.—Authorizing Hydro-Electric Power Commission of Ontario to build, subject to agreement with Michigan Central Rd., Dec. 17, 1917, a power development canal and construction railway under M.C.R. in Lot 57 Stamford Tp., Ont., and to divert railway temporarily.

26894. Jan. 8.—Authorizing Dominion Atlantic Ry. to build spur for Killam Bros., Yarmouth, N.S.

26895. Jan. 9.—Authorizing Canadian Northern Ontario Ry. to build spur for Imperial Oil Co. at North Bay, Ont.

26896. Jan. 9.—Authorizing C.P.R. to build fender round centre pier of bridge over St. Maurice River, mileage 1.8, Cap de la Madeleine Subdivision, Que.

26897. Jan. 11.—Amending order 26890, Jan. 4, re G.T.R. subway at Komoka, Ont.

26898. Jan. 7.—Ordering that tolls of Canadian Northern Express Co. shall include collection and delivery in portion of Pas, Man., bounded continuously by further side of 7th St., Hudson Bay Ry. and Saskatchewan and Pas Rivers.

26899. Jan. 11.—Approving Northern Pacific Ry. standard freight tariff of maximum tolls, C. R.C. 375, between its stations in British Columbia.

26900. Jan. 12.—Relieving C.P.R. from providing further protection at east public crossing, Vandrevuil, Que.

26901. Jan. 14.—Authorizing C.P.R. to file tariff to provide for special toll of \$1 a car per day for detention of cars containing western grain and grain products at Cartier, Ont., for more than 72 hours while awaiting furtherance orders from consignees; tariff effective Feb. 1.

26902. Jan. 14.—Ordering C.P.R. to place cars for loading of grain at Birnie Milling Co.'s elevator, Medicine Hat, Alta.

26903. Jan. 14.—Ordering G.T.R. not to exceed 10 miles an hour in crossing of highway immediately south of station at Holland Landing, Ont.

**Warning Signs for Grade Crossings.**—The Board of Railway Commissioners' secretary issued the following circular to railway companies on Jan. 15: "The board's enquiry into a recent accident at a highway crossing, protected by a watchman, brought out the fact that the occupants of the automobile evidently became confused in the signals given by the watchman. The board is impressed with the necessity of railway companies adopting some standard signal other than the style of flag now in use by crossing watchmen. Railway companies are, therefore directed to consider the adoption of a metal disc, 16 in. in diameter, having a white ground, with the word "Stop" in large letters in black thereon, filing their comments with the board within 30 days of the date of this circular."

**Engineering and Technical Institute of British Columbia.**—Civil engineers and land surveyors of British Columbia are applying to the legislature for incorporation under this title. The institute will also admit to membership architects and others engaged in purely technical occupations.



# The Restoration of the Canadian Government Railways Property at Halifax.

The restoration work at Halifax is being carried on under the general direction of C. B. Brown, Assistant General Manager, and Chief Engineer, Canadian Government Railways, at Moncton; W. A. Duff, Assistant Chief Engineer, and Engineer of Bridges, being in direct charge at Halifax, with office at 137 Barrington Street, C. H. Edgett, being Purchasing Agent and F. M. MacLennan, Auditor. Mr. Duff was at Halifax when the explosion occurred and acted most promptly. Telegraph connection being destroyed, he motored to the nearest station from which he could telegraph, and made a most gra-

completed. The North St. power house roof has been completed, and a boiler put in place and bricked in.

New pier 2: The repairs are about 85% complete. All doors upstairs are in place and glazed. All doors on the south side downstairs are in place and being glazed. Sixteen pairs of doors are in place on the north side. Practically all the branch return pipes have been installed, and the work is still proceeding. All mains, returns, connections and traps will be installed as soon as received. Doors for the north side are being straightened and repaired. The pier and shed have been

The deepwater local freight shed has been repaired.

Grain Elevator. — Temporary repairs are finished. The elevator has been boarded in on the north side and covered with rubberoid finished, and repairs are now being made to the roof on the east side of the building. It has been in use since Dec. 24 and the permanent repairs are about 60% completed. The boiler house building is completed and the boiler put in place and bricked in. The carpenter shop building is boarded in and roof covered with rubberoid, and work is proceeding on the interior of the building.



Halifax Disaster—North Street Station, Canadian Government Railways.

The graphic description of the damage done to the Canadian Government Railways property at Halifax by the explosion on Dec. 6, by F. B. Tapley, Assistant Engineer of Maintenance, C.G.R., published in Canadian Railway and Marine World for January, has evoked considerable favourable comment. We were then only able to show the exterior of the station before the explosion. The views given above were taken some time after the train shed roof had collapsed and when traffic had been resumed. The upper left hand one is looking into the train shed from the track entrance. The upper right hand one shows the train shed minus the roof, from the outside. The two lower views show the interior of the shed.

phic and correct report of the extent of the damage to General Manager Hayes at Moncton, detailing relief, etc., required and enabling prompt action to be taken to rush special trains with doctors, nurses, supplies, etc. Very full particulars as to the railway property were given in Canadian Railway and Marine World for January. We have since been favored with the following particulars of the reconstruction work done up to Jan. 18:—

At North St. station temporary repairs have been carried on both inside and outside of building. The stairs leading to the station have been repaired and are in service. The linen room and express offices have been made water tight. An awning for the concourse has been erected, and will be covered with rubberoid as soon as work in front of building is

in service since Dec. 26.

Pier 3.—Seventeen trusses on the north side have been repaired and repairs were made to side of shed, where necessary. About 200 ft. of track for doors on the north side have been removed, straightened, and replaced. The work is about 75% complete.

Pier 4.—The wreckage from roof and sides of shed has been cleared away. The floor of the annex has been taken up, so that piles can be driven. Stringers and a plank on north side of pier are being finished so that track can be used. The shed is being rebuilt and is about 25% complete.

Pier 9, Richmond.—The debris has been cleared away and also debris on tracks leading to the pier and the pier is now in shape to be used as an open pier.

At Richmond the debris has been cleared away from about 85% of the tracks in the yard and they are being put into service as fast as repairs can be made to them. The water tank at Richmond has been temporarily repaired and has been in service since Dec. 9. All Hudson Bay timber has been loaded and shipped to the south terminals. Pier 9 and three tracks in connection with it have been cleared, and can be used at any time for handling deals, or any other cargo which does not require shed space. The water tank has been temporarily repaired and is giving good service. The sugar refinery site is being cleared.

At Willow Park temporary repairs have been made to 18 stalls in the locomotive house and temporary repairs are being made to 6 additional stalls. The



dangerous portions of the roof of sections 5 and 6 have been removed. Section 4 is being repaired. The "I" beams and columns of this section are straightened, and joists and sheathing are being put in place. The machine shop lower windows are being put in place. Windows are being obtained by salvaging from machine shop and from sections 5 and 6 of locomotive house. The work is about 75% completed. At the bunk house the carpenter work is completed, and the plumbing work is about 75% completed. Sashes are being placed in the office building. Temporary repairs to the stores building are complete and the permanent repairs are now finished. Two bad leaks were discovered in the mains and were repaired and a better supply obtained at the stand pipe.

At the ocean terminals two freight sheds, 600 x 90 ft. each, are being constructed to take the place of sheds which were destroyed by the explosion. They are known as sheds 25 and 28. Grading for tracks near the sheds is finished. Grading for roadway between sheds is finished. Pile driving for shed 28 is completed. Twenty-five per cent. of the floor decking has been placed on the north half of shed 28; 90% of floor grillage has been

has been completed; 125 men are employed on this work. The excavation for foundations of the new garage are complete, and forms for concrete foundation in place; 14 men are employed in this building. At the police office and residence the repairs are well advanced and the building should be shortly completed.

At the torpedo shop a gang is at work taking down trusses and dismantling them, and straightening them to be re-erected; 8 men are employed on the work. Repairs are proceeding on houses 8, 7 and 6. At the small boat slip and shed a small gang is at work dismantling. About one-quarter of the work is completed. At the gymnasium building the brick work is repaired, and half of roof repaired and covered with rubberoid roofing.

### Halifax Disaster Special Train Service on the Canadian Government Railways.

Following are particulars of the special trains run on the Canadian Government Railways between Dec. 6 and 11 in connection with the explosion at Halifax, N.S.:

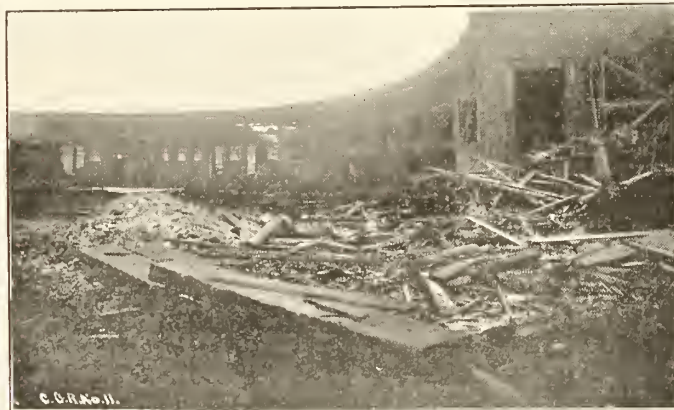
Dec. 6. From College Bridge, 164 miles, 10 cars Amherst fire brigade, 1 car food

Dec. 8. From St. John, 274 miles, 13 cars. Massachusetts and Maine Relief; 6 baggage cars, 1 1st class and 6 sleepers. From Maine 13 doctors, 4 nurses, 6 Maine Government staff and 2 orderlies, 7,100 blankets, 750 cots. From Massachusetts, 25 doctors, 65 nurses, 8 orderlies. This train had also hospital supplies, cots, and blankets for 500 cots complete.

Dec. 8. From St. John, 274 miles, 5 cars. City of New York. 1 doctor, representing medical department U. S. Government; 1 nurse representing civilian relief U. S. Red Cross; 1 representative Quartermaster Store Department, U. S. Government; 1 Red Cross representative in charge of train; 6 U.S. press men; 10,000 blankets, 10,000 sweaters, 7,000 pairs socks, 1 car food, 100 cases civilian clothing, for men, women and children; 40 cases surgical bandages, 100 gals. liquid disinfectant, 10 bales absorbent cotton.

Dec. 9. From St. John, 274 miles, 14 cars. Montreal relief. Food supplies and private car. Picked up cars of food, also coffins.

Dec. 9. From St. John, 274 miles, 8 cars. Providence, R.I., relief. Baggage car, condensed milk and doctor's outfit; baggage car with bread, window sashes,



Interior and Exterior of Canadian Government Railways Locomotive House at Willow Park, after the Halifax Explosion.

completed on south half of shed 28, with the exception of platform grillage which has not been started yet; 75% of floor girders have been placed on the south half of shed 28; all the columns for shed 28 have been cut to length, and 50% of the brace blocks have been nailed in place and 25% bored for lag screws. Six bents for the north side of shed 28 have been laid out. Good progress is being made and the framing of the superstructure will be well under way this week.

The repairs to the transmission line are over 60% complete. The telephone dispatching line between North St. station and Rockingham has been put back into service.

The Canadian Government Railways officials are also attending to the repairing of the Naval Service Department property; the damage to which is described in the marine department further on in this issue. At the Naval Hospital the lathing has been replaced on the attic and second floor. The concealed electric wiring has been installed in the second floor and attic. Eight out of 12 hot water heating returns have been repaired and put into service. Plastering is proceeding on the second floor. About 56 men are employed on this hospital. At the Naval Dockyard store A has the floor and all the main posts set, with the exception of 4. Store B has the foundation in and half the floor in position. At store D, 50% of the excavation for the grillage

supplies and 8 boarding cars.

Dec. 6. From Moncton, 185 miles, 8 cars, 1 baggage car, 1 hospital commissary, 2 hospital tourists, 1 first class, 2 standard sleepers and general managers' car. This train had railway officials, doctors, nurses and hospital supplies.

Dec. 6. From Moncton, 185 miles, 9 cars Moncton fire brigade, 2 cars, wrecking crane and outfit, 3 hospital and 1 colonist cars.

Dec. 6. From Moncton, 185 miles, 13 cars, 3 box cars, food supplies from Moncton, 7 first class, 1 sleeper, 1 official with doctors and nurses, 1 car food supplies from Sackville.

Dec. 6. From Moncton, 185 miles, 24 cars; steam shovel, small crane, 1 car track spikes, 1 car stores, lanterns, etc., and other cars with food supplies. With this train were 3 gangs workmen consisting of 3 foremen and 15 men.

Dec. 6. From Sydney and New Glasgow, 5 cars. General Superintendent, doctors and nurses.

Dec. 7. From Pictou, 115 miles, 4 cars. Premier Borden and party of doctors and nurses from Charlottetown. In connection with the Premier's special a special trip of the s.s. Aranmore was made from Charlottetown to Pictou.

Dec. 7. From St. John, 274 miles, 5 cars. Massachusetts State Relief; 2 baggage cars, 1 diner, 2 sleepers, with 16 doctors, 15 to 20 nurses, and hospital supplies.

glass and clothing; 1 diner, 5 sleepers; 50 doctors, 50 nurses, 1 chauffeur, 1 druggist, 3 lady secretaries, 2 social workers. Dr. Hough in charge. Dr. Marshall in charge of supplies; Miss Baldwin, head of Red Cross.

Dec. 9. From St. John, 274 miles, 6 cars. Bangor, Me., relief. 2 baggage cars, 2 1st class, 2 sleepers, Christian Science Monitor, doctors and nurses, 35 in party, clothing, blankets and other supplies.

Dec. 14. From St. John, 274 miles, 9 cars. Montreal relief. 4 cars window glass, 2 cars beaver board, 2 cars roofing 1 car lumber.

Dec. 10. From Montreal. 830 miles, 11 cars food supplies.

Dec. 10. From Montreal. 830 miles, 24 cars food supplies.

Dec. 10. From Montreal, 830 miles. 5 cars. 3 cars with clothing and provisions, 2 private cars with doctors, nurses and officials of the T. Eaton Co., Toronto. Sir John Eaton was with this train.

Dec. 10. From Montreal. 830 miles. 11 cars. Toronto relief. 1 car building supplies, 3 baggage cars, 6 colonists, 1 sleeper. This train had carpenters, plumbers and machinists with tools, etc., 8 officers and 337 men.

Dec. 10. From Montreal, 830 miles. 20 cars auto trucks and supplies from Ottawa.

Dec. 11. From Montreal, 830 miles. 25 cars supplies, meat, etc., from Ottawa.



## Birthdays of Transportation Men in February.

Many happy returns of the day to:—

B. H. Bennett, General Agent, Chicago & North Western Ry., Toronto, born at Cobourg, Ont., Feb. 6, 1858.

T. Britt, General Fuel Agent, C.P.R., Montreal, born there Feb. 3, 1871.

J. S. Byrom, General Superintendent, Sleeping, Dining and Parlor Cars, and News Service, Eastern Lines, C.P.R., Montreal, born at Jersey City, N.Y., Feb. 10, 1872.

J. J. Callahan, Superintendent, Oshawa Ry., Oshawa, Ont., born at New Glasgow, Que., Feb. 25, 1875.

H. R. Charlton, General Advertising Agent, G.T.R. and G.T.P.R., Montreal, born at St. Johns, Que., Feb. 9, 1866.

R. Colclough, Superintendent, District 1, Transcontinental Division Canadian Government Railways, Quebec, Que., born at Bic, Que., Feb. 24, 1871.

R. Crawford, Northwest Agent, Northern Navigation Co., Winnipeg, Man., born at Kingston, Ont., Feb. 21, 1870.

A. J. Donegan, ex-Superintendent, Algoma Eastern Ry., now at Nickelton, Ont., born at Perth, Ont., Feb. 17, 1872.

R. W. Drew, Division Freight Agent, Saskatchewan District, C.P.R., Regina, born at Kingston, Ont., Feb. 17, 1874.

E. A. Evans, M.Can.Soc.C.E., ex-General Manager and Chief Engineer, Quebec Ry., Light & Power Co., Quebec, born at Kensington, London, England, Feb. 26, 1855.

Goodwin Ford, General Superintendent, Western Lines, Dominion Express Co., Winnipeg, born at Bordentown, N.J., Feb. 23, 1859.

U. E. Gillen, Vice President (Operating), G.T.R., Montreal, born at Brooklyn, Mo., Feb. 27, 1867.

T. C. Hudson, Division Master Mechanic, Quebec Division, Canadian Northern Ry., Joliette, Que., born at Brockville, Ont., Feb. 20, 1873.

H. Hulatt, Manager of Telegraphs, G.T.R. and G.T.P.R., Montreal born at London, England, Feb. 15, 1883.

C. Gardner Johnson, Lloyd's Agent for British Columbia, Vancouver, B.C., born at Dunblane, Scotland, Feb. 8, 1857.

F. C. Johnson, General Foreman of Shops, C.P.R., Moose Jaw, Sask., born at Montreal, Feb. 26, 1885.

A. H. Jones, Assistant Engineer, Canadian Government Railways, Moncton, N. B., born at Liverpool, Eng., Feb. 16, 1884.

John McCraw, General Agent, Central Vermont Ry., New London, Conn., born at Craigvale, Ont., Feb. 6, 1868.

G. L. McCrear, Local Freight Agent, C.P.R., Vancouver, B.C., born at Springtown, Ont., Feb. 9, 1876.

T. McNab, ex-Master Mechanic, Alberta Ry. & Irrigation Co., now of Picture Butte, Alta., born in Scotland, Feb. 16, 1849.

J. K. McNellie, Superintendent, Susquehanna Division, Delaware & Hudson Co., Oneonta, N.Y., born at Toronto, Feb. 23, 1874.

J. D. McNutt, Inspector of Train Dispatching, Canadian Government Railways, Moncton, N.B., born at Steviacke, N.S., Feb. 8, 1873.

D. C. Macdonald, Assistant General Claims Agent, C.P.R., Winnipeg, born at Elmsdale, N.S., Feb. 9, 1874.

C. S. Maharg, Superintendent, Brandon Division, Manitoba District, C.P.R., Brandon, born in Dufferin County, Ont., Feb. 4, 1867.

V. J. Melsted, ex-Engineer of Water Service, C.P.R., Winnipeg, born at Gardar, N.D., Feb. 20, 1887.

G. A. Montgomery, Vice President and General Manager, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., born at Bradford, Ont., Feb. 11, 1871.

A. Z. Mullins, Commercial Agent, G.T.R., Grand Rapids, Mich., born at Ap-pin, Ont., Feb. 14, 1862.

M. G. Murphy, General Agent, Passenger Department, C.P.R., Detroit, Mich., born at Halifax, N.S., Feb. 26, 1878.

J. E. Proctor, District Passenger Agent, C.P.R., Regina, Sask., born at Sarnia, Ont., Feb. 17, 1878.

C. T. Ridalls, Car Foreman, C.P.R., London, Ont., born at St. Heliers, Jersey, Channel Islands, Feb. 8, 1864.

A. E. Rosevear, General Freight Agent, G.T.P.R. and Grand Trunk Pacific Coast Steamship Co., Winnipeg, born at Montreal, Feb. 20, 1863.

J. G. Scott, ex-General Manager, Quebec & Lake St. John Ry., Quebec, born there Feb. 13, 1847.

J. J. Scully, General Superintendent, Algoma District, C.P.R., North Bay, Ont., born at Montreal, Feb. 3, 1872.

G. Spencer, Chief Operating Officer,

Board of Railway Commissioners, Ottawa, born in London, Eng., Feb. 21, 1865.

R. H. Sperling, Advisor to the Board, British Columbia Electric Ry., London, Eng., born there, Feb. 9, 1876.

H. E. Suckling, Treasurer, C.P.R., Montreal, born at Gibraltar, Feb. 27, 1851.

Hugh Sutherland, Executive Agent, Canadian Northern Ry., Winnipeg, Man., born at New London, P.E.I., Feb. 22, 1845.

F. L. Wanklyn, M.Can.Soc.C.E., General Executive Assistant, C.P.R., Montreal, born at Buenos Ayres, Feb. 25, 1860.

J. R. Watson, Assistant Superintendent, Sleeping, Dining and Parlor Cars, and News Service, Eastern Lines, C.P.R., Montreal, born at Morpeth, Eng., Feb. 8, 1873.

A. Williams, Superintendent, London Division, Ontario District, C.P.R., London, born at Mono Road, Ont., Feb. 22, 1872.

The Winnipeg Jitney Owners and Drivers' Association at a meeting held Jan. 20, made arrangements to fight all attempts to put them out of existence. There are about 250 jitneys operating in the city according to a statement made at the Board of Control, Jan. 7.

## The Canadian Pacific Railway's Honor Roll No. 29

Abbott, David	Checker	Toronto	Killed in action
Adams, Jas.	Switchman	Calgary	Presumed dead
Bagnell, Alex.	Shedman	Bowmanville	Wounded
Beamish, Wm. Richard	Car repairer	Moose Jaw	Wounded
Bossley, Jas.	Locomotive fireman	British Columbia Dist.	Wounded
Burton, Leslie Wm.	Asst. steward	Winnipeg	Wounded
Cameron Adam R.	Clerk	Montreal	Killed in action
Cannon, Kenneth E.	Wiper	Winnipeg	Presumed dead
Chandler, Reginald R.	Cook	Montreal	Killed in action
Christie, Andrew F.	Clerk	Winnipeg	Wounded
Clarke, E. Vincent	Timekeeper	Medicine Hat	Wounded
Clarke, Wm. B.	Clerk	Toronto	Died of wounds
Colebrook, William	Stower	St. John, N.B.	Killed in action
Crane, Horace F.	Stower	Calgary	Killed in action
Dillon Ernest H.	Sectionman	Douglas	Wounded
Dudley, John	Shipper	Winnipeg	Wounded
Ewen, John Douglas	Clerk	Toronto	Wounded
Gillies, Wm. John	Fireman	Winnipeg	Wounded
Green, Arthur	Asst. agent	Foam Lake	Killed in action
Hack, Cyril	Fitter's helper	Field	Wounded
Haldane, Ewen McG.	Clerk	Sudbury	Died of wounds
Hamilton, William	Sectionman	Estevan	Wounded
Hancock, Albert P.	Foreman and checker	Winnipeg	Wounded
Harrison, George R.	Draftsman	Winnipeg	Wounded
Hiam, Gerald	Dist. Freight Agent	Fort William	Wounded
Hobson, Andrew J. H.	Operator	Douglas Pit	Killed in action
Hooper, Henry S.	Clerk	Portage la Prairie	Wounded
Hendry, Frank G.	Locomotive man	British Columbia Dist.	Died of wounds
Hughes, Wm. G.	Clerk	Montreal	Wounded
Jacobs, William	Machinist's helper	Ogden Shops	Wounded
Jobling, Richard	Bridgeman	Lethbridge	Died of wounds
Joyce, Alfred W.	Clerk	Fort William	Wounded
Kemp, John Herbert	Clerk and operator	Peterborough	Wounded
Large, Wm. Chas.	Checker	Port McNicoll	Wounded
McCauley, Jeremiah	Conductor	North Bay	Gassed
MacDonald, Daniel J.	Clerk	Halifax, N.S.	Died of wounds
McDonnell, Roderick	Locomotive man	North Bay	Killed in action
McInnes, Christopher	Asst. Checker	Kamloops	Gassed
Malkinson, Wilfred	Machinist's helper	Calgary	Wounded
Mason, George	Yardman & switchman	Montreal	Wounded
Meeson, Oscar D.	Billar	Winnipeg	Presumed dead
Moyle, Jas. Henry	Brakeman	Chapleau	Wounded
Newbold, Alfred H.	Head storeman	Winnipeg	Died of wounds
Orchard, Larnach	Steward	B.C. Coast Steamers	Wounded
Overy, Albert	Car cleaner	Moose Jaw	Gassed
Parfitt, Reginald J.	Clerk	Montreal	Wounded
Phillips, Mark V.	Steward	B.C. Lake & River Strs.	Wounded
Porter, Clarence R.	Car checker & biller	Owen Sound	Presumed dead
Prince, Lionel	Boilermaker	Winnipeg	Killed in action
Reid, John Moir	Steward	B.C. Coast Strs.	Killed in action
Richards, Francis P.	Accountant	Winnipeg	Wounded
Rose, Thomas	Loader	Vancouver	Wounded
Scales, A.	Miner	Calgary	Wounded
Sharples, John	Fireman	Sutherland	Wounded and gassed
Sly, George W.	Foreman	Farnham	Wounded
Smith, Hubert	Triple tester	Winnipeg	Gassed
Smyth, William	Clerk	Winnipeg	Wounded
Sturges, Samuel	Truck repairer	Winnipeg	Killed in action
Surridge, John B.	Painter's cleaner	Winnipeg	Wounded
Turnbull, Alexander	Baggage porter	Calgary	Wounded
Turner, Alfred	Car cleaner	Brandon	Killed in action
Type, Augustus	Specialist	Montreal	Wounded
Van Loon, Emile	Check boy	Calgary	Killed in action
Vidal, Maurice H.	Clerk	Sudbury	Killed in action
Warner, Harry	Locomotive fireman	Kenora	Shell shock
Wheatley, George J.	Clerk	Montreal	Wounded
Wilson, James	Machinist	Winnipeg	Died of wounds
Woodwards, George	Checker	North Bay	Killed in action
Young, Rainsford	Clerk	Winnipeg	Wounded

Shown on Honor Lists to Dec. 1, 1917: Killed, 541; wounded, 1,154; total, 1,695.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta-Hudson Bay Ry.**—Surveys are reported to be in progress for a railway from Medicine Hat, southerly through Coutts, Alta., at the International boundary, with an extension in the United States, to connect with the Great Northern main line at Great Falls, Mont. C. B. Miles is said to be in charge of surveys.

This is the project originally initiated in Alberta under the title of the High River and Hudson Bay Ry., and in Saskatchewan as the Saskatchewan and Hudson Bay Ry., and under the Dominion Charters of the High River, Saskatchewan and Hudson Bay Ry., and the Calgary and Fernie Ry. The A. H. B. Ry. is the new title of the Alberta section of the undertaking, and the surveys reported to be under way cover the portion of new mileage authorized by the Alberta Legislature in 1917. (May, 1917, pg. 194; June, 1917, pg. 224.)

**Alma & Jonquiere Ry.**—The Quebec Legislature has extended the time for the building of this projected railway from LaBarre or St. Gedeon, on the Quebec & Lake St. John Ry., to Little Discharge, to Alma Island, and through Signal, La Barre, Kenogami and Jonquiere Tps., to Jonquiere station on the Q. & St. J. Ry. (Dec., 1917, pg. 470.)

**Calgary and Coal Range Ry.**—The Alberta Legislature is being asked to incorporate a company to build a railway from Calgary south westerly to a point in either Tp. 19 or 20, in Ranges 2, 3 or 4 west 5th Meridian, thence south and south easterly to Tp. 16, Range 1, west 5th Meridian and thence southwesterly to the headquarters of Johnston Creek. Short & Cross, Edmonton, Alta., are solicitors for the applicants.

**The Canadian Northern Ry.'s locomotive house** at Portage la Prairie, Man., was destroyed by fire, Jan. 16.

A transfer track is reported to be under construction at Stebbler, Alta., to connect the Canadian Pacific and Canadian Northern Railways. It was expected to have the connection made by Jan. 31. Stettler is on the C. N. Ry.'s Vegreville-Calgary line, and on the C. P. R.'s Kerrobert-Lacombe line. (Jan. pg. 12.)

**Grand Trunk Pacific Ry.**—It is reported that negotiations are practically completed under which the G. T. P. R. will utilize certain of the C. P. R. tracks in Saskatoon, Sask. At present the company runs outside Saskatoon, and in order that its trains may run through the C. P. R. station, connections will have to be made with that company's tracks near Floral on the east and Cory on the west. (Jan. pg. 12.)

**Grand Trunk Ry.**—Brantford, Ont., ratepayers voted Jan. 7, by a majority of 272, in favor of a bylaw to raise \$40,000 by debentures towards the cost of constructing a subway under the G.T.R. tracks at St. Paul Ave.

In connection with the reduction of train service on the old London, Huron & Bruce Ry. between London and Wingham, Ont., a proposition is being discussed in the municipalities through which it runs in favor of the electrification of the line. (Jan., pg. 12.)

**Great Northern Ry.**—The old frame building on Pender St., Vancouver, B.C., formerly used by the G. N. R. as a passenger station, and which has been closed since the opening of the new building on False Creek, is to be renovated and refitted for a stores building.

The new concrete and steel bridge which opens the North Road at Coquitlam, built through the G. N. R. in straightening its tracks along the Brunette Creek, has been opened for public traffic. Track laying along the new cut-off has been practically completed. The cut-off will reduce the distance between New Westminster and Vancouver by about half a mile, and eliminates the level crossing at the Brunette bridge. On Jan. 2, there was a big landslide adjoining the new bridge, which buried the new track for several hundred feet. The clearing of this away will, it is estimated, cause a delay of about a month in the completion of the cut-off (Nov. 1917, pg. 433.)

**Kettle Valley Ry.**—We are officially advised that tenders have been asked for the grading of the projected branch from Penticton southerly to Copper Mountain, and for the building of the bridges thereon. A. McCullough, Penticton, B.C., is Chief Engineer. (Dec. 1917, pg. 471.)

**Michigan Central Rd.**—The Essex County Council is applying to the Ontario Legislature for the confirmation of an agreement respecting the use of a spur owned by the M.C.R. to convey sand and gravel for use under the Highway Improvement Act, from lands purchased by the county to the M.C.R. main line. (Aug., 1917, pg. 306.)

**Pacific Great Eastern Ry.**—A. F. Proctor, Chief Engineer of the British Columbia Department of Railways, has completed an inspection of the line and of the rolling stock. The inspection was made with a view of ascertaining how far the line has been damaged by the recent land slides. (Nov., 1917, pg. 433.)

**Quebec Bridge.**—A passenger train service was inaugurated over the bridge Jan. 6.

In connection with wild press reports as to contraction of the bridge during the winter, one being that there was a contraction of 9 ft., C. N. Monsarratt, chairman of the commission, is reported to have said that provision had been made in the structure for expansion and contraction of 36 in., which is sufficient to take care of a variation in temperature of 180 degrees. Between Dec. 18 and 30, when the greatest variation of temperature was 35 degrees, the contraction was only 4½ in. which was in accordance with expectations. (Jan., pg. 12.)

**Red Deer Valley Coal Co.**—The Dominion Government has leased to the company land in the S. E. ¼ Sec. of Sec. 9, Tp. 29, Range 20, west of the 4th Meridian, for the construction of a spur line from the Canadian Northern Ry.'s Vegreville-Calgary line, to the company's collieries.

**Toronto, Hamilton and Buffalo Ry.**—The City Solicitor of Hamilton has prepared a draft lease covering the taking over of Mountain face property by the T. H. & B. R. It provides for the payment of taxes and rents by the company, the prohibition of shunting on Sundays and week nights, between 10 p.m. and 6 a.m., and the removal of all ties, rails and equipment at the expiration of five years. The Council's railway committee was called together on Jan. 15 to pass on the lease before it was forwarded to the Board of Railway Commissioners for approval.

At a meeting of residents of the district on Jan. 18, a committee was formed to look after the interests of citizens and

to continue the fight against the company being given authority to expropriate the land covered by the proposed lease for railway yard purposes. A suggestion was made that a general organization of citizens should be formed for the purpose of forming public opinion in favor of the carrying out of the recommendations of the Tye-Cauchon report in their entirety. (See "The Railway Situation in Hamilton," Jan., pg. 17.)

**Western Power Co. of Canada and Western Canada Power Co.**—The W. P. Co. of Canada is applying to the Dominion Parliament to authorize it to operate the railway built by the W. C. P. Co. and described in sec. 1, chap. 175 of the statutes of 1910 as, from a point at or near the company's works at Stave River, B.C., southerly and westerly to a point on the main line of the C.P.R. between Ruskin and Hammond. This line was built in 1910 and has been used as a logging railway, an electric locomotive being used for hauling the cars. (Feb., 1914, pg. 70, Oct., 1910, pg. 833.)

## Canadian Pacific Railway's Victory Loan Float.

Following are some additional particulars of the C.P.R.'s float which was used in the Victory Loan parades in Montreal and Toronto in November, and which was illustrated and briefly described in Canadian Railway and Marine World for December: The float was built at the company's Angus shops, Montreal, under the direction of W. E. Woodhouse, Chief Mechanical Engineer, and was completed in 48 hours from the time instructions were issued to build it. This model was half the size of the company's standard D-10 freight and passenger locomotive, being 36 ft. over all.

It was constructed as follows: The propelling gear was two Little Giant one-ton trucks, operated independently by two operators. The float was supported on these trucks by centre pins, located centrally between front and back drivers of each truck, and side bearings were provided to steady the load. The frame proper, which supported the locomotive and tender was of rigid construction, having two centre pins which engaged with centre pins on the trucks as above mentioned. The boiler, cab and tender were built up of a wooden frame work, which was fastened rigidly to the main frame, after which boiler jacket steel, 22 gauge, was wrapped around the wooden framework, producing an effect identical with an actual locomotive. The air to blow the whistle was provided from two oxygen bottles, which were located in the tender. Smoke was made as follows: A pan of water was located in the stack, with about 1 in. clearance between the pan and the stack and a fusee was lit and placed below the water pot, the heat of the fusee boiling the water, and the steam and smoke from the fusee escaping through the stack, giving the appearance of a locomotive under steam. The hand-rails, grab irons, etc., were actual duplicates of the real things, the whole make-up being an excellent duplicate (from outside appearances) of a D-10 locomotive.

New Brunswick received \$57,197 from railways taxes for the year ended Oct. 31, 1917.



# Mainly About Railway People Throughout Canada.

**E. V. Bodwell, K.C.**, who died at New Westminster, B.C., Jan. 14, was Solicitor for the Great Northern Ry. at Vancouver.

**G. McL. Brown**, European Manager C.P.R., London, Eng., has been elected a member of the Pilgrims' Club.

**E. M. Goodman**, agent, Timiskaming & Northern Ontario Ry., Liskeard, Ont., has been elected mayor of the town for the current year.

**C. W. Price**, station agent, Canadian Government Railways, Moncton, N.B., has resumed his duties after a short absence through illness.

**H. R. Safford, M.Can.Soc.C.E.**, Chief Engineer, G.T.R., Montreal, has been nominated as Vice President, American Railway Engineering Association for 1918.

**Alex. Campbell**, who resigned his position as Traffic Manager, Edmonton, Dunvegan & British Columbia Ry. in Sept., 1917, has returned to the United States and is operating a ranch in Idaho.

**J. M. R. Fairbairn, M.Can.C.E.**, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal, has been nominated as a director of the American Railway Engineering Association for 1918.

**J. G. Scott**, formerly General Manager, Quebec & Lake St. John Ry., and now President, Quebec Board of Trade, has been elected President of the British Columbia Skeena Coal Co., Ltd.

**Bion J. Arnold**, of the Arnold Co., Engineers, Chicago, Ill., has been appointed a lieutenant-colonel in the aviation section of the Signal Corps of the U. S. Army, and assigned to foreign service.

**C. E. Horning**, District Passenger Agent, G.T.R., Toronto, has been elected a member of the Toronto Transportation Club's executive committee, to succeed E. Boland, Manager, Robert Reford Co., resigned.

**W. F. Tye, M.Can.Soc.C.E.**, Montreal, formerly Chief Engineer, C.P.R., is reported to have been named as a member of the Dominion Commission on Conservation, in place of the late Sir Sandford Fleming.

**F. P. Brady**, General Manager, Western Lines, Canadian Government Railways, Winnipeg, who was in Ottawa on business with the Railways Department, left there towards the end of January for treatment in the Royal Victoria Hospital, Montreal.

**E. R. Bremner**, who has been re-elected President of the Ottawa Board of Trade, was formerly Assistant General Freight Agent, Canada Atlantic Ry., subsequently District Freight Agent, G.T.R., and since then Canadian Manager, Watson & Todd, Ltd., lumber merchants, Ottawa.

**Sir Collingwood Schreiber, K.C.M.G., Hon.M.Can.Soc.C.E.**, General Consulting Engineer of the Dominion Government, who was confined to his house by illness for some little time, was able to be at his office in Ottawa again towards the end of January.

**D'Arcy Scott**, Assistant Chief Commissioner, Board of Railway Commissioners, and **S. J. McLean**, Commissioner, were appointed Sept. 17, 1908, so that their 10 years terms of office will expire Sept. 17, 1918. They are both eligible for re-appointment.

**Henry Fleming**, who died at Collingwood, Ont., Dec. 25, aged 86, after spending most of his life farming in that dis-

trict, was a brother of the late Sir Sandford Fleming, sometime Chief Engineer of the Intercolonial and Canadian Pacific Railways and afterwards a C.P.R. director.

**A. F. Mitchell**, who has been elected an associate member of the Canadian Society of Civil Engineers, is acting District Engineer in charge of harbor improvements at Victoria and Nanaimo, the construction and maintenance of government wharves, the graving dock at Esquimalt and other public works in British Columbia.

**Major-General Sir Percy Girouard**, Managing Director, Sir W. G. Armstrong, Whitworth & Co., Ltd., of England, at one time on the C.P.R. engineering staff, and subsequently associated with various rail-



**H. H. Vaughan**  
President, Canadian Society of Civil Engineers

way works under the British War Office, in England, Egypt, and South, East and West Africa, has been elected a member of the Pilgrims' Club, London, Eng.

**E. B. Tilt**, who has been elected an associate member of the Canadian Society of Civil Engineers, was formerly Engineer of Tests, Angus Shops, C.P.R., Montreal, and in 1915-16 he was Chief Inspector of steel for the Imperial Munitions Board, and subsequently went to Madrid, Spain, as President and General Manager, Sociedad Hispano-Americano Gaston Williams of Wigmore, C.A. He is at present in Canada.

**Daniel Todd Main**, Works Manager, C.P.R., Winnipeg, who has been elected an associate member of the Canadian Society of Civil Engineers, was born at Kirkintilloch, Scotland, June 18, 1878, and educated in the Isle of Man and Glasgow Technical College (Applied Science). He came to Canada in 1903, and entered Mackenzie, Mann & Co.'s service as draftsman, transferring to C. P. R. service in 1904, since when he has been, to 1907, draftsman; 1907 to Mar., 1908, Locomotive Foreman, Minnedosa, Man.; Mar., 1908, to Mar., 1910, Locomotive Foreman,

Cranbrook, B.C.; Mar., 1910 to Jan. 1912, District Master Mechanic, District 1, British Columbia Division, Nelson; Jan., 1912, to June 30, 1913, Master Mechanic, Saskatchewan Division, Moose Jaw; June, 1913, to Apr. 15, 1915, Master Mechanic, British Columbia Division, Vancouver; Apr. 15 to Apr. 20, 1915, Master Mechanic, Ontario Division, Toronto; Apr. 20, 1915, to Sept. 1916, Superintendent of Motive Power and Car Department, Eastern Lines, Montreal, and since Sept. 1916, Works Manager, Winnipeg.

**Henry Hague Vaughan**, who has been elected President, Canadian Society of Civil Engineers, was born at Forest Hill, Essex, Eng., Dec. 26, 1868, and educated at King's College, London. He served an apprenticeship with Nasmith, Wilson & Co., Patricroft, Manchester, Eng., and went to the U. S. in 1891. He was engaged with various companies as machinist, draftsman, assistant engineer of tests, and mechanical engineer, including the Great Northern Ry., Philadelphia & Reading Ry., and the Queen and Crescent Route, and after a period of service with a supply house, was appointed Assistant Superintendent of Motive Power, Lake Shore & Michigan Southern Ry., Mar., 1902, remaining until Feb., 1904, when he was appointed Superintendent of Motive Power, C.P.R., which position he held until his appointment as Assistant to the Vice President, Dec., 1906, from which position he retired in Apr., 1915, acting afterward as Consulting Engineer. He has been a member of the Canadian Society of Civil Engineers since 1906, a member of the council since 1910, and was elected Vice President in 1912. He is Vice President, Dominion Bridge Co., Vice President and General Manager, Dominion Copper Products Co., and President, Montreal Ammunition Co.

**Arthur H. Harris**, who has been made a Knight Commander of the British Empire, for his services in Canada as Director of Overseas Transport, was born at Devonport, Devonshire, Eng., Oct. 15, 1855. He came to Canada in 1874, and entered railway service that year, since when he has been, to 1887, secretary to Traffic Manager, G.T.R.; June, 1887, to Sept., 1889, Assistant General Freight Agent, Through Traffic, same road, Buffalo, N.Y.; Sept., 1889, to Jan. 1891, General Freight Agent, Through Traffic, same road, Detroit, Mich.; Jan., 1891, to May, 1892, District General Freight Agent, in charge of Southern Division, same road, Hamilton, Ont.; May 1, 1892, to Dec. 1, 1897, District General Freight Agent in charge of all lines east of Belleville, Ont., to the coast, same road; Dec. 1, 1897, to Aug. 1, 1898, General Traffic Manager, Intercolonial and Prince Edward Island Railways; Aug. 1, 1898, to Aug. 1, 1900, General Canadian Traffic Agent, Fitchburg Rd., Montreal; Aug. 1, 1900 to 1902, General Traffic Manager, Quebec Southern Ry., and also General Canadian Traffic Agent, Rutland Rd., Montreal. In 1902 he entered C.P.R. service as Special Traffic Representative, under Vice President Bosworth, and remained in that position until Aug., 1914, when he was loaned to the Imperial and Dominion Governments to organize and direct an overseas transport department, being given the title of Director of Overseas Transport.

**William Zobieski Earle, M.Can.Soc.C.E.** who died at Rothesay, N.B., Jan. 5, after a short illness, was born at Hamilton, N.B., July 23, 1854, and entered railway



service in 1871, as rodman, Intercolonial Ry. In 1872 he served as chairman on government surveys in Manitoba; 1873 to 1874, assistant in charge of party on land surveys; May to Dec. 1874, transit man, on city work and survey of St. John River, Public Works Department; 1875 to 1876, Assistant Engineer on location and construction, St. Martins and Aphaní Ry.; 1877, on survey on line from Bras d'Or to Broad Cove, N.S., and remeasurement of Albert Rd.; 1878 to 1880, private practice at St. John, N.B.; 1880 to 1881, Assistant Engineer on location on the second 100 miles of the C.P.R. west of Winnipeg, for the Dominion Government; Mar. 1881 to Apr. 1883, Assistant Engineer, C. P. R.; Apr. 1883 to Oct. 1886, Division Engineer on construction through the Rocky Mountains, C.P.R.; May to Aug. 1887, Division Engineer on extension, Sherbrooke, Que., easterly, C.P.R.; Aug. 1887 to Mar. 1891, Resident Engineer, Oregon Pacific Ry.; Apr. 1891 to July 1892, Chief Engineer, Peninsular Ry. of Lower California; Sept. 1892 to Mar. 1893, Chief Engineer, Coor Bay Roseburg and Eastern Ry., Oregon; Mar. 1893 to Jan. 1896, Principal Assistant Engineer, Bangor and Aroostook Ry., Maine. He was subsequently, Engineer in charge of harbor improvements, St. John, N.B.; Resident Engineer, Public Works Department, Sault Ste. Marie, Ont.; and Manager, St. John Ry., St. John, N.B.; resigning the last named position in 1910 on his appointment as District Engineer, Public Works Department, Winnipeg, and later at Prince Albert, Sask. He left the west for Rothesay, N.B., toward the end of 1917, on account of his health.

### Salisbury and Albert Railway Operation.

This S. & A. Ry. line extends from Salisbury, N.B., on the Intercolonial Ry. near Hillsboro, to Albert, 45 miles, entirely in Hillsboro County. It is one of the lines which it was proposed that the Dominion Government should take over and operate as an Intercolonial branch. One train a day, in either direction, has been operated over the line, but for a considerable time past there has been a good deal of complaint made as to the service given. Since the beginning of the present year there has not been any service between Hillsboro and Albert. As the result of a petition from the district the Minister of Railways, on Jan. 11, authorized the Intercolonial officials to operate the line immediately. Whether this will be only a temporary expedient, or whether it is preliminary to the taking over of the line as a regular branch line, has not been announced.

**Pere Marquette Ry. Track Awards.**—Results of the awards of prizes in connection with the annual track inspection, conducted by the President, were announced recently. A prize of \$100 for the district showing the greatest improvement during the year, was awarded to H. Morris, Roadmaster, Canadian Division, Walkerville, Ont., and another prize of \$100 for shop grounds and buildings, was awarded to Charles Montgomery, Division Master Mechanic, Canadian Division, St. Thomas, Ont.

**Timiskaming & Northern Ontario Ry.** Passenger earnings for Nov., \$55,625.49; freight earnings \$116,033.01; total earnings \$171,658.50, against \$55,039.83 passenger earnings; \$105,798.45 freight earnings; \$160,838.28 total earnings for Nov., 1916.

### Meritorious Services by Canadian Pacific Railway Employees.

The educational bulletins issued by the general superintendents of the company's various districts record the following meritorious services performed by employees recently:—

Chas. Henderson, conductor, New Brunswick District, while in charge of a passenger train detected an unusual jar. He immediately stopped his train, and on investigation found a piece of 18 in. broken out of one of the rails. His commendable alertness undoubtedly prevented an accident.

Edgar G. Beal, conductor, Brandon Division, while in charge of train, noticed that it had passed over a rough spot in the track. He immediately stopped the train and went back and found a broken rail. His vigilance and action are commendable.

The locomotive man on an outgoing passenger train, the rear of which was close to the entrance to the station, backed his train up in order to avoid being struck by an incoming passenger train. He did this without receiving any signal. The prompt action of a trainman in applying the brake no doubt averted an accident.

A locomotive man, assisted by his fireman, replaced broken bolts in tender drawbar strap on wayfreight locomotive on a branch line, completed the trip, and returned to the terminal the following day with repairs made. This avoided considerable delay to the train and also light movement of power.

Trainman G. Gill, while examining train at Streetsville Jct., Ont., discovered broken wheel on car. This emphasizes the importance of close inspection being given by trainmen to their trains when standing at stations or in sidings.

Conductor Orndorff, after passing switch at Galt grade reduction, noticed marks on the track and immediately applied the brakes. On examination of the train one pair of trucks of snow plow were found to be derailed.

### Disposition of Cars Containing Food or Food Products.

A Dominion order in council, under the War Measures Act, 1914, was passed Dec. 24, 1917, providing regulations regarding the loading, detention and disposition of cars containing food and food products, as follows:—

1. A freight car containing food or food products shall not be allowed to remain under load at its destination on any railway in Canada for a longer period than four days after notice of its arrival has been given by the railway company to the consignee of such food or food products.

2. When any freight car containing food or food products remains under load at its destination for a longer period than four days after such notice has been given as aforesaid, the railway company holding such freight car shall notify the Food Controller thereof.

3. When any freight car containing food or food products is held at any railway point in Canada for a furtherance order and such order is not given by the consignee of the said goods within one day of the time of the arrival of the car at such point, the railway company holding such freight car shall notify the Food Controller thereof.

4. Whenever, by reason of such notice or otherwise, it comes to the knowledge

of the Food Controller that any freight car containing food or food products has remained under load at its destination for a longer period than four days, or has been held at any point for furtherance order for a longer period than one day after notice of its arrival has been given to the consignee as aforesaid, the Food Controller may send a written notice by registered mail or by telegram to the consignee that unless the freight car is unloaded or a furtherance order given, as the case may be, within two days from the date of such notice, the food or food products contained in such freight car will be seized by the Food Controller and sold, and if such freight car is not unloaded or a furtherance order given, as the case may be, within the said two days, the Food Controller may thereupon seize the contents of the said car and sell them in such manner as he may deem best, and, after paying all charges for freight and for the expenses connected with the seizure and sale, the Food Controller shall pay the balance, if any, of the proceeds of the sale to the said consignee.

5. The officers of any railway company by which a car or cars is or are being held for unloading or for furtherance orders shall furnish the Food Controller, or any person thereto authorized by the Food Controller, with all information that the Food Controller or such person may require with respect to the date of the arrival and the nature of the contents of any freight car under load held by the railway company at the point or points with respect to which any inquiry is made.

6. The Food Controller may forbid any railway company from accepting any food or food products for transportation from any shipper whose goods have been seized and sold under the provisions of these regulations, without the written permission of the Food Controller.

7. Any person neglecting or refusing to send any notice or give any information required or authorized by these regulations, or accepting any goods for shipment contrary to the provisions of section six of these regulations, shall be guilty of an offence and liable on summary conviction to a fine not exceeding \$500, or to imprisonment for a term not exceeding six months, or to both fine and imprisonment.

Union Collieries, Limited, is the title of a company incorporated under the Dominion Companies Act with an authorized capital of \$1,000,000, and office at Montreal. The primary purpose of the company is to acquire the lands and property in Alberta of the Diamond Coal Co., which is in liquidation. This company owned a short line of railway, extending from Kipp, on the C.P.R., to Diamond City. The new company has power to operate steam and other vessels, docks, wharves, elevators, warehouses, freight sheds, etc.; and to lay tramways, switchers, sidings, etc., on its own lands.

**Sir William Reid charged with libel.**—Hon. W. F. Coaker, a member of the Newfoundland Government, laid an information early in January against Sir William D. Reid, ex President, Reid Newfoundland Co., charging him with criminal libel, in a letter to Lord Shaughnessy, in which references were made to a visit to Ottawa by Mr. Coaker, during which he was to be "educated" as to the advisability of Newfoundland confederating with Canada. Sir William was released on \$40,000 bail, giving his personal bond of \$20,000 and two bondsmen of \$10,000 each.



## Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We would be glad to be favored in this respect.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, up to Sept. 30, 1917, had contributed \$64,616.96 to the Canadian Patriotic and Red Cross funds.

The Grand Trunk Railwaymen's Patriotic Association, Toronto, has contributed \$5,000 to the Canadian Patriotic and Red Cross Funds, making a contribution to date, of about \$30,000.

Canadian Officers Honored. The following were included in the honors announced in England on New Year's Day. Companions of St. Michael and St.

commanding the 2nd Signal Co. at the front.

Lieut. W. W. Cranston, Royal Engineers, who is reported as killed in action, was in the Canadian Northern Ry.'s engineering department, on the Boston Bar subdivision in British Columbia, under Division Engineer J. D. Black, as follows: From Sept. 24, 1913, until May, 17, 1914, as draftsman; from May 18, 1914, until Oct. 20, 1914, as Resident Engineer.

G. W. Curtis, formerly Industrial Agent, C. P. R., Montreal, who joined the Royal Flying Corps, Nov. 15, 1916, is now an acting flight commander in England. His commanding officer is reported to have recommended him for a first lieutenancy, and he expects to be sent to France at any time.

Capt. F. H. Moody, B.A.Sc., Jr.M.Can. Soc. C.E., formerly Mechanical Editor, Canadian Railway and Marine World, has been seconded for duty under the Ministry of Munitions (Air Board). He went overseas as a major with the 116th Battalion, C.E.F., but reverted to a captaincy

Hospital at Bromley, Kent. He is a brother of Allan Royce, Vice President, and Lt. Col. Geo. C. Royce, Secretary-Treasurer and General Manager, Toronto Suburban Ry.

Captain Robert Shore, and Lieutenants Duncan, McCaimon and Alfred White, of the Canadian Railway Troops, have been awarded the Military Cross.

### Canadian Railway Troops in the Cambrai Fighting.

Roland Hill, writing from the war correspondent's headquarters in France recently, said: "Against the furious counter-attacks which the Huns have made in the Cambrai sector, some Canadian railwaymen have played a minor, but very heroic part. In the scramble at Gouzeaucourt, when Germans actually occupied the village for a few hours, there were hand to hand combats with picks and shovels against rifles and machine guns, and for a time the Canadian shovel brigade held its own. One of the railwaymen grading a level crossing of a line on the morning of the attack, casually looked up from his work to find four Germans with rifles bearing down on his party. He gave one yell to his comrades, and, dashing for the Huns armed only with his pick, killed the first man after parrying a bayonet thrust, and was belaboring the others when his friends came up and wiped out the party. Further up the road the Canadians espied the Germans coming on in force, so the railway builders fell back in good order, the Huns hesitating, thinking they had a fighting unit to deal with—which was literally true. Most of the Canadians got safely away, although the shelling was extremely heavy. A few, who took shelter in an old German dugout, fell into the enemy's hands. But for the fine stand of the practically unarmed railway troops and a famous British fighting battalion—who were working with them, but whose rifles were stacked some distance away—the whole group would have fallen into enemy hands.

"These railwaymen, and with them were a number from the United States, fell back to where the new line was being formed, and that night came into the limelight again. In the meantime, approaching Gouzeaucourt from another direction, came one of the Canadian railwaymen's lorries laden down with material. The heavy shelling it ran through the driver regarded as part of the day's work. It rounded the corner into the village suddenly, and found half a dozen Huns with a machine gun, sitting at the main crossroads. The driver had no room to turn, no time to stop, so he decided to charge. Before the surprised Huns could open fire the lorry went over the gun like a juggernaut, and its crew scattered into the brick wilderness of the village. Then the truck turned on to the crossroads, lumbered back on top gear through more Huns who were collecting, and came, riddled with bullets, to safety.

"Yet another party of railwaymen and their friends of the British battalion were completely surrounded and taken prisoner. Their escort consisted of a full score of Germans under a very snappy little officer. They were hurried up the Cambrai road toward the newly-captured British line, and just as they had given up hope, part of an Imperial battalion espied them. Their captors tried to drive them towards Lavacquerie, but Scotsmen and Canadians, although unarmed, grappled with their guards until rescued by



On the Railway in No Man's Land.  
From official photograph taken on British western front. Issued on behalf of the Press Bureau.  
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George: Col. G. S. Rennie, C.A.M.C., formerly Chief Surgeon, Dominion Power & Transmission Co., and Toronto, Hamilton & Buffalo Railway; Col. B. R. Hepburn, M.P., Forestry Corps, formerly President, Ontario & Quebec Navigation Co. Distinguished Service Order: Lieut. Cols. Frederick Clarke, formerly Right of Way Engineer, Canadian Northern Ry.; Jas. Cornwall, Atholl Griffin, Chillion L. Hervey, M.Can.Soc.C.E., Jas. McDonald, Lawrence Martin, Walter Moodie, Kenneth Ramsey and Blair Ripley, all of the Canadian Railway Troops, Majors H. F. H. Hertzberg, M.C., and Harold Trotter, of the Canadian Engineers.

### PERSONAL NOTES.

Lieutenant Alex. Allan, R.N.R., who is reported to have been lost at sea Nov. 19, 1917, was the eldest son of J. A. Allan, Glasgow, Scotland, and grandson of the late Alexander Allan, one of the founders of the Allan Line.

Lt. Col. W. P. Anderson, C.M.G., M. Can.Soc.C.E., Chief Engineer, Marine & Fisheries Department, Ottawa, who served in the Fenian raids in 1866 and 1870, and has the general service medal with two clasps, has three sons who have been made members of the Distinguished Service Order. They are Col. W. B. Anderson, of the Canadian Army Corps headquarters staff in London; Lt. Col. T. V. Anderson, who lost an arm at Vimy Ridge and who has an engineering command overseas; and Major Alex. Anderson,

on going to France and was wounded May 26, 1917, and transferred to a London hospital in June. Subsequent to his convalescence he was attached to the 2nd Reserve Battalion, C.E.F., stationed at Shorncliffe, Eng., and was appointed Adjutant, effective Dec. 12, 1917. Towards the end of the year, all Canadian casualty officers, who were engineers, were selected for service under the Air Board, to supervise the manufacture of airplane engines in various parts of the United Kingdom.

Engineer Lt.-Commander John Quine, R.N.R., who has been awarded the Distinguished Service Order, was, prior to the war, chief engineer of the Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Albert.

Corp. D. Stanton Hudson, formerly of Perth, Ont., who was killed in action in France recently, graduated in civil engineering in Montreal in 1914. He was in the C.P.R. engineering department for a year, then in the National Transcontinental engineering department, and was still in the employ of that line when he enlisted in the Grenadier Guards at Montreal in Sept. 1915.

Major Gilbert Royce, of Toronto, of the Canadian Army Medical Corps, who was in charge of the eye, ear, nose, and throat department of No. 4 Canadian General Hospital at Salonika, for some two years, until he removed with it to Basingstoke, Eng., in Oct. 1917, has been appointed Commandant of the Canadian



the British party. Then they picked up what rifles they could and joined fortunes with the battalion that rescued them. All that night—they volunteered for the job—the railwaymen took their turn in the trenches, and at dawn were in the thick of another great Hun attack. When the roll was called later in the day 20 men were missing. That evening they came back to their officer, weary, but smilingly happy. They had had the time of their lives, they explained. They had volunteered to join an English battalion in the attack that gave us back Lavacquerie.

"In another part of the hard pressed line some overseas construction men completed a line of railway into a village that has figured largely in the present operations, and each night not only mended scores of breaks under cover of darkness, but all night long loaded wounded on their work train and brought them around to the ambulance railroad. It meant about an hour's trip on a fairly smooth roadbed for the casualties instead of two or three hours' jolting in motor ambulances over rough roads. In addition to running his locomotive, the locomotive man kept a huge cauldron of tea boiling on his tender. Not until after the great rush was over did an unlucky shell put the train out of business.

"These Canadian railwaymen showed they could fight as well as they could build, and special congratulations have been given them from headquarters."

### The Arbitration on the Value of Canadian Northern Railway Stock.

The arbitration board to determine the value of 600,000 shares of C.N.R. stock (par value \$60,000,000), 510,000 shares of which are owned by Mackenzie, Mann & Co., Ltd., and pledged to the Canadian Bank of Commerce as collateral, opened in Toronto, Jan. 28, the arbitrators being Sir Wm. Meredith, Chief Justice of Ontario, representing the Dominion Government; Wallace Nesbitt, K.C., of Toronto, representing Mackenzie, Mann & Co., and the Canadian Bank of Commerce; and Mr. Justice R. E. Harris, of Halifax, formerly President, Nova Scotia Steel & Coal Co., who was selected by the other two arbitrators to be the third arbitrator. The following counsel appeared: For the Dominion Government, W. N. Tilley, K.C., Toronto; Gerard Ruell, Chief Solicitor, C.N.R.; and E. E. Fairweather, Solicitor, Railways Department, Ottawa. For the Canadian Northern Ry., F. H. Phippen, K.C., General Counsel, Toronto; and O. H. Clarke, Western Counsel, Winnipeg. For Mackenzie, Mann Co., McGregor Young, K.C., Toronto; and Pearce Butler, Minneapolis. For the Canadian Bank of Commerce, I. F. Hellmuth, K.C., Toronto, and A. M. Stewart. It was announced that regular sittings would commence in Toronto on Feb. 4.

The agreement, under which the arbitration is proceeding, was entered into Oct. 1, 1917, between the King, represented by the Ministers of Finance and of Railways and Canals, Mackenzie, Mann & Co., Ltd., and the Canadian Bank of Commerce. Under authority of the act passed at the Dominion Parliament's last session providing for the acquisition of the C.N.R.'s capital stock, the arbitrators are to determine the value of the 600,000 shares as at Oct. 1, 1917, and may consider the reproduction cost of the C.N.R. system, but shall not include therein any increase in value, due to the war, of labor,

material, or of property. Should the value of the 600,000 shares be determined as \$10,000,000 or more, the price to be paid therefor shall be \$10,000,000, but if the value determined shall be less than \$10,000,000 the value so determined is to be the price to be paid. The arbitrators' decision is to be final, if unanimous, but if not unanimous is to be subject to appeal as provided in the act. The award is to be made by Mar. 1, or within such further period as the parties to the agreement may agree upon. The price determined is to be paid by the government within three months from the receipt of the award, less its proportionate share of the amount of any liabilities ascertained by the government to be outstanding against the C.N.R. system or any of its constituent companies, and undisclosed to, or in excess of the liabilities disclosed to, the arbitrators, apart from liabilities which will be properly chargeable to capital account, unless the corresponding value produced thereby has been taken into consideration as an asset of the company.

The agreement provided that immediately after its execution, at least five-sixths of the 600,000 shares be transferred to the Finance Minister, free of all encumbrances. Sixteen thousand shares, par value \$1,000,000, deposited with the British Columbia Government as security for contracts made by the Canadian Northern Pacific Ry. with that government were to be transferred to the Finance Minister on an order from the owners. Unless the whole 600,000 shares are transferred to the Finance Minister, the Governor in council may declare any shares not transferred to be so transferred, and until all the shares are transferred the Dominion Government may retain, out of the purchase price decided by the arbitrators, the pro rata value of such shares, to be paid over as they are transferred.

The arbitrators have power to employ such legal, engineering or other professional or expert assistance as they may require, the cost thereof to be part of the arbitration costs.

### Freight and Passenger Traffic Notes.

Observation cars have been discontinued on transcontinental trains.

The Canadian Northern Ry. gave notice in Winnipeg, Jan. 23, that the excursions announced to be run during February to the Pacific Coast had been cancelled.

Owing to the entrance of the Northern Pacific Ry. into the Great Northern Ry. station at Vancouver, exchange of traffic between the N. P. R. and the C. P. R. is now made there, instead of at Sumas, B.C., as prior to Jan. 1.

A. H. Sperry, General Manager, Pacific Great Eastern Ry., Vancouver, was reported to have said Jan. 17, that there was no foundation for the report that it was proposed to suspend the operation of trains on this railway permanently.

The Grand Trunk Pacific Ry. started recently operating two fast freight trains a week between Prince Rupert, B.C., and Edmonton, Alta. A daily fast freight train service is maintained between Edmonton and Winnipeg.

The Great Northern Ry. put in operation a reduced train service between Vancouver, B.C., and Seattle, Wash., Jan. 1, only one train a day being run in each direction as against two a day each way previously.

The Canadian Government Railways steamboat Champlain has resumed ser-

vice between Riviere Ouelle wharf and Murray Bay, and will make one trip a day in each direction during the winter, weather conditions permitting.

The Pacific Great Eastern Ry., owing to a number of land slides, has practically suspended train service between Squamish and Lillooet, B.C., and it is expected that it will be several weeks before the line is reopened for traffic.

Under the Intercolonial Ry. timetable, which went into effect Jan. 6, the Ocean Limited does not run on Sundays, being replaced by the Maritime Express, which thus becomes a daily train. A Moncton dispatch of Jan. 22, stated that a number of changes from this timetable would be made Jan. 25, 26, and 27.

H. E. Beasley, General Superintendent, Esquimalt & Nanaimo Ry., Victoria, B.C., is reported as saying on Jan. 11, that at a conference of railway officers recently it was decided that there would be no change of the existing double daily train service over the company's tracks out of Victoria.

The Burlington, Ont., Town Council on Jan. 15, passed a resolution inviting the Hamilton City Council's co-operation in a proposal to compel the G.T.R. to operate a passenger train service over the Burlington Beach section of its line. This service was abandoned some years ago, when the Hamilton Radial Ry. began operations.

The C.P.R., beginning Jan. 6, reduced its service in the Okanagan valley, from Penticton to Sicamous, by lake and rail route from daily to tri-weekly. The people of the valley, however, are able to leave for the coast daily, as on the other three days a week the steamboat makes connections at Penticton with Kettle Valley Ry.

In connection with the reduction of passenger train service it was reported Jan. 15, that arrangements had been made for the abandonment for the present of the Kettle Valley Ry.'s Coquihalla Valley route. Special coast Kootenay cars will be attached to the express leaving Vancouver each morning. From Spences Bridge they will be taken by K. V. R. train to Nelson, reaching Penticton presumably late at night. Westbound service will be given the same connection. Trains from the coast will reach Penticton at 1 a.m.

Standard Clearances.—The Board of Railway Commissioners issued the following circular Jan. 21: "The board is considering the advisability of establishing a standard distance between track centres, for the construction of divisional points, terminal sorting yards, and sidings, which will provide a safe and satisfactory clearance for the movements of trainmen and yardmen in the performance of their duties. Railway companies are requested to file their views upon the matter within 30 days from this date, stating what clearance, in their opinion, would provide the necessary room between moving cars for the men referred to while carrying on their work.

Railway Lands Patented.—Letters patent were issued during December in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acre.
Calgary and Edmonton Ry. ....	2,799.65
Canadian Northern Ry. ....	1,276.00
General Canada Ry. ....	39.27
Grand Trunk Pacific Ry. ....	1.96
Kootenay Central Ry. ....	.65
Qu'Appelle Long Lake and Saskatchewan Rd. and Steamboat Co. ....	3,426.82
Total .....	7,544.35



## Canadian Northern Train Sheds and Concourse at Vancouver.

Among other works being carried out at False Creek, Vancouver, by the Canadian Northern Pacific Ry. in connection with its new station building, are a concourse and train sheds. The concourse at the rear of, and adjoining, the station building, is 337 ft. long and 40 ft. 8 in. wide, the floor being of reinforced concrete slab construction, carried on piles. The roof, which is about  $19\frac{1}{2}$  ft. above the concourse floor, covers an area 307 ft. x 40 ft. 8 in., and is supported by the rear wall of the station, and columns at outside edge of concourse, respectively, a slight fall towards the columns having been given, to take care of surface water, which will be carried to drains, through the down spouts at the columns. These columns are carried on pile foundations,

to the down spouts at the various columns.

One advantageous point which may be claimed for this construction of train sheds, is that of placing the columns supporting the roof covering, between the tracks, thus permitting a clear platform, with no obstacles to prevent the easy and swift manipulation of baggage and express trucks, and thus affording freedom of movement by passengers.

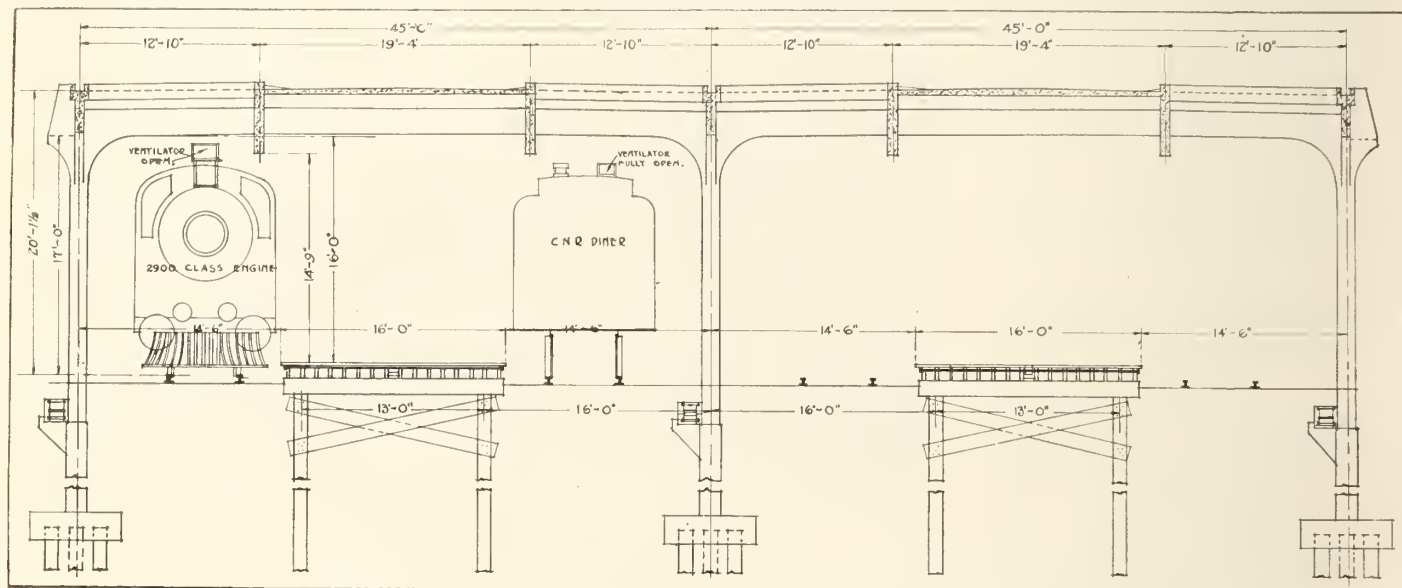
A complete system of electric lighting will be installed on both concourse and platforms, controlled from the concourse, with separate switches to the different portions of the concourse and platforms, allowing of the illumination of all portions as may be required. A telephone system will also be installed, with outlets

## Canadian Society of Civil Engineers' Annual Meeting.

The annual meeting of this society, the last under this name, was held at Montreal, Jan. 22-24. For some time past it has been contended that the scope of the society should be enlarged by embracing other branches of the engineering profession, and this is being carried out. In view of this, a change of name was considered desirable, and it was decided to adopt the title of the Engineering Institute of Canada.

An honor roll, consisting of 862 members, etc., who have gone overseas during the war, was unveiled. It was announced that 65 members, etc., have received decorations for gallantry in action, and that 58 members, etc., have been killed in action, or died as the result of wounds.

H. H. Vaughan, Vice President and General Manager, Dominion Bridge Co., Vice President and Managing Director,



Transverse Section of Train Shed, Canadian Northern Railway, Vancouver, B.C.

are placed at intervals of 46 ft.  $1\frac{3}{4}$  in. along the concourse, and are of reinforced concrete construction, as is also the concourse roof slab. Natural light to the concourse is obtained by a roof light 21 x 21 ft., placed in each bay, between the column centre lines. A ventilator is placed in each of these roof lights.

Two wooden train platforms, in course of construction, are 16 ft. wide and 900 ft. long, starting from the edge of the concourse. They are carried on piles, and are placed at 45 ft. centres, with two sets of rails between them. Between these two sets of rails are placed the columns supporting the beams carrying the roof slab over the train platforms. These columns are on 30 ft. centres the whole length of the sheds, and 45 ft. centres, crosswise, with beams longitudinally and crosswise at the roof level. At a height of 19 ft. and directly over the train platforms, is a slab 20 ft. wide and 900 ft. long, forming the roof covering for the platforms, the remainder, viz., above the rails, being left entirely open, with the exception of the cross beams, which, supported by the columns, are 30 ft. apart, which construction permits the escape of steam and smoke from the locomotives. The entire construction of the train shed columns, beams, and slabs over platforms, is of reinforced concrete design, the roof slabs and beams being properly graded, to ensure the surface water being carried

at various points along the platform, for the convenience of passengers and the railway officials.

Steam feeders will be carried the full length of the platforms, for the easy supply of steam to the cars, while standing on the platform tracks.

The estimated cost of the work is approximately \$163,000. It is being carried out under the direction of M. H. MacLeod, General Manager and Chief Engineer; Pratt and Ross, of Vancouver and Winnipeg, being the architects and engineers.

**June Mechanical Conventions.** — The executive committees of the American Railway Master Mechanics' Association, and the Master Car Builders' Association at a joint meeting in New York recently, decided that in view of the present state of affairs, no convention be held in June, but that if conditions warrant it, a business meeting be arranged for sometime during the year, probably in Chicago.

The Vancouver City Council's by-law for the elimination of the jitney traffic in the city will have the effect of putting them out of business entirely by April 1. This date was fixed so that the necessary power could be obtained from the legislature. There are about 200 jitneys at present operating, 85 of which the license inspector reported Jan. 16, had failed to take out the licenses.

Dominion Products Co., and Consulting Engineer, C.P.R., Montreal, was elected President; and Prof. H. E. T. Haultain, University of Toronto, and R. F. Hayward, Managing Director, Western Canada Power Co., Vancouver, B.C., were elected Vice Presidents. The following councillors were elected: District 1, Prof. Ernest Brown, McGill University, and J. M. Robertson, Montreal. District 2, F. H. McDougall, General Manager, Dominion Iron and Steel Co., Sydney, N.S. District 3, N. E. Brooks, Sherbrooke, Que., formerly Engineer, Maintenance of Way, Western Lines, C.P.R. District 4, John Murphy, Electrical Engineer, Railways Department, and Board of Railway Commissioners, Ottawa. District 5, Prof. Peter Gillespie, Toronto University. District 6, L. A. Thornton, Public Utilities Commissioner, Regina, Sask. District 7, Prof. E. G. Mathewson, British Columbia University.

**Canadian Northern Realities Ltd.** has been incorporated under the Dominion Companies Act, with \$40,000 capital and office at Toronto, to own, lease and exchange and otherwise deal in lands and general real estate and for other purposes. The incorporators are D. B. Hanna, Third Vice President; G. Ruel, General Solicitor; R. H. M. Temple of the legal department, and G. N. Limpricht and W. Bowler, all in the C.N.R. service.



# The Work of Canadian Railway Association for National Defence.

## Return of Cars from United States.

The association has asked the Dominion Government to back it up in its efforts to get back from the United States the 22,000 freight cars overdue from U.S. roads. While the association's efforts have been successful in increasing the daily returns of Canadian freight cars, the numbers held in the U. S. continue to increase. The Minister of Railways has been asked to bring direct pressure upon Secretary McAdoo in his capacity as Director-General of U.S. railroads.

## Exemptions from Military Service.

A number of men in train, yard and shop service in Canadian railways secured exemption under the Military Service Act, due to the fact that they were required in the interests of the country to help to move the traffic and the association having learned that a number of these men are not working regularly, the railways have been instructed to keep a record of the days worked by men who secured exemption and report the same to the association. It is the intention to advise the government of any such men who do not work regularly so that they may be conscripted.

## Better Coal for Railways.

The association has asked the Dominion Government's co-operation in regard to the fuel situation as affecting the railways by requesting the Dominion Fuel Controller to take steps to ensure the U. S. mines supplying a better quality. Not only have the prices on coal for Canadian railways risen enormously, but the number of heat units per ton has dropped. The coal bill of Canadian railways, which was, in 1907, \$15,137,504, was more than doubled in 1917, although the volume of traffic handled had not increased at nearly so high a rate.

## Proposed Closing of Outside Ticket Offices.

Early in January it was stated in daily press reports that as the result of action by the association the various railways would close their city and town outside ticket offices and that all tickets would have to be bought at station ticket offices. So far nothing has developed in regard to this. Enquiry of the Eastern Canadian Passenger Association has elicited the information that the matter has not been finally disposed of and passenger officials of several roads have informed Canadian Railway and Marine World either that no decision has been arrived at, or that they have no intention of closing their outside offices. In view of the unusual situation prevailing in Winnipeg, Regina, Saskatoon, Edmonton, Calgary and Vancouver, where city ticket offices are maintained, western railway officials do not consider it practical to eliminate them. In most cases the ticket offices are located in the same place with freight traffic officials, and either telegraph or express offices, or both, thereby reducing the expense to a minimum. In the majority of cases, the city ticket office staff is not larger than it would be necessary to increase the station office staff to, if city ticket offices were abolished. In some cases railways own the office buildings and in such cases the question of rental does not enter into the proposition and in other cases the office premises are used for joint departmental purposes and are held on a lease. The stations of some of the interested lines are so located as to make it absolutely

necessary to maintain city ticket offices to meet competition and satisfactorily protect and accommodate traffic. At certain points, U.S. lines maintain an organization for the purpose of securing passenger traffic as against Canadian lines. A comparison of expense of city ticket offices as against earnings would indicate that they are operated at considerably less than 5% of earnings. The elimination of city ticket offices would mean the transfer of expense from city to station offices and would not it is said represent a saving of 5%.

## Proposal to Take Up Railway Tracks.

A Montreal press dispatch of Jan. 8 stated that the association had decided to petition the Dominion Government to order the taking up of from 1,500 to 2,000 miles of railway track, from lines that were not considered of vital importance, so that the rails might be used for relaying on other lines. No official information is available in regard to this, but it is said that the proposal was to lift the rails on the Canadian Northern, from Toronto to Sudbury and from Edmonton to Vancouver; on the Hudson Bay Ry., from Pas, north to the end of track; and on the National Transcontinental from La Tuque, Que., to Cochrane, Ont. It appears that some of the members of the administrative committee were not present when the decision was arrived at, and that when it came before members of the Government at Ottawa for consideration, at least one of the roads which would be affected protested very strongly. In fact, it is said that the discussion before the ministers was a pretty heated one and that no final decision was arrived at, the matter being still status quo ante bellum.

## Niagara Frontier Traffic.

F. F. Backus, General Manager, Toronto, Hamilton & Buffalo Ry., has been appointed by the association to control traffic at the Niagara Frontier, by supervising and expediting the movement of coal and other traffic, so that the freight is divided up each day among the various Canadian railways, irrespective of how it may have been routed. This is a precautionary step, to make absolutely certain that the Canadian roads be used to their full capacity, so as to prevent any possible congestion. He has been given full power to act for the best general good, and since early in January has been routing freight by the most available routes for prompt movement, irrespective of how it was consigned. Coal and coke are being given preference over anything else, but Mr. Backus does not undertake to trace freight or to give special movement to one lot of coal, etc., as against another.

## Hay Shipments to United States.

Instructions existing on Jan. 5 calling upon railways to give preference to hay in highly compressed bales in the furnishing of cars for shipments of hay destined to the U. S. have been cancelled, and cars may be furnished for shipments of hay in loose bales for U. S. points. As U. S. railways have 22,219 Canadian cars in excess of the number of U. S. owned cars in Canada and there being a serious shortage of cars for the movement of freight between Canadian points, U. S. owned cars only are to be supplied at points on railways operating in Canada for shipments of hay destined for points in the U. S., other than such points as may be located on Canadian railways.

## Interline Billing of Freight.

The association's committee on tariff and statistics considers that the amount of delay to freight and cars involved in the existing arrangement for rebilling of shipments at junction points between railways, the clerical man power engaged in the work resulting from this arrangement, and the expense it brings upon the railways are defects in the general freight handling scheme which it is felt can be remedied by the adoption on all member lines of the practice of interline billing of freight. The committee's discussion on the subject indicates that so far as the freight traffic departments of the railways are concerned, general interline billing should be adopted, that as a result of its adoption car efficiency would be considerably increased and that heavy expenditure of labor and money now involved in rebilling at junction points would be eliminated. The junction reports at present required by the majority of railways on the movement of through traffic received full consideration. The opinion was expressed that arrangements might be made by the respective lines whereby these reports might be eliminated and that information, if actually necessary be obtained in some other manner. After considerable discussion the following resolution was adopted: "That this committee is in favor of general through interline waybilling with audit office settlements where there are through rates. Where rates are a combination of locals, or of a local and interline rate, shipments should be billed through, showing the rate factors, settlement to be made through the audit office. The audit offices should arrange so that intermediate carriers will be protected in the matter of undercharges, etc." It was also resolved: "That where rates now divided on arbitrary basis the same be simplified, where possible, by converting into a percentage basis." The various railways have been asked to submit reasons, if any, why the suggestions embodied in these resolutions should not be adopted and whether they are prepared to make arrangements so that any delay to cars and freight at present incidental to the taking of passing or junction records will be avoided."

## Incomplete Billing of Freight Cars.

It has come to the association's attention that at many points it is the practice for loaded cars to be forwarded without proper and complete billing, thereby rendering liable delays to such cars before delivery can be effected, and improper handling, through absence of complete routing instructions and other necessary information. The demand for maximum car efficiency is so great that the above practice should be discontinued, and with this end in view it is directed that all member lines place instructions in effect at once, that hereafter no loaded cars are to be started from originating point until properly made out bill of lading has been furnished by shipper and complete railway revenue waybill is available to accompany car.

## Stop Off Privileges for Freight.

The demands at present made on Canadian railways in the handling of an abnormal volume of traffic call for the minimizing or elimination of arrangements which may have been made at a time when conditions warranted them, but which now have the effect of reducing car efficiency and retarding the gen-



eral flow of traffic. Amongst the arrangements referred to is what is known as the "stop-off privilege," for completion of loading of cars of lumber, live-stock, canned goods, etc. A factor in bringing about undesirable transportation conditions is the billing of cars to certain points "for orders" or "for reconsignment." In order that an arrangement, applicable to all member lines may be reached the railways were asked to send to the association by Jan. 15, particulars of all arrangements in effect on their respective lines whereby shipments are stopped off for completion of load or other purpose or billed to certain point or points to be held for orders, inspection, reconsignment or other such purpose.

#### Rules for Tracing Freight.

The work involved in the tracing of freight and furnishing information to the public as well as to the departments of the railways has grown to an enormous degree, involving the employment of a very large number of clerks in railway offices and interfering with the proper discharge of necessary duties. It is generally known that a very large percentage of the information furnished in response to freight tracing requests does not serve any good purpose and is asked for and supplied, more or less, as a matter of form. In view of the urgent necessity at this time for eliminating all unnecessary work, so that maximum returns may be obtained from the efforts expended it is felt that railways should immediately reduce freight tracing to what may be imperative. The following regulations governing the tracing of freight have been formulated and member lines are directed to adopt them:

1. With a view to eliminating unnecessary handling of tracers between railway offices, tracing of freight should be delegated to the car service department or such other department of the railway as maintains car records, except in the case of local or short haul shipments, where time and labor may be saved by dealing direct with superintendent, yardmaster, or agent.

2. Car movement reports and tracers should be handled by mail when such can be done without seriously interfering with the efficiency of the service.

3. Shipments should not be traced except at request of shipper or consignee, and then only when a reasonable time has elapsed for the shipment to have reached its destination. The existing general practice of furnishing one or more "passing records" of shipments en route should be discontinued.

4. Each tracer should show initials and number of car, commodity, point of origin, date of forwarding, route, consignee and destination or as much of such information as the case may demand.

5. A railway should not be requested to trace freight beyond its own rails, except where absolutely necessary.

6. The practice of requesting "report of delivery of shipment to consignee," involving, as it does, the expenditure of much extra time and labor, should be discontinued, and record of arrival at destination only, be made to suffice. The attention of outside freight traffic department officials is particularly directed to this clause, they having been the principal source of such requests in the past.

7. Where two or more offices or departments of a railway are receiving different forms of passing or junction reports from the same point or points, arrangements should be made to have carbon copies of one report serve.

8. It is suggested to the railways that where the practice is not already in vogue, they arrange for close and systematic checking of station and yard reports showing transit cars and cars awaiting placement, with a view to minimizing delay to cars, thereby removing in many instances the cause for tracing of freight.

In connection with the foregoing the commission on car service adopted a resolution, calling on member lines to reduce their tracing staffs not less than 25%.

#### Commission on car service: Report of loading of cars, l.c.l. freight for Nov., 1917.

Railway.	Cars loaded during Month	No. lbs. loaded	Aver. lbs. per car
Canadian Pacific (West Lines) .....	7229	88,654,769	12,264
Canadian Government (West Lines) ..	646	9,295,707	13,390
Canadian Government (East Lines) ..	3568	42,411,672	11,887
Canadian Northern (West Lines) ....	*4279	53,197,760	12,432
Canadian Northern (East Lines) ....	2081	28,452,975	13,672
Dominion Atlantic .....	311	2,774,660	8,922
Grand Trunk .....	13653	152,348,536	11,085
Grand Trunk Pacific .....	1734	13,659,480	7,877
Michigan Central .....	751	6,992,676	9,311
Timiskaming & Northern Ontario .....	448	5,555,637	12,400
Total .....	34700	403,343,872	11,624

\*October.

All stations loading five or more cars of less than carload freight per day included.

#### Filling Up Sleeping Cars.

On the majority of railways where sleeping cars are operated it has been the practice to add extra sleeping cars to trains before a reasonable number of the berths in regular cars have been sold or reserved, due it is claimed to aversion on the part of the travelling public to occupy upper berths. Among the results of this practice are increased consumption of fuel and in many cases unnecessary use of motive power and man power where, owing to the extra cars, trains have to be double headed or run in sections. Enquiries have led to the opinion that at this time, particularly when the saving of coal is of great importance, and when the maximum number of locomotives must be held for the handling of freight consisting mainly of war supplies, the public will readily agree to the use of upper berths to a greater extent than has been the practice heretofore. It is the sense of the association that member lines should arrange so that extra sleeping car or cars will not be added to trains until 75% of all berths in regular car or cars have been sold or reserved.

#### Vestibule Doors, Guard Rails, etc.

The association is considering the formulation of standard regulations governing the handling of vestibule doors, guard rails, etc., on passenger trains, and has asked all railways to submit copies of their respective regulations relating thereto.

**Quebec Bridge Construction.** — The fourth of a series of addresses on the recently opened Quebec bridge was delivered before the Canadian Society of Civil Engineers in Montreal, Jan. 10, by G. H. Duggan, Chief Engineer, St. Lawrence Bridge Co., under the title: "Notes on the tendered design for the Quebec bridge of the St. Lawrence Bridge Co." Mr. Duggan also addressed the Royal Canadian Institute in Toronto on Dec. 12 on the same subject.

#### Railway Rolling Stock Notes.

Canadian Government Railways is reported to be in the market for 250 general service cars.

The C.P.R., between Dec. 14 and Jan. 15, received 1 steel baggage and express car, 222 steel underframe coal cars and 1 decapod type 275% locomotive, from its Angus shops; and 3 snow ploughs from its Winnipeg shops.

A recent press dispatch stated that the C.P.R., during 1917, built over 10,000 box cars in addition to ordering many from outside sources. Canadian Railway and Marine World is supplied with official information as to rolling stock ordered and built, monthly, and this is published in due course. The figures quoted in the press dispatch are erroneous.

The Canadian Car & Foundry Co. has completed the organization of its car shops at Fort William, Ont., and has started work on the order for 2,000 steel underframe box cars for the Canadian Government Railways, which was placed some time ago. It is expected to make the initial delivery in February and the contract will keep the plant in continuous operation until June. The officials at Fort William are:—A. J. Canfield, Works Manager; G. G. Elster, Superintendent; W. Boyle, Assistant Superintendent.

Canadian Government Railways received the following rolling stock, between Dec. 19 and Jan. 19:—189 stock cars, 30 tons capacity, and 333 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co.; 49 steel frame box cars, 40 tons capacity, from National Steel Car Co.; 6 mikado and 2 Pacific locomotives from Montreal Locomotive Works; 12 mikado locomotives from Canadian Locomotive Co.; and 84 second hand coal cars, 35 tons capacity, 386 second hand coal cars, 30 tons capacity, and 91 second hand box cars, 30 tons capacity, from General Equipment Co.

The Canadian Northern Ry. has received 4 consolidation locomotives from Canadian Allis-Chalmers Co. Six more are on order, and delivery is expected to be made shortly. Following are the chief details:—

Weight in working order on front truck, 24,500 lbs.
Weight in working order on drivers .208,500 lbs.
Weight on engine, total .233,000 lbs.
Weight of engine and tender .380,000 lbs.
Weight of tender, light .62,000 lbs.
Maximum tractive effort .50,000 lbs.
Boiler, type .Extended wagon top
Boiler, pressure .200 lbs.
Firebox .64 1/4 by 110 13-16 in.
Grate area .49 sq. ft.
Tubes, no. and diar. .262-2 in.; 26-5 3/8 in.
Tubes, length .15 ft. 3 in.
Heating surface, firebox .180 sq. ft.
Heating surface, tubes .2,946 sq. ft.
Superheater, type .Locomotive Superheater Co.'s top header
Driving wheel base .16 ft. 6 in.
Wheel base, engine and tender total 60 ft. 2 1/2 in.
Length, engine and tender, overall 68 ft. 7 1/4 in.
Cylinder, diar. and stroke .24 by 32 in.
Driving wheels, diar. .63 in.
Journals, main .10 by 14 in.
Journals, others .5 1/2 by 10 in.
Coal capacity .10 tons
Water capacity .6,500 imp. gals.

**The Grand Trunk Literary and Scientific Institute** celebrated its 60th anniversary recently. It was organized by F. H. Trevithick in 1857, when he was Locomotive Superintendent of the G.T.R., and led to the establishment of G.T.R. libraries at London, Stratford, Belleville and Lindsay, Ont., and Battle Creek, Mich.

**Railway Assessment in Toronto.** — Property of the various steam railways in Toronto, has been assessed for this year as follows: G.T.R., \$11,178,724; C. P.R., \$3,421,160; Canadian Northern., \$1,341,427.



## Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Buffalo, Rochester and Pittsburgh Ry.**—R. R. WILLIAMS, who has been acting Canadian Agent, Toronto, for some time, has been appointed Canadian Agent there vice P. A. Bolopue resigned.

**Canadian Government Railways.**—G. R. JOUGHINS, Superintendent of Motive Power, who returned to Moncton, N.B., recently, after some months absence on account of illness, is reported as about to retire under the provisions of the Provident Fund. During his absence W. U. Appleton, General Master Mechanic, has been acting Superintendent of Motive Power, and W. E. Barnes, Master Mechanic, has been acting General Master Mechanic.

C. B. CLARK, conductor, Cape Tormentine Branch, is reported to have been appointed Yardmaster at Sackville, N.B.

**Canadian Northern Ry.**—H. J. WHITE, heretofore General Car Foreman, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., has been appointed Car Foreman, C.N.R., Trenton, Ont.

W. WALKER, heretofore Day Foreman, Winnipeg locomotive house, has been appointed Locomotive Foreman, Dauphin, Man., vice A. Mallinson, transferred.

A. MALLINSON, heretofore Locomotive Foreman, Dauphin, Man., has been appointed Locomotive Foreman, Saskatoon, Sask.

W. B. STEEVES, heretofore Locomotive Foreman, Saskatoon, Sask., has been appointed Assistant Master Mechanic, Western District Office, Edmonton, Alta.

C. J. PIPER is reported to have been appointed Commercial Agent, Minneapolis, Minn., vice J. T. Whitlaw, resigned.

**Canadian Pacific Ry.**—W. GARLAND, heretofore Assistant Superintendent, Toronto Terminals Division, Ontario District, Toronto, has been appointed Assistant Superintendent, Brownville Division, Quebec District, Brownville Jct., Me. This is an appointment of an additional assistant superintendent for this division.

G. H. DAVIS has been appointed acting Resident Engineer, Toronto Terminals, vice H. R. Silcox assigned to other duties.

W. F. ANDERSON is reported to have been appointed Local Freight Agent, Fort William, Ont., vice C. A. Taylor, resigned to enter private business.

S. A. SIMPSON, heretofore Superintendent, Sleeping, Dining and Parlor Cars and News Service, Winnipeg, has been appointed Superintendent, same department, Moose Jaw, Sask.

J. M. WILLARD, heretofore Chief Travelling Inspector, Sleeping, Dining and Parlor Cars and News Service, Western Lines, has been appointed Assistant Superintendent, same department, Moose Jaw, Sask.

**Carquet and Gulf Shore Ry.**—W. B. CRONK, Vice President and Manager, Kent Northern Ry., Richibucto, N.B., is reported to have been also appointed Vice President and General Manager, C. & G. S. R., Bathurst, N.B.

**Central Vermont Ry.**—H. M. DEWART has been appointed Assistant Purchasing Agent, St. Albans, Vt.

**Chicago, Milwaukee and St. Paul Ry.**—C. E. HILLIKER, heretofore Canadian Freight and Passenger Agent, Toronto,

has been appointed Division Freight and Passenger Agent, Des Moines, Iowa, the Toronto office having been closed.

**Grand Trunk Ry.**—O. MASSE has been appointed acting Assistant Trainmaster, Districts 1 and 2, Montreal Division, Eastern Lines, vice C. M. Walton assigned to other duties. Office, Island Pond, Vt.

The following station agents have been appointed: St. Cyr, Que., J. A. Poirier; Rouses Point, N.Y. (yard) C. P. Maloy; Port Huron Tunnel, Mich., P. N. Moore; Port Huron, Mich., H. B. Wilson.

**Grand Trunk Pacific Ry.**—L. CARTIER has been appointed Roadmaster, Biggar, Sask., vice W. R. Whitby.

R. M. HALPENNY, heretofore Superintendent, Alberta and Great Waterways Ry., Edmonton, Dunvegan and British Columbia Ry., and Central Canada Ry., Edmonton, Alta., has been appointed Assistant Superintendent, G.T.P.R., Jasper, Alta.

The following station agents have been appointed: Quinter, Sask., D. McKay; Young, Sask., W. R. Carnal; Balcarres, Sask., E. Briggs; Riceton, Sask., R. E. Chapman; Mawer, Sask., R. J. McCammond; Gilroy, Sask., F. A. Theberge.

**Minneapolis, St. Paul and Sault Ste. Marie Ry.**—H. T. DUFFY, heretofore General Agent, Toronto, has been appointed District Passenger Agent, Duluth, Minn., the Toronto office having been closed.

**Pennsylvania Rd.**—J. E. LITTLE, heretofore Canadian Passenger Agent, Toronto, has been transferred to the Division Passenger Agent's office, New York, the Toronto office having been closed.

**Quebec Central Ry.**—G. D. WADSWORTH, heretofore Assistant General Freight and Passenger Agent, has been appointed General Freight and Passenger Agent, vice E. O. Grundy retired, and his former position has been abolished. Office, Sherbrooke, Que.

**Railways Department.**—The services of A. E. Warren, Assistant General Manager, Western Lines, Canadian Northern Ry., Winnipeg, have been loaned to the Dominion Government, and he has been appointed Chief Operating Officer for the Railways Department, to advise the department upon railway matters generally. Office, Western Departmental Block, Ottawa.

GORDON GRANT, heretofore Chief Engineer, Quebec and Saguenay Ry., and formerly Chief Engineer, National Transcontinental Ry., is reported, by an Ottawa press dispatch, to have been appointed an expert adviser to the Railways Department.

**Reid Newfoundland Co.**—A complete list of officials is given on another page, under the company's heading.

**Canadians Appointed to the Order of the British Empire.**—A London cablegram of Jan. 9 stated that over 2,000 appointments had been made to this new order, the list ranging from commercial magnates to head typists. Among the Canadians appointed are: Knight Commander, Arthur H. Harris, formerly Special Traffic Representative, C.P.R., now Director of Overseas Transport; Commander, Edward Fitzgerald, formerly Assistant General Purchasing Agent, C.P.R., now Assistant to Chairman, Imperial Munitions Board; Officer, Arthur Philip, C.P.R.

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
	\$18,583,600	\$15,313,800	\$3,269,800	\$2,202,500
Incr	\$ 437,500	\$ 962,800		
Decr			\$2,202,500	

Approximate earnings for Dec., \$3,273,200, and for three weeks ended Jan. 21, \$1,767,100, against \$3,485,400 and \$1,903,000 for same periods 1916.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084,276.76	7,098,227.96	1,986,048.80	308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,180,541.98	4,174,977.62	441,241.66
May.	14,355,149.63	9,803,426.84	4,551,719.79	179,436.88
June	13,556,979.69	9,641,073.49	3,915,906.20	226,278.09
July	13,377,850.55	9,617,853.33	3,760,007.22	257,084.51
Aug.	12,414,537.25	8,596,998.76	3,817,538.49	1,650,248.36
Sept.	12,244,341.69	8,497,190.83	3,747,150.86	1,382,608.30
Oct.	14,733,774.02	9,679,072.25	5,054,601.77	620,037.60
Nov.	15,191,162.91	9,933,270.27	5,257,892.64	306,067.50
	\$139,318,452.94	\$96,683,713.23	\$42,634,739.71	\$2,820,330.86
Incr.	\$12,015,633.12	\$14,835,963.98		
Decr.			\$ 2,820,330.86	
			x Decrease.	

Approximate earnings for Dec., \$12,927,000, and for three weeks ended Jan. 21, \$7,055,000, against \$12,289,000 and \$6,870,000 for same periods 1916.

## Grand Trunk Railway Earnings.

	Aggregate traffic receipts from Jan. 1 to Dec. 31:	1917	1916	Increase.
G.T.R.	.....	\$52,205,158	\$47,826,799	\$4,378,359
G.T.W.R.	.....	9,795,440	9,191,107	604,333
D.G.H. & M.R.	.....	3,400,551	3,283,992	116,559

Totals . . . . \$65,401,149 \$60,301,898 \$5,099,251  
Approximate earnings for Dec., \$5,654,558, and for three weeks ended Jan. 21, \$2,780,717, against \$5,280,245 and \$3,112,728 for same periods 1916.

## Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, for December, were \$587,712, against \$608,136 for Dec., 1916. The aggregate earnings for six months ended Dec. 31, were \$3,711,797, against \$2,903,289 for Dec., 1916.

**Toronto Terminal Transportation Association.**—An association has been organized, with the above title, by railway officials in Toronto, its aims and objects being to attain a higher degree of efficiency in all branches of transportation work and not to allow it to recede in any way owing to the war. The association meets from time to time, to deal with matters relating to transportation questions in the Toronto district and to take steps to bring about a greater state of proficiency. Its organization is as follows:—Advisory Board, J. T. Arundel, General Superintendent, C.P.R.; D. Crombie, General Superintendent, Canadian Northern; H. E. Whittenberger, General Superintendent, Grand Trunk. Executive Committee, W. H. Farrell, Superintendent, G.T.R., chairman; T. Collins, Superintendent, C.P.R.; L. Harris, Superintendent, Canadian Northern; Jno. Gray, General Agent, G.T.R. (since deceased); J. C. Brown, General Agent, C.P.R.; and L. Buller, General Agent, Canadian Northern. Ross MacBean is Secretary.

The C.P.R. is reported to be in the market for 85,000 tons of steel rails, the order for which, it is said, will be divided between Canada and the U.S.



## White Pass and Yukon Railway Co's Annual Report.

At the annual meeting in London, Eng., Dec. 17, the report for the year ended June 30, 1917, which was presented, included the results of the operation of the local companies, all of which capital is owned by the W. P. & Y. R. Co. for their financial year, which ended Dec. 31, 1916. The profit and loss account, after charging interest on debenture stock and debentures, payable in income debenture stock, and all expenses, shows a loss for the year of £11,804 19s. 9d. Adding thereto £24,674 14s. 11d. balance of loss carried forward from the preceding year, there is a balance at the debit of profit and loss in the balance sheet of £36,479 14s. 8d.

Following are extracts from President F. E. Elliott's report:—We carried on the railway 12,900 passengers, and 69,691 tons of revenue freight, of which ore shipments from rail points and Atlin District accounted for 45,478 tons. The average haul was 70.91 miles per passenger, and 106.76 per ton of freight, and the average load per car was 8.94 tons northbound and 12.54 southbound.

During the year 20,406 ties were laid, and all necessary repairs were made to keep the rolling stock in serviceable condition. An extension of the branch line was constructed at the Pueblo Mine to facilitate the loading of ore, and the spur track at Carr Glyn was converted into a siding to expedite switching. Extensive repairs were made to the Minto bridge, and the rest of the bridges were overhauled for safety. Considerable work was done during the year in the reconstruction of the ore bunker plant, including the incline leading directly to the bunkers, so as to handle ores shipped from the White Horse district.

January was a very severe month. A blizzard occurred, and the railway was blocked by snow from Jan. 21 to 31. On Jan. 27 a bad washout occurred at the second crossing of the Skaguay River, which took out 130 ft. of the bridge and delayed traffic for eight days. However, we transferred passengers, baggage, mail and some perishable freight for several days before through traffic was again resumed. On the night of Nov. 20 a slide of several hundred tons of rock took out two steel spans of bridge 7c, seven miles from Skagway. These were temporarily replaced by a wooden trestle, but traffic was stopped for eight days. The operating expenses of the Rail Division show an increase of \$73,287.91 as compared with 1915. This is due to the snow blockade, washout and slide already mentioned, and the handling of increased tonnage.

The tourist traffic during 1916 assumed proportions making it worthy of special note. The total revenue amounted to approximately \$102,000, which is about double that of 1915, and the latter up to that time was the best tourist year we had had. To meet this increased tourist business we purchased two second hand cars to be converted into parlor cars, thus giving us four parlor cars, and various changes were made in the accommodation on the steamboats Gleaner, White Horse and Casca. At Lake Atlin we were confronted with the utterly inadequate facilities for the accommodation of the tourists. Consequently, we proceeded to construct a hotel. The plans were designed, materials purchased and shipped north, but owing to the late opening of navigation and low water, the ground

was not broken for the hotel until June 10. However, it was completed ready for guests on July 15. The hotel and its management have been commended by everyone, and some have stayed longer than planned, and have declared their intention of returning for a whole summer's sojourn.

The winter service for mail, passengers, parcels, etc., was carried on as usual between Whitehorse and Dawson, by means of 4-horsed sleighs and 4-horsed coaches, with the help, on a few trips, of course, of canoes, launches and steamers. During the year 155 trips (equivalent to 51,150 miles) were made, and 175,158 lb. of mail, 388 passengers, 10,231 lb. of parcels, and 641,144 lb. of ordinary freight were carried.

**C.P.R. Dismissal Suit.**—P. F. Patterson, formerly accountant in the C.P.R. Natural Resources Department, at Calgary, Alta., entered suit in an Alberta court some time ago against the C.P.R. and several of its officials, viz., I. G. Ogdene, Vice President in charge of Finance and Accounting Department; J. S. Dennis, Chief Commissioner of Colonization and Development; J. E. Lethbridge and Philip Mileson, claiming \$50,000 damages for conspiracy, alleging that the defendants had conspired among themselves and with the company to induce the company to ruin plaintiff's reputation and to secure his dismissal from the company's service. The case finally reached the Appellate Division, where it was decided that no cause of action for conspiracy had been disclosed against the company, but that there was a cause of action against the individual defendants. The company's appeal was therefore sustained, the plaintiff to pay the costs, but the individual defendants' appeal was dismissed, they to pay the costs. As the case now stands, the plaintiff may proceed against the company for wrongful dismissal and against the individual defendants for conspiracy, but these issues must be tried separately.

**C.P.R. Sleeping Car Heating.**—The C. P.R. is introducing into its sleeping cars a system whereby the heat can be controlled in each berth, compartment and drawing room by the occupants of such accommodation, the plan being similar to the control of heat in private houses. This system is being installed when cars are put into the shops for their annual renovation, but, on account of the prevailing war conditions affecting materials and labor, it will be necessary, of course, to subordinate the installation of the new system to the more important matters of new equipment and repairs, which will be proceeded with first.

**The C.P.R. shops at Weston, Winnipeg,** went on reduced time Jan. 14, the working hours now being from 8 a.m. to 5 p.m., instead of from 7 a.m. to 5 p.m., as formerly. Officials stated that there was now ample rolling stock to take care of the traffic, and that there was no necessity for extra effort to keep the cars in repair.

**Passenger Committee Meetings Postponed.**—Owing to existing conditions, the annual meetings of the Great Lakes & St. Lawrence River Rate Committee, and the Niagara Frontier Summer Rate Committee, which were to have been held at Buffalo, N.Y., Jan. 29, 30 and 31, were postponed until further notice.

The Alberta Federation of Labor at a meeting in Lethbridge, Alta., Jan. 9, passed a resolution condemning the use of one-man cars on electric railways.

## Changes in Reid Newfoundland Co's Management.

At the annual meeting at St. John's, Nfld., recently, the following directors were elected for the current year: Lord Shaughnessy, Sir William Reid, H. D. Reid, R. G. Reid, F. J. Hunter, J. P. Powell, and C. O'Neill Conroy, K.C.

H. D. Reid, heretofore Vice President, was elected President, vice Sir William Reid, and consequent on this change, there was some rearrangement of officials. Following is a list of positions with the present holders: Vice President, R. G. Reid; Treasurer, F. J. Hunter; General Superintendent, J. P. Powell; Secretary, W. A. Reid; Comptroller, H. McNeil; Purchasing Agent, H. Crawford; General Passenger and Ticket Agent, J. W. N. Johnstone; General Freight Agent and Traffic Manager, E. W. Taylor; Assistants to General Superintendent, G. Cobb and E. J. Hoskins; Superintendent of Dry Dock and Motive Power, W. E. Ladley; Master Car Builder, H. Ross; Superintendent, H. J. Russell; Eastern Traffic Agent, J. M. Lyons; Assistant Comptroller, C. U. Henderson; Assistant Treasurer, F. E. Pittman; Assistant to General Passenger Agent, J. Baxter; Assistant to General Freight Agent, T. J. Rolls; Assistant Superintendent, W. Fitzpatrick; Chief Dispatcher, W. Dwyer. The head office is at St. John's, Nfld.

**Australian Transcontinental Railway.** By the recent completion and opening for traffic of the railway between Port Augusta and Kalgoorlie, 1,053 miles, a connection between east and west has been made, thus forming the first transcontinental railway in Australia. The official trip on the formal opening of the line occupied five days, travelling being done by daylight only. It is not expected that the line will be completely ballasted and brought up to full standard for some time. It is also stated that, owing to the difficulty of obtaining deliveries of suitable rolling stock during the war, the cars for some time will be of wood bodies erected on such steel underframes and trucks as are available locally.

**Michigan Passenger Rates.**—The Michigan State Legislature in 1911 passed a law enacting that the railways in the State should charge a rate of 2c a mile. The Duluth, South Shore and Atlantic Ry., continued to charge 3c a mile, but gave refund coupons to passengers to be redeemed later. The State instituted proceedings to enforce the law and a decision was rendered recently by U. S. District Judge Sessions at Grand Rapids, Mich., against the State. The judge held that the law should not be enforced against the company on the ground that the railway was practically confined to the upper peninsula, and that it operated under adverse conditions. The railway does not object to a 2½c rate.

**Dominion Government Committee on Railway Questions.**—Early in January an order in council was passed at Ottawa appointing Hon. J. D. Reid, Minister of Railways; Sir Thomas White, Minister of Finance; Hon. A. Meighen, Minister of Interior; Hon. F. B. Carvell, Minister of Public Works; Hon. J. A. Calder, Minister of Immigration and Colonization; and Hon. G. D. Robertson, minister without portfolio, as a committee of the cabinet to consider the whole railway situation in Canada. The committee has held a number of meetings and an announcement of its conclusions is expected at an early date.



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TORONTO, CANADA, FEBRUARY, 1918.

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## Eastern Canadian Passenger Association's Officers.

The following have been elected to  
serve during this year:

Chairman—A. I. Miller.

Executive Committee—W. S. Cookson  
(chairman), R. L. Fairbairn, W. H. Snell,  
J. F. Pierce.

Rules Committee—C. W. Johnston  
(chairman), W. Maughan, J. Morrison, J.  
W. Hanley, G. C. Martin, A. L. Miller,  
I. W. Landman, H. H. Melanson, F. T.  
Grant.

General Baggage Agents' Committee—  
J. O. Apps (chairman), G. C. Allen, F.  
L. Fairbairn, C. C. Bonter, J. E. Quick,  
H. P. Dearing, W. M. Skinner, A. E. Plu-  
mer.

Secretary—G. H. Webster.

## Carriage of Explosives on Passen- ger Trains.

The Defence of Canada Order 1917 has  
been amended by order in council, by the  
addition of regulation 21A, as follows:—  
"If the Minister of the Naval Service, the  
Deputy Minister of the Naval Service, or  
any other officer thereto empowered by  
the Minister of the Naval Service, con-  
siders the circumstances of the case suffi-  
ciently urgent to require the same, such  
Minister, Deputy Minister, or other officer  
may order that explosives be carried on  
any passenger train, and the respective  
officers and employees of all railways in  
Canada, including the Canadian Govern-  
ment Railways and any other railway  
owned or controlled by His Majesty, shall  
receive, transport and deliver any explo-  
sives delivered to them for carriage un-  
der such order. Provided, however, that  
no such order shall be given with respect  
to any explosive the carriage of which is  
forbidden by General Order 100 of the  
Board of Railway Commissioners of Can-  
ada, and that the quantity of explosives  
carried on any one passenger train shall  
not exceed in quantity 500 lbs. weight."

C. P. R. Officials' Christmas Greetings.  
—G. M. Bosworth, Vice President in  
Charge of Traffic; C. E. E. Ussher, Pas-  
senger Traffic Manager; C. E. McPherson,  
Assistant Passenger Traffic Manager;  
C. E. McPherson, Assistant Passenger  
Traffic Manager, Western Lines; and C.  
B. Foster, Assistant Passenger Traffic  
Manager, Eastern Lines, sent their  
friends at Christmas an illustrated book-  
let "Fightin' Sons of Guns," containing  
a reprint of an article by George Patullo,  
a Canadian by birth, now in France as a  
member of the American Expeditionary  
Force. The article was first published  
in a United States periodical.

The Great West Coal Co. has been in-  
corporated under the Dominion Com-  
panies Act to carry on coal mining and  
allied businesses in Canada. The author-  
ized capital is \$2,000,000; the office is at  
Brandon, Man., and the provisional direc-  
tors are: E. Spice, H. E. Swift, R. W.  
Campbell, C. J. Macleod, and H. V. Hud-  
son, Winnipeg, Man. Among the busi-  
nesses which it may carry on are, gener-  
al carriers, forwarding agents and ware-  
housemen.

Rails for British Western Front.—In  
reference to press statements that more  
rails were about to be taken up from  
Canadian railways and shipped to Bel-  
gium and France, we are advised that all  
the rails that the British authorities asked  
for have been shipped and that no fur-  
ther shipment is contemplated at present.

## Storms Delay Traffic in British Columbia and Ontario.

During the last few days of December  
and the early days of January, railway  
communication in British Columbia was  
held up by storm conditions. Owing to  
heavy rains freshets inundated the tracks,  
land slides blocked them, and the damage  
to telegraph and telephone lines inter-  
fered with the task of operating them.  
The centre of the storm was in the Fra-  
ser Valley, and it was not until Jan. 10  
that the train service was anything like  
normal. The British Columbia Electric  
Ry. suffered severely, particularly on its  
line to Chilliwack, the estimated amount  
of the damage done being about \$150,000.

Traffic in Ontario was seriously inter-  
fered with from Jan. 13 to 18 by a bliz-  
zard which started on the first mentioned  
date and continued until well on into the  
night of Jan. 14. Every railway line cen-  
treing on Toronto was more or less block-  
ed, there being practically no main line  
traffic until the afternoon of Jan. 15. Most  
of the branch lines were opened by the  
evening of Jan. 16, and the remainder a  
couple of days later. The G. T. R. branch  
line from Lindsay to Haliburton was one  
of the last to be opened, mail posted at  
points on that branch Jan. 12 not being  
delivered in Toronto until Jan. 19.

Canadian Society of Civil Engineers,  
Toronto Branch.—The annual meeting  
was held Jan. 15, when the committee's  
report for 1917 was received and general  
business transacted. The executive for  
the current year was elected as follows:  
P. Gillespie, Chairman; G. Hogarth, Sec-  
retary-Treasurer; Committee, J. R. W.  
Ambrose, W. Chipman, E. L. Cousins, H.  
E. T. Haultain, E. G. Hewson and R. O.  
Wynne-Roberts.

Canadian Society of Civil Engineers,  
Ottawa Branch.—The chairman elected  
for the year is G. Gordon Gale, Vice Pres-  
ident and General Manager, Hull Elec-  
tric Co., and the secretary is J. B. Chal-  
lies, Superintendent, Dominion Water  
Power Branch. Among the members of  
the managing committee is E. B. Jost,  
Hydraulic Engineer, Railways Depart-  
ment.

Strange Death of a G.T.R. Paymaster.  
It was reported, Jan. 17, that the body of  
a paymaster named Robillard of the con-  
struction gang working on the bridge  
over the Godefroi River, between Dou-  
cets Landing and St. Gregoire, Que., on  
the G.T.R., was found hanging outside a  
freight car at Doucets Landing. It is said  
that he had been murdered and the body  
placed there after death.

A club has been formed at the C.P.R.  
Windsor St. station, Montreal, for boys  
between 12 and 18 years of age employed  
there. The club elects its own officers,  
but its affairs are overseen by a commit-  
tee of the station officials.

Canadian Northern Ry.—One year gold  
notes for \$1,250,000, originally issued by  
W. A. Read & Co., New York, at 6%, were  
paid at maturity, Jan. 10. During 1917  
the company's outstanding obligations  
were reduced by \$6,000,000.

The first railway excursion in Manitoba  
was held Dec. 20, 1877, when, on the in-  
vitation of Contractor Joseph Whitehead  
and District Engineer J. H. Rowan, a trip  
was made on the C.P.R. from St. Boni-  
face to a point east of Selkirk.

The Transportation Club of Vancouver  
had its annual New Year's party, as  
usual. The proceedings opened late at  
night on Dec. 31 and were carried on for  
several hours into Jan. 1.



## Traffic Orders by the Board of Railway Commissioners.

A number of orders issued in connection with the "Fifteen per cent. rate case" are given on page 45 and subsequent pages of this issue.

### Canadian Northern Rates to West of Port Arthur.

26831. Dec. 14, 1917. The order 26008, April 12, 1917, directing the Canadian Northern Ry. to file a tariff showing rate from Toronto, by lake and rail, to its stations west of Port Arthur, which shall not exceed its published rates from points east of Toronto to the same destinations, via rail to Toronto, and lake and rail to destination. Upon hearing the matter at Toronto, Oct. 23, 1917, in the presence of counsel for the Canadian Northern Ry. and a representative of the freight and express underwriters, and upon its appearing that the Canadian Northern Steamships Ltd. now own no vessels on the lake route from Toronto to Port Arthur, and that the Canadian Northern Ry. does not "own, charter, or use" any vessel on this route within the provisions of sub-secs. 3 of sec. 333 of the Railway Act, it is ordered that order 26008 be rescinded.

### Transportation of Milk in Refrigerator Cars.

26843. Dec. 19, 1917. Re the question of requiring railway companies to provide refrigerator cars for the transportation of milk where a special milk car is used for the purpose; and the complaint of the University Settlement of Montreal, Baby Welfare Committee, against the lack of proper depot protection at Montreal and points of shipment for milk going to Montreal; and applying for an order requiring cars used for the transportation of milk to be equipped with ice or other cooling process. Upon hearing the matter at Montreal, Nov. 8, 1917, in the presence of counsel for the City of Montreal and the Canadian Pacific and Grand Trunk Railways, it is ordered that the application be refused.

### Transfer Tracks at Conquest and Rosetown.

26853. Dec. 21, 1917. Re order 18682, Feb. 14, 1913, requiring the transfer track between the Canadian Pacific and Canadian Northern Railways, to be constructed by agreement by the C.P.R. at Conquest, Sask., to be completed by May 1, 1913; and order 26386, July 31, 1917, directing the Canadian Northern Ry. to construct a transfer track between its railway and the C. P. R. at Rosetown, Sask. And re the application for authority to remove the transfer track at Conquest. Upon hearing the matter at Saskatoon, Oct. 17, 1917, and at Regina, Oct. 18, 1917, in the presence of counsel for the Canadian Pacific and Canadian Northern Railways, and the Saskatoon and Moose Jaw boards of trade, no objection being offered by the Moose Jaw Board of Trade, provided the said transfer track was not removed before the transfer track at Rosetown was installed, and upon its being now represented to the Board that the transfer track at Rosetown was completed on Nov. 29, 1917 it is ordered that the C.P.R. be authorized to remove the transfer track at Conquest.

### Pulpwood Rates to Campbellford.

26858. Dec. 19, 1917. Re order 26476, Aug. 29, 1917, made upon the application of the Hydro-Electric Power Commission, of Ontario, suspending the advanced rates on pulpwood, in carloads, from certain

stations on the Canadian Northern Ry. to Campbellford, Ont., as published on page 3 of Supplement 20, to the C. N. R. Tariff, C.R.C. no. B-860; also suspending cancellation Supplement 1 to Canadian Northern Ry. Tariff C.R.C. no. E.156. Upon hearing the application at Ottawa, Sept. 18, 1917, the Hydro-Electric Power Commission and the Canadian Northern and Grand Trunk Railways being represented, upon the report of the board's Chief Traffic Officer, it is ordered that the order 26476 be rescinded, in so far as it affects rates from points on the Maynooth, Rideau, and Tweed Subdivisions. And it is further ordered that the following rates be simultaneously filed in lieu of those shown in Supplement 20 to Canadian Northern Ry. Tariff C.R.C. no. N-860, from points on the Irondale Subdivision, viz.: From Baptiste, Highland Grove, and Rumfords, 6½c per 100 lb.; from Wilberforce, Monmouth Road, and Tory Hill, 6½c per 100 lb; from Gooderham, Maxwells, Irondale, Furnace Falls and Conways, 7c per 100 lb.

### Northern Pacific Parlor Car Tariff.

26875. Dec. 27, 1917. Re application of Northern Pacific Ry., under sec. 331 of the Railway Act, for approval of its Standard Parlor Car Tariff, C.R.C. no. S3. Upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the said tariff, showing a rate of ½c a mile between stations in British Columbia, be hereby approved.

### Northern Pacific Standard Freight Tariff.

26899. Jan. 11. Re application of Northern Pacific Ry., under sec. 327 of the Railway Act, for approval of its Standard Freight Tariff of Maximum Mileage Tolls, C.R.C. 375. Upon the report and recommendation of the Board's Chief Traffic Officer, it is ordered that the said tariff applying between all its stations in British Columbia be approved; the said tariff, together with a copy of this order, to be published in at least two consecutive weekly issues of the Canada Gazette.

### Interchange Between C.P.R. and G.T.R. at Port Hope.

26887. Jan. 3. Re order 26400, Aug. 1, 1917, directing the C.P.R. to construct interchange tracks between its railway and the G.T.R. at Port Hope, Ont., and the application of the G.T.R. for an order amending said order. Upon reading what is filed in support of the application, it is ordered that order 26400 be amended by adding the following clause, viz., "2. That the company upon whose line, including private sidings contributory thereto, the traffic is loaded, shall be entitled to the line haul and to the privilege of effecting the required delivery on the line of the other company by means of interswitching at destination."

### Track Storage Charges at Cartier.

26901. Jan. 14. Re application of the Transportation Bureau, Montreal Board of Trade, for a ruling by the board on the validity of the track storage charges authorized by order 24436 to be collected on cars containing western grain and grain products detained at Cartier, Ont., for more than 72 hours, for consignees' furtherance orders, as published in Supplement 15 to C.P.R. Tariff C.R.C. no. E-3280. Upon reading the application and what is alleged in support thereof; and upon the report of the board's Chief Traffic Officer, it is ordered that the object sought to be attained by the ascending scale of track storage tolls at Car-

tier, authorized by order 24436, Nov. 11, 1915, having received consideration in general order 201, Aug., 1917, prescribing the amended Canadian Car Demurrage Rules, order 24436, be rescinded on and after Feb. 1, 1918. And it is further ordered that the C. P. R. be authorized to file a tariff to provide for a special toll of \$1 a car per day, for detention of cars containing western grain and grain products at Cartier, for more than 72 hours, while awaiting furtherance orders from the consignees thereof; the said tariff to be made effective Feb. 1, 1918.

### Collection of Cartage Charges.

26905. Jan. 15. Re complaint of Retail Merchants' Association of Port Arthur and Fort William, Ont., against the practice of certain railway companies of advancing cartage charges at certain shipping points and collecting same from the consignees. Upon hearing the complaint at Fort William, Oct. 22, 1917, the Port Arthur and Fort William boards of trade being represented at the hearing, and upon reading the further submissions upon the report of its chief Traffic Officer, and upon its appearing that the board has no jurisdiction to correct the grievance complained of, it is ordered that the complaint be dismissed.

## Railway Employes and the Victory Loan.

One noticeable feature of the recent Victory Loan campaign was the surprisingly large contribution made by many railway employes. Conductors put down their names for \$500 or more without a murmur. So too with the locomotive men and mechanics and in a lesser degree with trainmen and firemen. The reason is that the railway employe was never so well paid as he is today, indeed he is better off even than the munition worker, as his income is not of a temporary nature, and he has the further advantage of pass privileges for his family and of a pension when he gets to be too old for service.

Three hundred dollars a month is quite a common pay cheque to be drawn at the end of the month by a Canadian locomotive man, who earns more than many a captain of an ocean going liner, and sometimes \$350 is touched. Conductors range as a rule from \$200 to \$250 a month, sometimes more and sometimes less. Almost as well paid are the firemen on the western lines, who earn from \$150 to \$230 a month. Section foremen, who have special privileges of houses at nominal rents, free fuel, market passes for their wives and free land for gardens, earn from \$80 to \$110 a month.

C.P.R. stock is now held by over 50,000 persons, chiefly in Great Britain, Canada and the U. S., approximately 12% of it being held in other countries. The holdings in Canada have increased considerably since the commencement of the war, and now represent over 15% of the outstanding capital stock, distributed amongst 7,000 holders. In the last four years, the number of shareholders has more than doubled.

T. McHattie, ex-Master Mechanic, G.T.R., Montreal, in remitting his renewal subscription, writes: "I always look forward with pleasure for Canadian Railway and Marine World from month to month, as the matter it contains is so interesting and instructive."



# Discussion on Draft Gears on Railway Rolling Stock.

The paper on this subject, by L. E. Endsley, professor, University of Pittsburgh, Pa., read before the Canadian Railway Club and published in Canadian Railway and Marine World for Dec., 1917, was discussed by several of the club's members. The following are the most important parts of the discussion:

**T. H. Curtis:** I would like Mr. Endsley to make plain to us the shearing of the 19/31 in. rivets. Does this mean that each lug has 9 rivets in it? If so, are they in the same channel? Or are there two lugs to shear 18 rivets; each lug bearing about half the load? Referring to fig. 2, the cut shows 18 rivets on the side. I think this should be explained.

**L. E. Endsley:** There are 18 rivets in the single shear and two lugs. Sometimes under a test both lugs would shear off. I meant to say that there are two lugs, 9 rivets in each and each rivet in single shear. As regards the 18 rivets in the channels, as shown in fig. 2, it only took 800,000 lb. to shear off 10 rivets and as this was not the strength of the sill, we added more rivets. We did not want to shear the lug off, but to obtain the strength of the sill.

**Jas. Coleman,** Superintendent Car Department, G.T.R.: Mr. Endsley has opened up a very interesting and broad subject—one that all railway companies are very much concerned in at present. It is the opinion of many operating men that in 70% of the claims paid by the claims departments for damage to freight in transit the cause for such damage cannot be traced; this high percentage is due to damage in switching and yard service, due to weak draft rigging. With the ordinary spring draft gear, that has not sufficient tension to absorb the shocks in switching and in road service, the gear becomes solid in switch movement and moves car under load. This means, it forces the load, or contents against the end of the car, scattering it over the floor of car, thereby causing unknown damage to contents, that cannot be determined until car has reached its destination. If the spring tension of draft gear was strong enough to absorb the shock before the spring went solid, it would prevent movement of contents or load in car, also stop movement of car under load and forcing load against ends of car. It is clearly demonstrated, on account of heavy train movement, increased tonnage in train service, and heavy switching service, due to increased tare weight of car and increased capacity of cars, that it has become necessary that a friction draft gear should be applied to all freight and passenger car equipment. It has been fully demonstrated that a spring tension draft gear is not sufficient to absorb the shocks and prevent them from being centralized in underframe and from of cars. In a discussion with some railway men, in connection with claims paid for damage to freight, the cause of which could not be traced, one company, I heard of \$200,000 being paid out in 1916 for damage to freight in transit, cause of which could not be traced, or damage was not discovered until car reached its destination. This amount was only a portion of the total amount of damage, as usually it is pro-rated over the different lines over which the car may be routed. This is conclusive that the mechanical departments should do something to improve this condition, that will prevent the constant flow of expense for damage to

freight, a large percentage of which can be saved and avoided by the introduction of a stronger and more efficient draft gear. Large numbers of equipments have been in service for a number of years, but at the time such equipment was originally constructed, it was not necessary for a heavy friction draft gear. In the last few years, or less than the average life of a great deal of equipment now in service in the country, it has become necessary, due to the increased tonnage of trains and increased draw bar pull on large and heavy locomotives to apply a reinforced steel underframe and a stronger draft gear to stand the service of present day operation, the same applies to improvements made in sorting yards and switching.

**W. H. Yost,** Mechanical Engineer, Hart-Otis Car Co.: As trains get bigger the draft gear must necessarily be made heavier. The modern friction gears give good service and much better than the spring gears. The heavier trains will require us to adopt something heavier.

**C. W. Van Buren,** General Master Car Builder, C.P.R.: There is one feature which Mr. Endsley did not bring out very strongly, although it has no doubt occurred to nearly all car department men here, that is that defects which develop in the draft gear and attachments cannot always be attributed to inferior draft gear. Many cars have been built and remodelled in recent years, with sills too weak to stand up under the severe service to which they are subjected. This is usually called rough switching, and in many cases it is, but we must remember that the traffic conditions which now prevail do not always permit of slow and careful movements of freight cars, and that it is at times extremely difficult to prevent damage to sills, couplers or draft gears without higher capacity gears, heavier couplers and stronger sills, draft arms and other attachments. I am not speaking of spring gear only. It is brought out quite clearly in the paper that friction draft gears frequently do go solid before any other parts of the car are damaged. Perhaps we might say that none of the draft gear manufacturers are keeping pace with the requirements. It has been my opinion for some time that the draft gear usually goes solid before the coupler breaks, and it would appear that the coupler should be the weakest link in the chain. We should design our sills, draft arms and lugs strong enough to stand a shock sufficient to break the coupler, and, if it is possible, the draft gear should be designed with at least as great a capacity as the coupler, and I believe that at least four inches travel is desirable. Officers in charge of the management of railways usually come up through the traffic or operating department, and it has been part of their training to keep the tare weights of cars and trains down to the minimum. Quite frequently, strength, durability and efficiency have been sacrificed in order to reduce the tare weight. Perhaps this condition is to some extent responsible for many of the comparatively weak draft gears in service today. There is one other point I would like to refer to on behalf of friction gear. When we were using nothing but spring gears, we expected to have couplers, followers, lugs, springs, and other parts broken. These failures were seldom criticized; we usually called it rough handling and let it go at that,

but when we got the friction gear and it began to fail, we sometimes said it was no good. We thought it did not stand up in service as it should, and we were sometimes inclined to condemn it because some parts had to be renewed, for we forgot that friction meant wear. I believe that it is impossible to build any friction draft gear which will not at some time during the life of the car require some repairs, and its efficiency, like wheels, brake shoes, couplers, brasses and other parts of cars, depends largely upon the inspection and repairs which it receives. This is something which we should endeavor to impress upon our managements. I believe all car men who have had any experience with friction draft gear are in favor of it as compared to spring gear. Most of our operating men who don't should visit the various laboratories and become familiar with the results of the tests.

**R. W. Burnett,** Master Car Builder, Delaware and Hudson Co.: I feel confident that up to recently 80 or 90% draft gear troubles have been the failure of attachments; that is. couplers, yokes, yoke rivets or attachments to wooden draft timbers. The couplers are now being made stronger, modern cast steel yokes do away with the rivets and distribute the metal so that breakages are greatly reduced and the use of steel centre sills or metal draft timbers is greatly reducing the draft timber attachment failures. The things I have mentioned may seem minor details, but they have constituted the greater part of the failures that have made the draft gear problem so prominent. With modern appliances these troubles will in time be reduced to a minimum which will leave us free to realize to the full on the wonderful developments that the friction draft gear people have made. With the increased weight of the cars and trains, and power of the locomotives, the full capacity that has been developed in the gears will be needed. We must not lose sight of the fact that the great capacity developed in the limited space will mean wear, and we must expect some cost in repairs and renewal, but, I feel that every dollar spent for improved modern draft gears will be saved many times over in repairs to other parts of the cars and in loss and damage to lading.

**K. F. Nystrom,** Chief Draftsman, Car Department, G.T.R.: There is one thing brought out very clearly by Mr. Endsley, viz., the wear of the friction draft gears. The great fault with certain friction draft gears is that the parts become worn and produce a slack in the gear. If this slack is not taken care of either by manual or automatic adjustment the gear will lose in capacity and soon be hammered to pieces. It is my opinion that in the ideal draft gear the wear should be reduced to a minimum and the slack or wear taken up automatically, so the gear will be in a good efficient condition during its entire life, the same as, for instance, a brake shoe. I should like to ask Mr. Endsley as to the relation between the draft gear and the centre sill. The draft gear will take care of a portion of the energy, or end shocks, the centre sill has to take care of the balance. How strong should we design the centre sills behind the draft gear to take care of reasonable load, say, in so many pounds static load?

**L. E. Endsley:** It would depend entirely upon the strength of the coupler. If I



had a coupler that would stand about 500,000 lb. I would want to have an under frame that would stand over 600,000 lb., and two 25 lb. channels with 19 sq. in., including cover plate, would give an under frame plenty strong enough. The coupler is going to fail before the strength of the sill is reached. If you have a coupler going 700,000 or 800,000 lb. you must go to a centre sill that will stand a greater load. I want my coupler to break first. If that will stand a million pounds we should have an underframe stronger than that or the underframe is going to fail first.

**K. F. Nystrom:** Two 12 in. channels will not safely stand a million pound shock?

**L. E. Endsley:** I said that two 12 in. channels of 25 lb. per foot would stand 600,000 lb.

**K. F. Nystrom:** If you allow, say, 16,000 or 20,000 lb. per sq. in., you have got to get more than 12 in. channels.

**L. E. Endsley:** You will not bend the sills until you have a stress of 35,000 or 38,000 lb. per sq. in. You will shorten it a little as you get above the elastic limit, but you won't bend it until you get a force which is equal to over 35,000 lb. per sq. in. In the tests mentioned in the paper we used an accurate strained gauge that is constructed to read to 0.0002 parts of an inch. If there is any give in that sill over 0.0002 then this strain gauge will show it. If the webs of the channels are as thick as they are in a 12 in. channel that weighs 40 lbs. per foot the force per sq. in. to destroy or bend the sill is increased. In two sets of channels of the size just given, the area would be approximately 28 sq. in. for the centre sills with the cover plate included. In a test of these channels the force to destroy them was over 1,300,000 lb. or over 47,000 lb. stress per sq. in.

**T. H. Curtis:** I think Mr. Endsley's paper brings out the necessity of not having too much eccentricity through the location of the draft gear in relation to the centre sill. I would refer him to the table in the paper where the draft gear has been  $2\frac{1}{2}$  in. from the edge of the channel. It is very little more than half the strength of when it is in the centre of the channel. To get away from this eccentricity it seems to me the trucks should be designed so they will be as low as possible and the spring draft nearer to the centre of the sill. There is another advantage gained by this and that is that it will lower the centre of gravity of the car body. With respect to broken draft gears: one point is that the repair men do not always know when they should be repaired and when they should be replaced. I think the suggestion made by Mr. Nystrom is worthy of consideration and shows the need of a draft gear that will automatically take up the slack caused by wear and abuse. I have not heard anything said here about the auxiliary to the draft gear, which is the buffer block. That is something which takes up some of the greatest shocks and if that were so set that the coupler horns would strike before the draft gear became solid it would be a great advantage as it is something which the repair men can see readily and is something which can be easily fixed.

**Mr. Hatch:** I would like to enquire of Mr. Endsley what effect it would have on increasing the length for the distance of travel on train slack, bearing in mind the difference in loaded cars, difference in piston travel, and so forth. I refer particularly to passenger equipment.

**L. E. Endsley:** Mr. Hatch has opened

a subject that I had hoped to have the best man in the United States with me tonight to reply to, but I received a telegram that he could not be here. There are two entirely different things in this subject, for instance, slack is movement between two cars without any resistance. But the draft gear movement is entirely different. Some men have I think mistaken draft gear travel for slack, and if you increase your slack between two cars you are going to increase the evils due to that slack. Let us assume for instance that you have a foot slack between two cars. You would get one car going in starting the train, and would go a foot before you picked up the next car, and in going that foot, probably could increase your speed a mile an hour or so, but if in going that foot you had resistance equivalent to a large number of foot pounds, and if you have between the two cars 4 in. of draft gear travel under 200,000 lb. final force your average will be 100,000 lb. Now if this force acts through between each car and no slack, the other car would be moving almost before there was any difference in speed, the slack happens after the gear goes solid. If there was a lot of slack on a car I would expect a shock but if I had resistance that the locomotive could not take entirely up, and it had to start the cars with resistance, then I would have a little give between the cars, and when picking up the last car of the train, each car in the train would be moving at almost the same speed. I think one of the things we have overlooked is the advantage we are going to gain by cutting down the slack, that is moving without any resistance whatever. I would be very glad if I had the assistance here tonight of W. V. Turner of the Westinghouse Air Brake Co., to discuss this question more fully, as it is a very deep one.

**J. Hendry, Master Car Builder, G.T.R.:** In my opinion an underframe, properly designed and constructed, having been obtained, the most important part of the design to consider is the type of draft gear. In this connection I think it is generally conceded that a modern friction draft gear gives the greatest protection, as it reduces the cost of maintenance and all other expenses incident to failures. A careful examination of cars placed on shop tracks for repairs will, I am convinced, show that probably 70% are placed on account of defects that have developed due to shocks, and I believe investigation into this cause of damage to lading indicates that a large percentage can be traced to the same cause. If such is the case, and we all know it is, something should be done to relieve the equipment of such ravages.

A great deal of attention has been given to the design of the underframe construction of freight equipment, but the desired results will never be attained unless some device, between the frame and the coupler, is installed which is especially designed to destroy or absorb the force of the blow. A car may be properly designed and constructed through, but if it is not protected against the force of shocks, which all freight cars are subjected to, the weakest point will begin to fail. Springs have been used, varying from 18,000 to 60,000 lb. capacity and gave good protection some years ago, when cars were of light capacity and were handled in short trains; but they do not meet the requirements of today and a large number of roads have started to replace the spring gear with friction devices that have from three to four times the shock-absorbing capacity that can be

obtained from the spring gear. In a friction gear there should be no recoil. The force exerted by the recoil of a spring is practically as great as the force to compress it, and results in much damage to equipment handled in long trains. A reduction of car failures is sure to follow in the adoption of the friction draft gear, which means a great saving to a railway, because of the increased earning power of the cars and the decreased cost of maintenance, lost and damaged lading accounts, delays and interruptions of traffic, transfers of lading and switching through various terminals. The draft gear, I consider, is one of the most important factors in the question of car maintenance and other expenses incident to car failures. It is the only device that we can apply to a car to protect it and its lading from being damaged. It has no other function to perform. It must destroy shocks from impact, shocks from pulling and shocks due to recoil. A few of the damages occurring to cars due to the draft gear failing to perform its work are as follows: If we could use a draft gear between the coupler and the car that would absorb the heavier shock, we would do away with broken couplers, but with improved friction draft gear this may be obtained by continuing to use our present style of couplers without increasing their weight. While knuckles wear out in service, yet a great many of them break; and here again would relieve the knuckle by absorbing the shock. What is true of the coupler and knuckle, is also true of the knuckle pin, either the draft gear absorbs the shock, or we will have to increase the size of the pin or have the knuckle so arranged that when locked in position the strain will not come on the pin. Failure of coupler yokes is also due to shock. These are, I think, being replaced by other forms of attachments, on account of pocket rivet failures, on account of pocket rivets in shear under impact. By eliminating this feature the wrought iron or forged steel yoke with  $1\frac{1}{4} \times 5$  section riveted to the coupler with two  $1\frac{1}{4}$  in. rivets can be operated with very few failures. No one will deny that draft springs are destroyed by shock, but with a properly designed friction draft gear, the failures are few, for the reason that draft gears are not driven solid, even though the draft gear receives a shock sufficient to close it. Draft lugs, draft arms, draft sills, deadwoods and end sills all fail, simply because the draft gear fails to destroy the force of the blow. I do not say that a friction draft gear will cure all the ills to which the freight car has fallen heir to, but I do know that it helps to maintain freight cars in service and keep them off the repair tracks; thereby increasing the earning capacity and efficiency of the freight car. I believe that a standard specification for the testing of draft gear, to determine its shock-absorbing capacity and amount of recoil, should be established to obtain, by means of physical tests, their worth or efficiency as a shock destroyer.

**E. J. McVeigh, General Storekeeper, G.T.R.:** If the fact that I have seen a vast number of broken couplers and draft gears gives me a right to claim some knowledge of these things, then I should be an expert, but I am afraid such is not the case. When I first heard that Mr. Endsley was coming to give us a paper on draft gears, my first thought was, "Have we found a Moses at last who will lead us out of the wilderness of broken and disabled cars?" While Mr. Endsley has given us much valuable information, and if we make proper use of it we will



receive much benefit, no doubt, I do not expect to find the number of broken couplers and draft gears decreased, or the number of damaged cars become less for many years to come, and the discussion by the car men here tonight confirms me in this belief. To me it seems that this question of damaged cars is merely a part of the great railway problem that confronts us today and with which the railways have been at death grips for years. It is, as our president has stated, a business proposition. Mr. Coleman hinted at this when he spoke of the large locomotives that damage our cars. Another gentleman did not agree with this, but claimed that the damage was done largely by the small locomotives in the yards. To me it seems to be all of one piece. We use the big locomotives in an attempt to haul sufficient tonnage to make the haul pay. We shunt our cars fast and roughly, in an attempt to handle enough of them in a day to catch up to the vanishing allowance we have for such work. I am not so very old, and yet I can remember when a railway used a small, weak car with the old pin and link coupler, and a small locomotive to handle them, and made good money by so doing. There were various reasons for this. One was that in proportion to the expense of handling the car and the load, the railway received a fair compensation. Under the head of expense of hauling the load we must count the general operating expense of the railway, and the interest on capital account. The cars cost \$400 to \$500 each. The locomotives cost \$7,000 to \$10,000 each. Repairs to both were small in cost. The wages paid were small. The strength of the locomotive and the car were more evenly balanced than they are today. The locomotive could not damage the cars because they had not the strength—they could not haul 75 or 100 of these cars in a train and pull them to pieces in so doing, but they made money by hauling a reasonable number, because things were more evenly balanced. There wasn't so much talk of tonnage in those days, but they were not such bad days after all. But the world moves, the expense of operation began to grow, the cost of hauling the small train of small cars became so great that it ate up the revenue. The revenue had gone down while the expense had gone up. You can't make two things meet when they pass each other and are going in opposite directions. When this happens in any line of business, outside of railroad-ing, there is a halt called and a readjustment made, not so with the railway, they can't halt, and the power to readjust had been taken away from them, so when they found that hauling the light train did not pay they found a heavier locomotive that could haul a heavier train. Then they found that the old cars could not stand the increased strain, so they bought or built a stronger car, but this was not the answer. The locomotive and cars had cost so much, and wages had again gone up, so that there was still no margin left. What to do now? I know what should have been done, but we all know what was done. The locomotive was again made heavier and back came the old trouble of the car being too weak to stand the extra strain. The coupler broke, so we made a stronger coupler. Then the draft gear gave way and we made a stronger draft gear. Then the sills gave way and we strengthened them, then back to the coupler and so on round and round a vicious circle. Increased cost and upkeep of locomotives cost and upkeep of cars, increased cost and upkeep of track, increased

wages, increase everywhere, except increase in net revenue. Feverish and superhuman efforts on the part of the railways to keep going and give the country that service they have never failed in. These are a few of the things I think I see, and I can only say that while an improvement in the draft gear might be of some slight help it is not the answer to our problem. And what is the answer? In my opinion it is this. Give the railways a fair wage for the service they are giving so they may stop trying to do the impossible. Let them come back to a safe and working basis. The railway is a merchant selling transportation. Does anyone expect the merchant to sell his goods at less than cost? Does anyone expect to find within himself means to overcome such a condition and remain in business? I think not. And why should the railway be expected to do it?

C. Brady, Chief Draftsman, General Master Car Builder's Office, C.P.R.: I would like to ask Mr. Endsley if he has any further information to give out as to tests of gears having high initial starting force, for example: resistance which will require springs that will take in 20,000 lb. or so. It appears from his analysis that there are three different kinds of work that the draft gear must take care of, and the construction will be more or less affected, but it is desirable that the most important function be given the preference. It has always seemed to me that the draft gear was the same as any other part of the car, an operating problem. By that I mean that the cars should be designed to operate at the speed which the operating department considers desirable and it is up to the mechanical department to meet their requirements if possible. Mr. Endsley has been of inestimable assistance to all the mechanical fraternity in designing draft gear, and I believe he is entitled to credit for giving a clearer understanding of the necessity for draft gear being built in proportion to the capacity of the car, in other words, a 70-ton car should have a larger draft gear than a 50-ton car. If the operating department will say as to the capacity of the car and the speed at which it is to be operated, then it is up to the mechanical department to put a car in service that will do the work. There is one other point which should not be overlooked, and that is the general tendency to blame the large locomotive for draft gear troubles. I think this is more or less wrong and that the large locomotive does not damage the draft gear as much as the smaller locomotive, because the smaller locomotive has to take the slack in starting. The best illustration of that is one road in the United States which is hauling trains 10,000 tons with spring gear exclusively and using Mallet locomotives, they do not have any draft gear troubles.

L. E. Endsley: A locomotive has the power to start a few cars. There is always enough slack in a coupler or give of the different cars to have a movement between the cars to start the train. If your draft gears all have initial movement with low resistance for any given travel of the draft gears, this is going to reduce its capacity. I do not believe you need a very large initial movement in the draft gear.

G. E. Smart, Master Car Builder, Canadian Government Railways, President: I believe we are fully alive to the subject of draft gears. Friction draft gear is the gear for all types of cars today. I do not believe there is any railway in Canada that during the last five years has applied any other type than friction draft gears

on its passenger equipment, and the day is coming when there will be no other type on freight equipment. The ideal conditions have been explained tonight—as four miles per hour in switching cars in yards—but we do not always obtain this ideal condition, the switching speed is often more than four miles, judging by the noise of cars being coupled in freight yards. The question narrows down to a commercial proposition; the cost of switching cars and the cost of maintenance of car equipment for repairs per thousand miles. Many times the cost of repairs is increased as the result of reducing the cost of switching cars in yards and further damage as the result of same, which causes trouble and delay on the road after leaving terminals. We have a large number of wooden cars in Canada which must be considered by the railways, and as we cannot obtain steel for steel underframes we shall have to put on these wooden cars, metal draft arm and suitable draft gear. Money would be saved if we could apply a steel draft arm on the wooden centre sill, but steel underframes would be preferable, but owing to the demands for steel for ship-building we are not going to be able to do this, as we cannot get the necessary material; the next best method is metal draft arm.

### The Temiscouata Railway's Earnings.

At a meeting of holders of provisional certificates issued by this company's bond certificates issued by this company's bondholders' committee, in London, Eng., recently, the chairman stated that the gross earnings for the financial year ended June 30, 1917, were \$226,817; operating expenses \$202,240; net earnings \$24,577, against \$222,872 gross earnings, \$18,450 operating expenses, and \$42,421 net earnings for 1915-1916. The percentage of operating expenses to gross earnings was 89.17 compared with 80.96 for the previous year. He attributed the decrease in passenger revenue to the fact that the annual pilgrimage excursions usually run by the company, were banned by the Board of Railway Commissioners. The freight carried was 165,393 tons, against 159,985 during the previous year. In the operating expenses there was an increase of \$7,800 for fuel for road locomotives, due to an increase of 35c a ton in the price of coal, and also to the extra amount used due to cold weather. The amount brought forward from the previous year was \$2,313 which, with the net earnings, \$24,577, interest on deposits, \$1,054, and profit on exchange \$1,404, totals \$29,348, from which was paid, \$12,166 for one year's interest on prior lien bonds and \$9,733 to the redemption fund for prior lien bonds, leaving a balance of \$7,448, which is carried forward to the current year's accounts. No dividend will be paid for the past year on the provisional certificates issued by the committee. For the current year, the gross earnings for the first quarter showed an increase of \$15,068, and the net earnings, one of \$3,965. There is an abundance of traffic on the line, and should the car situation improve, better traffic results will follow. The operating expenses are continually increasing, and the company has been obliged to grant increases of wages in all departments. The General Manager reported from Canada by cable that at the end of Nov. 1917 there was a surplus of \$10,000, including the amount brought forward, after providing for fixed charges.



# Electric Railway Department

## An Address on Street Railway Operation.

By Edward P. Coleman, General Manager, Dominion Power & Transmission Co., Ltd.

The following address was delivered before the Hamilton, Ont., Rotary Club recently:—There are many and widely different classes of electric railways, ranging from the street railway proper—or improper, as you may desire—to the modern type of interurban or radial railway, generally constructed on its own right of way, which handles freight and express, as well as passengers, and is operated practically under steam railway rules. I wish to be understood as referring solely to street railways operating within the closely settled areas of busy communities with comparatively frequent car service and stops closely spaced. It will perhaps prevent misunderstanding to say that my statements are not intended to apply, except incidentally, to operation under present conditions. There is no doubt that traffic is now extremely congested on the Hamilton St. Ry., as it is on every street railway on this continent, on account of the present abnormal demands which at times would hardly be met if our tracks could be converted into moving sidewalks. There is a general impression that we should supply more cars, but I wish to say that if we had a hundred more cars we could not use them, on account of the serious shortage of power which now exists. Under the circumstances it is entirely out of the question to divert another horse power to street railway service, and if we were so blind to the situation as to make the attempt we would not be allowed to do so by the Power Commissioner. The many power customers who are here present should certainly appreciate this phase of the situation.

On account of the peculiar character of the work, street railways are also hampered in their operations by the present labor conditions, to an even greater extent than are the operations in other lines of activity represented in this club. For example, the Hamilton St. Ry. requires for its complete operation 272 car men, and during 1917 we hired 246 new men. As 107 men, or 39%, have been with us over two years, you will perceive that this constitutes a very considerable problem in training.

A yearly period of abnormal demand always exists at the merry Christmas season. I will, however, pass over that special feature and merely ask if you know of any busy store, barber shop, or post office where you can walk in at that time of year and be served immediately? Why, then, should not the street railway claim the right to be judged by the same standard?

In considering the question of street railway operation in normal times, we find that what is universally demanded is "satisfactory service," but that in itself is capable of an infinite variety of definitions. As a matter of fact, such a thing as "satisfactory" street railway service does not and cannot exist, as that would imply perfect results under extremely variable conditions which are entirely beyond the operator's control. The nearest approximation to this ideal result is a combination of compromises, and the only possible measure of efficiency is comparison with the service in similar com-

munities. A careful study of the situation develops the fact that precisely the same complaints and criticisms are made of the local street railway service in every busy and progressive community. The principal complaints can be grouped under the following heads, each of which bears a close relation to the others: 1, Frequency of service; 2, Variable spacing between cars and delayed cars, resulting in slow service; 3, Overcrowding of cars; 4, Cars running by passengers; 5, Inefficiency and discourtesy of employees; 6, Physical condition of equipment.

Let us briefly consider the problems



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and limitations of service under these heads, first frequency of service. As business men, you will naturally realize that the operation of a street railway must be governed by economic laws to the same extent as any other active enterprise, and must be as economically successful, that is, it must pay operating expenses, provide for replacement and depreciation and pay such amounts as interest or dividends as to attract the additional capital necessary for improvement and extensions. This should apply, whether the railway is owned by the public or by the so-called private corporation. The normal frequency of service, or car headway as it is technically termed, must then be governed to a considerable extent by the normal average demand. Usually this normal service is supplemented by more frequent service or shorter headway during certain hours of the day and also by trippers or extra cars interpolated to cover special service from large factories or centres of traffic. This condition is complicated by the fact that, 1st, every employe must be provided with a day's work of reasonable length and, 2nd, your legis-

lature has enacted a law which provides that no street railway motorman or conductor may, whether he wishes to or not, work more than 10 hours in any one day or on more than 6 days of any week. The general impression seems to be that a car is run out of the barn and thereafter goes its own way regardless of rhyme or reason, but such is not the case. The car operation of a street railway is divided into car schedules, and crew schedules, with time tables which must be absolutely conformed to, or they will not work out. To the uninitiated it often appears the most simple problem in the world to devise a better or more satisfactory schedule from our patrons' point of view, but when the earnest student of progress undertakes the task he invariably gives up in despair when confronted with the limitations. I remember one very attractive schedule submitted for our consideration, the claims of which were presented with considerable animation until it was pointed out that its operation required an average speed of 72 miles an hour on one portion of the line. The limit of car headway at rush hours is physically fixed by the congestion of traffic on the principal streets traversed, taking ordinary vehicular and pedestrian traffic as well as car traffic into consideration, and in many cities the traffic on these streets is often so dense that it is impossible for a cat to cross during rush hours.

Second, Variable spacing and delayed cars. Taking a normal five minute service on our Belt Line for an example, the problem is to start out 10 cars in each direction, spaced 5 minutes apart, making a round trip every 50 minutes and keep the cars 5 minutes apart and in their proper places at the various time points. The difficulty is to accomplish this under variable traffic demands, that is, not only variable over certain hours of each day, but from day to day as the weather may be fair or stormy, being at the same time subject to local delays from level railway crossings, avoidance of teams and automobiles, and the not infrequent delays caused by accidents of various degrees of seriousness. And then again, how much more difficult must it be when it is necessary to vary the spacing or headway at certain portions of the day to cover normally increased or rush hour traffic. When I state that the normal headway on our Belt Line varies from 5 minutes to 2 minutes, exclusive of trippers during each day, with special variations on Saturdays, you will realize the magnitude of the problem.

Third, overcrowded cars. Overcrowded cars are not only annoying to our patrons, but are responsible to a large degree for variable headway, but an investigation of this important item will develop the fact that the public are more responsible for this condition than they can possibly realize. With a reasonably close headway and cars of ample size, the only possible remedy for overcrowding is not to enter a crowded car but wait until accommodation can be secured. I know that this sounds like very unpalatable advice, but I can assure you that if it were followed the resulting service to each passenger would be more prompt as well



as more comfortable than at present. Given a string of cars a short distance apart, with everyone trying to get on the first car, and no matter how large that car may be or how many cars may be following, the first will always not only be crowded but will delay the others in which proper accommodation might have been secured. The so called comfortable service in Europe (I am speaking now of the period before the war) was secured by laws which forbade passengers to enter a crowded car, and I am assured on competent authority that it was often necessary to wait half an hour before accommodation could be secured. That would not be necessary here, as 5 minutes delay, or at most 10 minutes under the worst conditions, would be the limit, and we have all waited longer than that for service in barber shop or shoe shine parlor. In connection with this item I wish to remark, parenthetically, that the public in Canada are to a large degree responsible for the crowded rush hour conditions by reason of having imposed upon the companies the so called limited fare periods, which in effect offer a premium for using the cars at the time of the greatest congestion. This is entirely wrong in principle, as every merchant will realize.

Fourth, Cars running by passengers. The only means that the street railway operator has under his control to restore normal service or to prevent overcrowding, with its attendant delays, is to run the delayed or crowded car by waiting patrons and leave them for the next car, and this should properly be done in the general interests of the public. This is the fact, but you all realize the storm of complaint that is aroused when it is carried out. We even have the most bitter complaints presented because car crews do not wait for passengers who are running after a car, regardless of the fact that not only would such action, if carried out to any extent, result in variable service, but that the motorman and conductor are compelled to keep their eyes very rigidly on the limited space in the immediate vicinity and ahead of their car to guard against accident and other contingencies. I am sure that if anyone will take a seat at the front of any of our cars and stay through several round trips, giving careful consideration to the details of operation, he will have a much greater respect for the responsibilities of the crew than he can have at present. It is true that a motorman will sometimes run by passengers, with a clear view and a partially loaded car, but this is seldom done intentionally. It is very often the fact that following a near collision, or on approaching a cross street from which an automobile is liable to appear, the motorman may be mentally oblivious to everything excepting the averted or anticipated danger. Our medical members can assure you that this constitutes a well known and common mental lapse in the most intelligent.

Fifth, Inefficiency and discourtesy of employees. How many department store managers could send their employees off around the city in pairs and be willing to guarantee their courtesy and capability under all conditions and in all circumstances? Street railways are under the same limitations regarding their employees as any other employer, and at the same time the street railway employee is in a much more difficult position than obtains in other lines. In many, many cases that have been brought to my personal attention I have been shocked by the discourtesy of passengers to conductors. Too

much should not be expected of these men. Some of our employees, who are the most faithful and reliable in the matter of safe operation, and whose care for the physical safety of their passengers, is the most unrelenting, are unfortunately not gifted with the suave diplomacy of a Chesterfield. We wish our men to be courteous under all circumstances, but a large part of our problem would be solved in this respect if our passengers would be more uniformly courteous to our men. I have myself seen a young conductor become almost hysterical under the badgering of a passenger, with the result that he was rude to the next passenger who innocently accosted him. I do not defend discourtesy, on the contrary we deal with it severely, but it is absolutely necessary that we should deal justly and with careful consideration of all of the attendant circumstances in cases of this nature. We must also realize that 272 men must necessarily vary to a large degree in intelligence and disposition and make proper allowances for the fact.

Sixth, Physical condition of equipment. It is naturally impossible to secure perfection in constantly operated and sometimes abused machinery. An electric car is a very complicated machine and gears will get out of true and rub on the gear cases. Wheels will get flat, but it is not true that it is the same flat wheel that you hear the next day, even if it is the same car. Whenever the wheels are locked by the brakes and skidded, a flat is liable to result, especially on a dusty or sanded track. A car may leave King and James Sts. with its wheels in perfect condition and have a flat before it reaches Hunter St. These flats, which sound so portentously on our solid track structure, are small affairs, often about the size of a silver five cent piece, and are extremely hard to locate. The only remedy is to lay the car up and grind the wheels, or to replace the pair of wheels and axle in bad cases. Under certain weather conditions it is impossible to avoid skidding, and an epidemic of flats will develop which cannot be repaired at once without discontinuing the service almost entirely, but no car is allowed to remain in this condition for any length of time. Ordinarily it is removed from service at once. A long paper could be written on the care and condition of cars alone. How many here realize that our cars are continually washed inside with an antiseptic solution? That is the reason for the peculiar odor sometimes observed, which passengers take to indicate that the car is dirty, when the contrary is the fact. It is only by unremitting care that street cars are prevented from running a close second to the trenches in many respects.

The public can do more to secure good service than can we, if passengers will only observe the following simple precautions:

Board the car promptly and do not stand in the rear vestibule. This not only interferes with the operation of the car and hampers rapid loading, but is an annoyance to everyone getting on the car, especially to ladies.

Pass up forward. The chances are that you will find a seat at the front of an apparently crowded car. I have done so many times. In one case I observed five empty seats in a car that was so packed at the rear end that I was obliged to use the front door.

Leave by the front door if possible. This will reduce the stopping time to a very considerable extent and is much the safest practice.

Do not enter a crowded car. Wait for

the car following.

Do not enter into an argument with the conductor. If there is any cause for complaint, refer it to the office and it will receive careful and considerate attention. If the trouble is over a fare or transfer, the office is the only place where it can possibly be corrected.

We welcome complaints at the office, as they enable us either to give a satisfactory explanation or to correct abuses of which we could otherwise have no knowledge. Indefinite newspaper complaints are of no value except to make useless trouble, and it must be remembered that the newspapers' interest in the matter is based upon far from unselfish grounds.

All complaints to be effective must carry reliable information as to car number, place and time, or we will be absolutely helpless in the matter. In serious cases a reliable witness should be secured, as we cannot act upon a passenger's unsupported word against that of the car men. No court in the land would do that.

### Port Arthur Civic Railway's Financial Position.

J. A. Oliver, the retiring President of the Port Arthur, Ont., Board of Trade, in the course of his address at the annual meeting Jan. 14, made the following reference to the Port Arthur Civic Ry.:—"In 1916, 2,748,213 passengers travelled on our street cars. On July 25, 1917, the railway fares in the city were reduced. Six ordinary tickets or 8 workingmen's tickets or 10 children's tickets are sold for 25c. On the main line the rates are doubled at the boundary between Port Arthur and Fort William. During 1917, including the additional fare at the boundary, since July 25, 3,246,953 tickets were collected. On the main line, as well as on each belt line, the number of passengers travelling has steadily increased each month, but the increase has not been sufficient to make up the decrease in the price of tickets within the city. The main line, however, has made up at least \$2,000 each month since the change. The street railway revenue since 1916 amounted to \$125,000, being an increase of \$19,000 over 1916. The commissioners, however, out of this amount paid \$7,000 for the repairs on Cumberland St. and \$3,000 for the bridge over the Neebing River, leaving the net deficit on the railway at \$8,000 less than in 1916. For the benefit of the citizens, let me state that the net earnings exceeded the operating expenses by \$23,000, but this excess is not sufficient to clear the interest on investment and depreciation charges; and in addition the sinking fund each year must be met. To sum up the position as regards public utilities during last year, this city faced a loss on its street railway, telephone and water, and had a surplus on its light and power and Current River improvement accounts, the net loss for the year being \$55,425."

Winnipeg Electric Ry. Stops.—Referring to a complaint as to the number of stops. A. W. McLimont, General Manager, Winnipeg Electric Ry., said to the city's Board of Control Jan. 15:—"While most of our patrons are willing to admit there are too many stops, reluctance is shown immediately their own particular stop is questioned, but with the appreciation of the public of the advantages obtained for themselves by reducing the number of stops in securing more rapid and generally improved transportation, I feel they will co-operate with us in this respect."



## The City of Toronto and the Toronto Railway.

At a meeting of the Toronto Board of Control, Jan. 18, the Mayor outlined his proposals in regard to the operation of the Toronto Ry. and for the improvement of the service. He stated that the company was several hundred cars short, and overcrowding was never worse; that the Ontario Railway and Municipal Board, in six years, had made several orders and revoked them, and that the law courts seemed unable to cope with the evil, and public rights were nowhere.

The Mayor's proposals, which were agreed to by the Board of Control, cover an application under sec. 260 of the Ontario Railway Act, for the Ontario Government, through the Ontario Railway and Municipal Board, to take over and operate the railway on account of breach of contract between the city and the company; to place penalties on the company for failure to build the cars ordered to be built, the penalty to be \$500 a day, dating from Jan. 1, 1918; to commit the company's officials and for a mandamus to compel the company to build the cars as ordered; for an indictment against the company for overcrowding, for maintaining a public nuisance, and for breaches of the Public Health Act; for legislation overruling the Imperial Privy Council's recent judgment on the overcrowding case; to compel the Ontario Railway and Municipal Board to enforce its orders, and in general to "reform" the Ontario Railway and Municipal Board.

No doubt many of these proposals are in reality New Year resolutions, but whether so, or not, they are strong evidence of the utter incompetency of those responsible, to realize the situation as it is, or to propose any proper solution of the difficulties, for which, to a certain extent, the city council is blameable. By sec. 260 of the Ontario Railway Act it is provided that where an agreement between a municipality and a company for the operation of a street railway has been violated, the Ontario Railway and Municipal Board shall hear all matters relating to such alleged violation, and shall make such order as to it may seem just, and may direct such company or such municipality to do, or refrain from doing such things as may be necessary for the fulfillment or may constitute a violation of such agreement; and for the enforcement of such order, it may take possession of, and operate, such street railway, and carry it on with all the powers possessed by the company. It therefore follows that an application by the city for the board to take over and operate the railway would lie pending a hearing as to the alleged violation of the agreement. If the city alleges a violation of the agreement, its duty is to lay the claim before the board, upon which an enquiry will be held, and should the evidence justify it, an order would be made.

Legislation for affixing a penalty clause to an order for building additional cars has already been refused by the Ontario Government, and it is not likely, under existing circumstances, that another application will meet with success. On the matter of building additional cars, the board some time ago ordered that the company place in service by Jan. 1, 1918, 100 additional double truck cars, and by Jan. 1, 1919, another 100. This order was made just prior to the outbreak of war, and only a very small proportion was built, the disorganization of ordinary business, owing to the demand for munitions, being responsible for the company's failure in complying with the board's order.

On hearing various applications of the city on the matter, the board expressed the view that it would be useless to attempt to force the issue on account of war conditions, and on the city pressing for some enforcement, and on the company explaining the impossibility of obtaining cars, or the material with which to build them in Toronto, according to the company's agreement with the city, the city was given power to waive its rights regarding the building of cars in the city, and to co-operate with the company in the endeavor to obtain cars from other sources. As was expected, the result was the same, the city being in no better position to obtain cars than the company, even for the civic railways. The situation today, as regards car building, is no better than it was, the demands for war purposes, naturally, being met first. It therefore seems improbable that the legislation asked for will be granted.

The overcrowding question, which is a very serious one, has, owing to the perverseness of the city authorities, developed into something of a joke, a rather grim one truly. The history of the various cases before every variety of court from the police court to the Judicial Committee of the Privy Council, exhibits the ineptitude of the city council for finding a reasonable way out of an intolerable situation. Thousands of dollars have been spent on reports and investigations, to no purpose, while the city has the remedy in its own hands. When a charge of overcrowding was before the local courts some time ago, the company pointed out that it was wrongfully laid, and in admitting overcrowding, claimed that the charge should have been laid in an entirely different manner. On the final appeal to the Privy Council, this contention was upheld, it being stated that "the wrong done is only a civil wrong." The city laid the indictment under the Criminal Code, and not under a civil law, under which a judgment may be rendered, providing for the abatement or remedy of the mischief done. Apparently, it is the intention to proceed along the same lines as before, and in addition, to apply for legislation by an amendment of the Ontario Railway Act, providing penalties for overcrowding.

Regarding the power of the Ontario Railway and Municipal Board to enforce its orders, it may be said that it is possessed of ample powers in this respect, but it is not called upon to enforce its orders against its better judgment.

**Execution against Toronto Ry.**—A motion to stay an execution obtained by the City of Toronto against the Toronto Ry. was heard Jan. 21. The execution was obtained following an order by the Board of Railway Commissioners, directing the Toronto Ry., in conjunction with the C.P.R., G.T.R. and Canadian Northern Ry. to pay certain sums, in the case of the Toronto Ry., \$80,000, amounts due in connection with the construction of the bridge over the steam railways, carrying Queen St. East and the T. R. tracks. Questions were raised as to the board's jurisdiction, the Toronto Ry. being a provincial company, and also whether the courts are not being made ancillary machinery to the enforcement of the board's orders. Judgment was reserved.

## Sandwich, Windsor and Amherstburg Railway Franchise.

The following three questions were submitted to the ratepayers of Windsor, Ont., at the annual municipal elections Jan. 7:

1. Are you in favor of the city corporation, by due process of law, taking over the lines and other property of the Sandwich, Windsor & Amherstburg Ry., the same to become, through mutual arrangement, and upon fair conditions, the property of the several municipalities immediately concerned, and the whole of the lines or branches of the said railway to be operated by the Hydro-Electric Power Commission of Ontario?

2. The Sandwich, Windsor & Amherstburg Ry. having refused to make the necessary extensions of its lines to meet the needs of the municipality, unless its existing franchise be extended till 1932, are you in favor of the franchise being extended to that date in order to secure the said extensions?

3. Are you in favor of the city constructing the necessary extensions of the tracks of the Sandwich, Windsor & Amherstburg Ry., and securing, through the Ontario Railway and Municipal Board, an arrangement on a rental basis for the operation of such extensions by the aforesaid railway until the expiration of its franchise in 1922?

The first question was answered in the affirmative by 1,510 to 330; the second question was answered Yes by 380 and No by 891; and the third was answered Yes by 997 and No by 399.

It is stated in regard to the subject of the first question that the plan in mind is to prepare for the purchase of the system by the time the franchise expires in 1922 and for the operation of it under the direction of the Hydro-Electric Power Commission of Ontario.

The city council has under consideration a plan for building a loop at Ferry Ave. The company claims that this loop is necessary in order to give an adequate service, but it is argued on the other hand that double diamonds at the corner of London and Oulette Sts. and at Sandwich and Oulette Sts. are all that is necessary. The question involved is whether a two-way service is required on the west side for the Sandwich and tunnel cars.

The council will take up at an early date the question of building certain extensions to the company's existing tracks at the city's cost. One of the propositions made is to extend the line from Oulette to McDougall St., to Gladstone or Lincoln St. and to connect it with the Ottawa St. line in Walkerville. (Jan., pg. 32).

**Ottawa Electric Ry. Strike Averted.**—Owing to the dismissal of a motorman and a conductor on the O.E.R., for violation of rule 15, by leaving their car, the farebox being stolen during their absence, the other employees threatened to go on strike on Jan. 21, but this was averted, as a result of a conference between President T. Ahearn and the men's grievance committee, the company agreeing to reinstate the conductor and motorman and the men agreeing not to press for a five-minute lay-off on each trip, which they contended was necessary, if rule 15 was not to be violated in the future. The chairman of the men's grievance committee, and the secretary of the men's organization, spoke highly of their treatment by Mr. Ahearn, and of his declining to have the loss involved by the fare box being stolen, while the conductor and motorman were absent from the car, being borne by them.



## Storm Damage on the British Columbia Electric Railway.

Canadian Railway and Marine World has been favored with the following particulars of the damage done on the B.C. E. R. Co.'s Fraser Valley Branch by the storms known as "the silver thaw." The letter was dated Vancouver, Jan. 14: The first storm swept the valley on Dec. 13, but fortunately little damage was done to the distribution system. The high tension, as well as trolley, wires were broken in one or two places but were soon repaired and little inconvenience was caused. The B. C. Telephone Co., however, suffered very severely and it will be some months before its poles and lines will be replaced as they existed formerly.

The second storm commenced on the night of Dec. 27, and continued for the best part of three days, during which period heavy rains fell, freezing when coming in contact with wires, poles, rails, trees, etc. The ice was of the transparent kind and formed to a thickness of between 4 and 5 in. on the standing objects and the weight, together with the wind, caused many poles carrying high tension, trolley and telephone wires to fall. On one stretch of two miles of track 146 poles fell and at another point 106 were brought down. All the damage to the railways occurred between Coghlan and Chilliwack, the former point being 25 miles east of New Westminster.

As soon as the extent of the damage done was ascertained, wrecking equipment, consisting of 3 steam locomotives, 1 steam derrick, 2 line cars, and 3 work trains, was rushed to the scene of the trouble and work commenced immediately to repair lines. One of the locomotives was borrowed from the C.P.R., and the other two small logging ones from the Timberland Lumber Co. and the Shearwater Lumber Co., both industries on the Fraser Valley Branch, and by this means it was possible to proceed with clearing operations without the aid of electrical energy. Ice formed on the rails, wires, etc., almost as quickly as it could be removed, and this, coupled with the fact that in many places poles, which at one time stood on both sides of the railway had fallen across the centre of the track, made progress very slow for the first three days. At the end of three days milder weather set in, a chinook wind soon caused all ice and snow to disappear, and while this helped tremendously, in one way it caused exceedingly high water in all streams and rivers, washing out the tracks in many places, the most serious one occurring at Whatcom Road, just east of Huntingdon, where the Nootsack River intersects the railway, and where a gap 65 ft. long and 20 ft. deep had to be bridged. At another point just west of Chilliwack, the track was washed out in spots for three-quarters of a mile from 1 to 4 ft. deep. Smaller washouts were encountered frequently.

During the whole time train service was operated between New Westminster and the point of clearing, part of the way by trolley and the balance by steam power. During the first week three trains were operated only to Coghlan, then to Gifford, then to Abbotsford, and then to Huntingdon, finally reaching Chilliwack on the night of Jan. 9. At the time of writing the trolley wire is up and operative as far as Huntingdon—from there to Chilliwack the trains are being hauled by steam power.

It is estimated that about 550 poles are

down or hanging, a number of which will require to be reset, but in order that the line may be put in operation with the least possible delay, poles are being placed at intervals of approximately 200 ft. on which trolley bracket arms are being placed. The trolley wire is following the erection of these arms and only just sufficient other wires are placed on the poles as will permit re-establishing light, power and telephone connections with Chilliwack and intermediate points which have been so hard hit. This will be followed up with the placing of additional poles at distances of 100 ft. apart, and when complete will be of similar construction to the distribution system on the Burnaby Lake Branch. The double pole line, which formerly existed on the Fraser Valley Branch, will not be re-established.

Several small slides occurred around Vedder Mountain, but these were cleared away by section forces before trains reached that point.

There are employed on this repair work approximately 50 linemen and groundmen, 30 trackmen and 10 bridgemen, in addition to men in train service and on wrecking equipment. The equipment available to make repairs does not justify the employing of a greater number than this, and it is doubtful if additional skilled labor could be got, even if wanted.

Sufficient materials are on hand to make temporary repairs only, and it is necessary to get a supply of copper wire, guy wire, telegraph wire, trolley ears, pull-overs, bunk house equipment, etc. It is quite impossible to give anything like an accurate figure as to what the cost of repairs will amount to, but from a casual inspection of a portion of our property affected, made a few days after the storm it is estimated that \$150,000 may be required. If all goes well it is anticipated that the high tension line will be re-established into Chilliwack by Jan. 23 or 24, and the trolley and telephone services about the same time.

At present three passenger trains are being operated each way on the Fraser Valley Branch: one goes to Mt. Lehman only, the other to Huntingdon, while the third operates to Chilliwack. In addition to these 1st class trains, a milk, way freight and express service is also operated over the whole line. These services will not be augmented until the trolley wire and roadbed are more substantially repaired.

**Nova Scotia Tramways & Power Co.**—The Nova Scotia Public Utilities Commission, in dealing with the company's recent application to increase the authorized capital stock from \$6,000,000 to \$10,000,000, and to issue \$975,000 of bonds, approved a capital expenditure of \$845,641, but deferred approval of a further expenditure of \$569,586 and, for the present, declined to approve the proposed increase in capital.

**Near stops in Winnipeg.**—The Winnipeg Electric Ry. started on Jan. 9 to stop its cars for passengers before crossing a number of intersecting points, instead of both before and after crossing as formerly. Where poles are available, stopping places are designated by poles painted white. In order to facilitate the service the company has in a number of instances where local conditions are suitable, eliminated the far side stops.

## Electric Railway Finance, Meetings Etc.

**Brantford Municipal Ry.**—A press dispatch states that during 1917 the earnings totalled over \$111,598, an increase of about \$13,000 over 1916. The increased earnings have been absorbed by increased wages and other operating charges.

**British Columbia Electric Ry. and allied companies.**

	Nov. 1917	Nov. 1916	5 months Nov. 30, 1917	5 months Nov. 30, 1916
Gross	\$525,629	\$472,767	\$2,368,105	\$2,168,426
Expenses	384,320	363,230	1,935,641	1,765,086
Net	141,309	109,537	432,564	403,340

**Calgary Municipal Ry. Earnings.**—Dec. 1917, \$58,379.08; for Dec., 1916, \$49,605.13. Increase, \$773.95.

**Cape Breton Electric Co.**

	Nov. 1917	Nov. 1916	11 months Nov. 30, '17	11 months Nov. 30, '16
Gross	\$42,612.67	\$34,904.09	\$205,999.52	\$173,297.82
Exp.	28,255.79	19,083.26	134,013.02	93,833.67
Net	14,356.88	15,820.83	71,986.50	79,464.15

**London & Port Stanley Ry.**—At the annual meeting of the London City Council Jan. 15 the following appointments were made: London & Port Stanley Ry. Board—Mayor C. R. Somerville, Controller J. H. Saunders, Ald. P. J. Watt, F. R. Watkinson, L. S. Holmes, W. A. Wilson, H. B. Ashplant, S. R. Manness and Winnett Members of the London Railway Commission—Sir Adam Beck and Philip Pocock.

The Mayor at the inaugural meeting of the London City Council Jan. 15, referring to the L. & P. S. Ry., said: "It is possible that the London Railway Commission, by curtailing every capital expenditure not imperatively demanded, may be able to meet all or part of the bonded indebtedness of the L. & P. S. Ry. The commission provided for the payment of its own debenture account, but the city still has to pay, annually, about \$5,000 on account of the old L. & P. S. Ry. debt."

**Toronto Railway—**

	City 1917	percentage	City 1916	percentage
Jan.	\$150,052.52	\$76,507.88	\$473,784.15	\$68,846.63
Feb.	473,185.48	70,977.82	470,764.90	70,614.73
Mar.	531,080.42	105,875.82	518,555.65	97,237.26
Apr.	510,334.90	102,066.98	496,172.00	99,244.40
May	510,869.55	102,173.91	500,515.28	109,103.05
June	499,731.83	99,946.36	467,086.05	93,417.21
July	467,382.15	93,476.43	469,845.72	93,969.15
Aug.	516,966.70	103,393.34	474,824.90	94,964.98
Sept.	532,007.92	102,560.63	506,620.38	100,529.63
Oct.	534,135.95	104,053.75	487,954.07	99,306.32
Nov.	537,505.22	105,823.51	489,987.03	100,890.20
Dec.	570,310.03	113,655.98	525,395.15	113,037.34

\$6,193,562.67 970,512.41 \$5,881,505.28 909,880.90

**Toronto Ry., Toronto and York Radial Ry. and allied companies.**

	Nov. 1917	Nov. 1916	11 months to Nov. 30, 1917	11 months to Nov. 30, 1916
Gross	\$1,052,000	\$911,829	\$10,986,998	\$9,825,053
Expenses	623,444	474,520	5,954,822	5,032,010
Net	428,556	437,309	5,032,176	4,793,043

**Winnipeg Electric Ry. and allied companies.**

	Nov. 1917	Nov. 1916	11 mths. to Nov. 30, 1917	11 mths. to Nov. 30, 1916
Gross	\$305,881	\$282,899	\$3,039,397	\$3,023,170
Expenses	218,993	181,267	2,290,421	1,946,412
Net	86,888	101,632	748,976	1,076,758

**The British Columbia Electric Ry. Social Club officers for the current year as elected Jan. 14 are:** Honorary President, G. Kidd; Honorary Vice President, W. G. Murrin; President, E. A. Chamberlain; Vice President, E. E. Walker; Secretary, P. Lewis; Treasurer, J. V. Armstrong; Executive Committee, R. Carvel, F. E. Reid, J. Lightbody, F. Fatkin, C. Cook, O. C. Mix, S. A. Horner, A. Forsyth, H. Findlay, P. Runcie, A. Manfield, J. Munro, R. V. Moss, W. G. Chandler, J. G. Richardson, F. Potts, E. W. Arnott, F. Fisher, J. McNee and J. Baldwin.



## Electric Railway Notes.

The British Columbia Electric Ry. office staff held its annual dinner recently, G. Kidd, General Manager, presiding.

The Montreal & Southern Counties Ry. has under consideration the purchase of two electric locomotives of 50 tons capacity each.

South Vancouver municipality decided Jan. 11 to oppose any proposal made by the British Columbia Electric Ry. to increase fares.

The Brantford Municipal Ry. has reduced the service to Paris, Ont., from a car every hour to one every two hours in either direction.

The Quebec Railway, Light and Power Co. is reported to be about to apply to the city council to authorize it to increase its passenger fares.

The Guelph Radial Ry., owing to the necessity of conserving power, has reduced its car service to one hour at noon, and the ordinary service in the evening.

The Cape Breton Electric Co. is reported to have decided to place in service, on its electric railway in Sydney, N.S., early this year, a number of what are commonly known as "safety" cars.

Hon. John Oliver, Minister of Railways for British Columbia, went to Seattle, Wash., Jan. 6, to study the street railway situation there and in other Washington cities, in connection with Adam Shortt's report on the British Columbia Electric Ry.

Edmonton, Alta., City Council has been asked by the Street Railwaymen's Union to reconsider the question of the recognition of the union, the reinstatement of men who were laid off at the termination of the recent strike, and the wage schedule.

The British Columbia Electric Ry. carried 2,742,575 passengers in Vancouver during Nov., 1917, against 2,231,699 in Nov. 1916. On Monday, Dec. 24, 1917, the Vancouver city line cars carried 142,666 passengers against 110,411 Dec. 24, 1916.

The Edmonton City Council will consider at an early meeting a bylaw embodying all regulations for working for employes in the street railway department, to take the place of the agreement which was terminated with the strike last year.

The Edmonton City Council is applying to the Alberta Legislature for a number of amendments to its charter, among them being one authorizing the charging of fares on the Edmonton Radial Ry. on the zone system, instead of the present system.

The Public Utilities Committee of Edmonton, Alta., is giving considerable consideration to the fare question on the Edmonton Radial Ry. The city council is applying to the Alberta Legislature for power to charge fares on the zone system if thought expedient.

The Brantford Municipal Ry. Commission decided Jan. 16 to suspend all freight traffic on the Grand Valley section of the line from Brantford to Galt, Ont., from Jan. 19, owing to power shortage. The passenger service is confined to a car every two hours in each direction.

The Sandwich, Windsor & Amherstburg Ry. has curtailed the service on its lines in Windsor, Ont., by laying off six cars. The mayor called for a resumption of the full service on Jan. 10, and said the coun-

cil would appeal to the Ontario Railway and Municipal Board if satisfaction was not given.

The Windsor, Essex and Lake Shore Ry. has cut its service between Windsor and Leamington, Ont., by taking off the car leaving each terminal at 9 p.m. The special freight and express car will make one trip a day in each direction, leaving Leamington at 10 a.m. and leaving Windsor at 2 p.m.

Among items culled from the Winnipeg Free Press of Jan. 23, 1893, in "Twenty-five years ago to-day," was the following: "Though the Winnipeg St. Ry. system is now complete, A. W. Austin has gone to New York to see if something better than electricity cannot be found for street transportation."

A. W. McLimont, General Manager, Winnipeg Electric Ry., advised the Winnipeg Board of Control, Jan. 7, that expert advice had been called in by the company to advise as to the system of heating the street cars. There had been numerous complaints, and the company was going to see what could be done to remedy matters.

The Toronto Suburban Ry. has advised the Ontario Railway and Municipal Board that it considers its portion of the cost and maintenance of the safety devices placed at the crossing of the T.S.R. by the Toronto Civic Ry. at Lansdowne Ave. and Davenport Road, is excessive. The board is looking into the matter and has ordered a report by its engineer.

The Guelph, Ont., City Council is asking the Ontario Legislature for a reorganization of the council and among other things the dissolution of the board of directors of the Guelph Radial Ry., and that the directors' powers shall in future be vested in the members of the council, who shall be considered to be directors under the acts relating to the G. R. Ry.

Superintendent Moir of the Edmonton, Alta., Radial Ry., complains of the manner in which the public treat the waiting rooms. He states that their condition is due to wanton mischief and deliberate destruction, and instances a recent case where the stove in the waiting room was overturned and considerable damage done, while the lamp and everything available was stolen.

Montreal Tramways Co.'s employes are reported to have decided at a meeting, Jan. 15, to ask for a 4% increase in wages on the ground that they were being asked to work longer hours because of the shortage of labor due to the operations of the Military Service Act. It is stated that some of the employes were of the opinion that a strike should be called on Feb. 1, if the demand was not complied with.

The Brantford Municipal Ry. Commission announced Jan. 11 that owing to the Hydro Electric Power Commission of Ontario's request that the power load be reduced, it was necessary to reduce the schedule on the main line to a 15-minute one, and on the Eagle Place and Holmedale line to a 20-minute one. This applies to the day traffic up to 6 p.m., after which hour the regular schedules are in force.

The question of the employment of naturalized aliens has again become a live one in Calgary, Alta. Some months ago a resolution was passed directing the dismissal of all aliens, but at the last meeting of the council of 1917 this was repealed. T. H. McCauley, Superintendent Calgary Municipal Ry., states that he has

employed only one such alien under the new order, and that for snow shovelling, and other work.

The International Ry., which operates the Niagara Falls Park and River Ry., between Queenston and Chippewa, Ont., will, it is said, be considerably affected by the U. S. War Department's order requisitioning all electrical energy imported and distributed by the electrical companies at Niagara Falls, N.Y., and will be compelled to rely largely on its steam generated power, which has been held in reserve for emergencies.

G. Kidd, General Manager, British Columbia Electric Ry., has advised the Point Grey municipality that the company cannot run cars on its line in the municipality much longer under existing conditions, and suggests an increase of fares from 10 tickets for 50c to 10 tickets for 70c; school children's tickets to remain as at present, as far as Magee station. It is stated that the cost of operating cars in the municipality is 23c a mile, while the revenue is only 6.7c a mile. A committee of business men has been formed to discuss the matter with the company.

We have been advised that it is not likely that the projected line from the G.T.R. to the military hospital at Whitby will be electrified. There was a proposal that a street railway be constructed, running from the C.P.R. through the town to the hospital, and the Hydro Electric Power Commission of Ontario looked into the matter, and reported that such a line could only be operated at a considerable annual loss, which would have to be borne by the town. As a result nothing was done, and we are informed that it is not likely that the line from the G.T.R. to the hospital will be electrified.

**Increased rates for electric railways.**—Following the issue of general order 213 on Dec. 26 by the Board of Railway Commissioners, authorizing steam railways to advance freight and passenger rates generally speaking 15%, except in British Columbia, several electric railways under Dominion jurisdiction filed freight and passenger tariffs with the board making similar increases. The board has refused to sanction these tariffs, on the ground that no application having been made by electric railway companies for rate increases and no costs or other statistics having been submitted in their behalf no general order can be made in their favor.

**British Columbia Electric Ry. Franchises.**—The Mayor of Vancouver and representatives of some other city and rural municipalities on the mainland in which the British Columbia Electric Ry. operates, met Jan. 7, to discuss the question of a consolidation of the company's franchises. It was arranged to hold another conference later, so that every municipality in which the company operates may be represented. A press report says: "It is understood the scope of the next conference is to include not only the consolidation of B. C. E. R. franchises but also unity of action in regard to all B. C. E. R. matters generally in which any or all of the municipalities or cities are interested."

**Higher Fares for Boston.**—The Massachusetts House of Representatives has under consideration a bill providing that the Boston Elevated Rd. may charge a 6c fare, the extra cent to be paid to the city of Boston in lieu of other taxes. The bill further provides that the city shall utilize the funds received from this source for the maintenance of subways, tunnels and other ways along the company's lines.



## British Columbia Electric Railway Co's Annual Report.

The following report was presented at the annual meeting in London, Eng., Jan. 4:—

The following charges have been made against the revenue account for the year:

Provision for renewals maintenance	£101,459	4	3
Provision for income tax	15,000	0	0
Addition to capital amortization fund	2,761	17	11

£119,221 2 2

The net revenue for the year, after making the above deductions, amounts to £160,844 6 8

To which is added—

Balance brought forward from last year 6,859 13 3

Amount transferred from reserve fund 44,000 0 0

£211,703 19 11

And deducted—

Interest on debenture and debenture stock for the year to June 30, 1917 £132,671 1 6

Dividends already paid on 5% cumulative perpetual preference stock for the year to June 30, 1917 72,000 0 0

£204,671 1 6

Leaving, to carry forward to next account, a balance of £7,032 18 5

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the period show an approximate decrease of \$2,648. Having regard to the uncertain outlook for the immediate future, the directors feel that it is prudent to postpone the payment of the interim dividend payable Jan. 15, 1918, on the 5% cumulative perpetual preference stock. It, however, at the end of the financial year, an improvement in the operating results is shown, the whole or part of the dividend may be distributed in July next, and a resolution giving authority to the directors to draw on the reserve fund so far as may be necessary for this purpose will be submitted to the meeting.

The directors desire to express their appreciation of the very valuable services rendered during a most arduous year by the General Manager and other responsible officials of the company, and also of the co-operation of the whole staff. Two directors, R. M. Horne-Payne and E. Maes Harvey, who are due to retire, offer themselves for re-election.

### Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**—The municipalities of Point Grey, South Vancouver, Burnaby and other suburban districts are taking up the question of consolidating the B.C.E.R. Co.'s various car line franchises. A conference has been called at the instance of the Point Grey municipal council. (Jan., pg. 32.)

**Chatham, Wallaceburg & Lake Erie Ry.** A press report states that it is proposed to utilize Hydro-Electric power on the Chatham-Wallaceburg section of this railway. Owing to coal shortage the company has been unable to generate sufficient power at its own plant to keep the line going. It was reported Dec. 29 that converters were being installed at Wallaceburg, and that hydro-electric power would be utilized early in January.

**Edmonton Radial Ry.**—A press report states that about 900 ft. of line is under construction to connect up two parallel lines in Edmonton, Alta., and thus form a new belt line.

A waiting room has been erected at the corner of 109th St. and Jasper Ave., Edmonton. (Jan., pg. 32.)

**London St. Ry.**—The London, Ont., city council has under consideration a petition asking that a request be made to the company to extend its line north on Quebec St. from Dundas St. to the C.P.R. tracks. (Dec., 1917, pg. 488.)

**Nova Scotia Tramways & Power Co.**—A press report states that the company expects to place in service about 3.5 miles of new track during this year. (Sept., 1917, pg. 369.)

**Okanagan Lake, B.C., to Oroville, Wash.** A press report states that in connection with the development of the West Kootenay Power Co., in the Copper Mountain district, an electric railway may be built from Okanagan Lake to Oroville, at the International Boundary.

**Ottawa Electric Ry.**—A special committee was appointed by the Ottawa City Council Jan. 18 to meet the company's officers and ascertain under what arrangements the company would consent to extend its car lines to Ottawa East. About a year ago, when the matter was discussed, the company stated that it would not

make the extension for two reasons: first, that it would not operate cars over the Pretoria Ave. bridge, and second, that owing to the short time its franchise has to run, it was not prepared to make such extensions. (Oct., 1917, pg. 407.)

**Sandwich, Windsor & Amherstburg Ry.** We are officially advised that the company recently completed the laying of 2,000 ft. of new track on Ottawa St., Walkerville, Ont. This is an extension.

**The Southern Canada Power Co.,** which has among its subsidiaries the Sherbrooke Ry. & Power Co., is contemplating the construction of about 100 miles of high tension transmission line, and has called for tenders on poles, cross arms, insulators, cross sarm braces, wire and other material for same.

**Whitby, Ont.**—Construction is reported to have been started on a line from the G.T.R. main line to the Military Hospital at Whitby, Ont. It is reported that this piece of line will be electrified, and will ultimately form part of the electric lines proposed to be built under the Hydro Electric Power Commission of Ontario's plans.

**Windsor, Essex & Lake Shore Rapid Ry.**—A press report states that a plan has been given consideration for the building by the Windsor, Ont., city council of a cross town line on Erie St., Windsor, and renting it to the W. E. & L. S. R. Ry. for operation. (Dec., 1917, pg. 407.)

### Damage Action Against the Montreal Tramways Co.

Five actions for damages were entered in a Quebec court Jan. 4, against the Montreal Tramways Co. The total amount of damages claimed is \$9,575, the smallest amount being \$300 and the largest \$4,000. From the declaration of the plaintiffs—J. R. Trudeau, Pierre Gagnon, Alderic Crump and Ulric Belanger—it appears that on Oct. 27, 1917, they were all passengers on a Lachine car; that between the Montreal West and Senecal stations while they were all in the smoking compartment of the car, the conductor ordered them to stop smoking. They refused to abide by his request, whereupon he ordered the motorman to back up the car to Montreal West. In backing up the car, a collision followed, in which the plaintiffs allege they were seriously injured and they blame the Montreal Tramways Co. for the action of its employees.

**Toronto & York Radial Ry.'s Metropolitan Division.**—The Ontario Railway and Municipal Board, at the request of the Toronto City Council, will conduct an arbitration into the question of the price which the city is to pay for acquiring portions of the T. & Y. R. Ry. Metropolitan Division within the city. The matter came up for discussion before the board Jan. 11, when R. C. Harris, City Works Commissioner, stated that the parties had come so close together on the amount to be paid for the physical assets, that the matter could be settled in an hour, but could not agree on the amount for the intangible assets. The board fixed Jan. 28 for the hearing, when it would also be determined whether York County had any right to enter the proceedings.

The Quebec Legislature has approved the Shawinigan Water & Power Co.'s application for an increase of capital from \$15,000,000 to \$20,000,000. The company owns the Shawinigan Terminal Ry. Co. and the Three Rivers Traction Co.



## The Nova Scotia Tramways & Power Co. and the Halifax Explosion.

It was impossible to obtain in time for our last issue any reliable information as to the damage done to the Nova Scotia Tramways and Power Co.'s property by the explosion of the munitions steamship Mont Blanc in Halifax harbor on Dec. 6. We are now indebted to the company's Managing Director, H. R. Mallison, for the following facts:

In view of all the circumstances, the company escaped very lightly. One of its transportation inspectors, T. Burgess, who was in the vicinity of the explosion, was killed instantly, and the force of the explosion practically tearing the clothes off his body. By the time the body was found, ghouls had been at work and had robbed him of his fortnight's pay and his watch and chain. One of the company's cars happened to be almost opposite the s.s. Mont Blanc at the time of the explosion. The motorman in charge was killed immediately, the conductor by some miraculous means escaped with his life, but was very severely injured, and has not yet been able to get about. So far as can be learned, none of the passengers in this car were killed; though its top structure was completely demolished, and all that remained of the truck and equipment was a bunch of twisted scrap. Other cars that were on the line in the vicinity of the explosion were very badly damaged and twisted, and at least three cars will have to be completely rebuilt, as far as the bodies are concerned. All of the company's rolling stock sustained damage such as broken glass, broken window sashes, broken doors, twisted joints in the wood work, and other damage caused by concussion. A number of rheostats were cracked, and some of the truck frames were badly shaken up.

A number of conductors and motormen who were on their cars at the time, were injured more or less by flying glass, but none of them seriously. So far as can be learned, only three platform men were killed while on duty, but altogether nine employees have been lost as a result of the disaster.

The overhead line in the destroyed area was completely demolished, this including the overhead trolley work, as well as the light and power distribution circuits, arc lamps, transformers, etc. Over 200 electric meters were completely destroyed as a result of the explosion and ensuing fire, and in addition, the company has had to remove about 250 meters, some of them in a more or less damaged condition, from houses which have been deserted since the accident.

The damage to the company's power house was, fortunately, not of a serious character. All the doors and windows were blown in and completely shattered, and some of the joints in the steam piping were sprung, but the generating machinery and the boilers were not in any way effected, and consequently, the light and power service was resumed as soon as the destroyed section of the city was cut free from the distributing system.

The repair shop, car barns and offices all sustained damage to doors and windows; the steel sashes in the machine shop and storeroom, which were glazed with wired glass, were blown out of the wall, sash and all.

The sprinkling system in the buildings was also damaged and discharged as a result of the concussion, but the water was turned off before any great amount

of damage occurred from this source.

The tracks and gas mains in the streets did not suffer damage to any great extent. Some of the crown plates on the gas holder were sheared off, and about 200,000 ft. of gas were lost. Fortunately, it was possible to repair this damage, and after three days and nights of hard work, to resume a gas supply to the city; the mains entering the destroyed area having been cut off in the meantime.

When the accident occurred, a great number of the company's employees who lived in the destroyed area, immediately left their posts and hurried to aid their families, and as a result only about 40% of the employees were available for service. The morning following the disaster, snow began to fall, and a very severe blizzard raged during all the day and night. Owing to the damage to rolling stock, and the fact that many employees were not available for their regular duties, the car service was completely tied up. All efforts were directed toward improving this condition, but it was not until Sunday, Dec. 9, that it was possible to resume any semblance of car service. Very valuable assistance was received on the Saturday night by a company of soldiers garrisoned in the city, and also by 150 seamen off a United States warship, which came into port the previous day. Owing to the scarcity of employees, it was found extremely difficult to keep the snow fighting equipment in operating condition and this, too, very seriously hampered the company resuming service.

On Monday, Dec. 10, a second blizzard completely tied up the car service for the day. A partial service was resumed again on Dec. 11, and from that time on the service has been increased until the customary schedule is now being operated.

The destruction of a large area of the city has forced the residents into other districts, and as a consequence the trend of traffic has very markedly changed, necessitating a reconsideration of the service formerly given.

Owing to the number of men required for reconstruction work, the company found it very difficult to get its full complement of men back into the service. A number of employees whose old homes were in the surrounding country, returned there when they found that their city houses had been irreparably damaged or burned. As a result, the management took into consideration the advisability of employing women conductors, and has finally adopted this principle. On Dec. 31 eight women conductors were in charge of cars, and a number of others were training. The experience, so far, is that the services of women conductors are practically as efficient as those of men, and it is the intention to utilize women's services for this purpose to the fullest extent possible.

**Oshawa Railway Service.**—The town of Oshawa, Ont., applied to the Board of Railway Commissioners some time since for an order directing the Oshawa Ry. to furnish a passenger service to and from various portions of the town similar to what it has been giving to the G.T.R. Co. The application was heard at Oshawa, Dec. 11, the town, the Oshawa Ry. and the C.P.R. being represented, and upon reading submissions filed and the report of one of the board's inspectors, it was ordered that the application be refused.

## The Street Railway Fare Question in Edmonton.

At the invitation of the Edmonton, Alta., City Board of Control, a conference of public organizations was held Jan. 14, to discuss various questions, particularly financial, connected with the Edmonton Radial Ry. The following organizations were represented: Board of Trade, Trades and Labor Council, Labor Representation League, Property Owners' Association, Property Owners' Protective Association, Delton Home Rule Association, Local Council of Women, Consumers' League, Teachers' Association, Ministerial Association, 142nd St. League, Bonnie Doon Ratepayers' Association.

After a lengthened general discussion, Mayor Evans said three things had been suggested to help to improve matters, one was to cut out all transfers, another was to have tickets at 4 for 25c, with workmen's tickets 6 for 25c, and children's tickets at 10 for 25c. There might also be a special night car rate to come into operation after a certain time at night, and, thirdly, there was the zone system. This, to his mind, was the most rational one. It was decided not to take a vote on any of the three suggestions until a definite plan for working on the zone system was prepared.

During the discussion Commissioner Harrison made a statement showing that for the first 11 months of 1917 the railway had a deficit of \$155,615, which was larger than for the 12 months of the previous year. This was attributed to fewer passengers, increased cost of material and higher wages paid. It was added that therewas a deficit of 1 7/10c on each passenger carried. The power charges for 1917 were less by \$64,000 than they were in 1912. The strike of July, 1917, made a difference of \$600 in the final showing.

D. Donaldson, who is spoken of in a local paper as "representing the Society of Canadian Engineers," said that the success of a street railway depended upon density of population, and the Edmonton Radial Ry. could be compared to James Ramsey's store if it was taken up and planted down at Camrose. They had to get out of their minds all idea of making the street railway pay.

## Electric Railway Traffic in Regina.

A statement prepared by Regina Municipal Ry. officials shows that the traffic is about 65% greater in winter than in summer. Two days were selected for the test, viz., Monday, Sept. 10, and Monday, Dec. 10, both of which happened to be fine days, and typical of the season. The cash fares received on Sept. 10 were \$474.82, and on Dec. 10, \$795.56. The traffic figures for the two days on the various lines were:

	Sept. 10	Dec. 10	Per cent. increase
Red . . . . .	3,179	5,867	84.6
White . . . . .	2,109	4,013	90.3
Blue . . . . .	3,016	5,196	72.3
Green-red . . . . .	3,038	4,012	32.6
	11,342	19,088	68.3
Specials . . . . .	1,574	2,212	40.5
	12,916	21,300	65.0

**Toronto Railway Purchase.**—At the municipal elections on Jan. 1, Toronto ratepayers were given a ballot with the question, "Are you in favor of the city taking over the Toronto Street Railway in 1921?" They answered it by 39,979 affirmative votes and 3,759 against.



## The Montreal Tramways Co's Snow Clearing Work.

The following extracts from a paper on snow removal in Montreal, read by Paul E. Mercier, B.A.Sc., Chief Engineer and City Surveyor for Montreal, before the last Good Roads Congress in Montreal, are of interest at this season.

The City of Montreal has a total area of 26,226 acres. The length of the streets aggregate 485 miles, 104 miles of which have electric railway tracks. The snow fall varies, but has averaged, for the last 41 years, 119.3 in. The snow removal is done entirely by the city, by day work. The cost of removal of snow from the sidewalks, is paid by the proprietors at the rate of 5c per running foot. The cost of the snow removal from streets with electric railway tracks is paid half by the Montreal Tramways Co. and half by the city. The cost of the snow removal in any other streets is paid by the city. As the country surrounding Montreal has winter roads, the city does not entirely remove the snow from its streets, but keeps, during the winter, a thickness of 6 to 12 in. of snow.

The Montreal Tramways Co. has a wonderful organization to keep its tracks clear during a snow storm. Regular routes are mapped out for the sweepers, before the beginning of the winter. Routes that can be handled to best advantage from it are given to each depot. These routes are arranged so that each can be covered by its sweeper in from 45 minutes to one hour and also arranged so as to have one central conveying point for three or four sweepers. In case of need, it is, therefore, easy to direct a sweeper from another route, when it reaches this spot. In each car, a blue print is posted, giving the detailed route of that particular car. The necessary men are appointed to each car at the beginning of the winter, and they are kept during the entire winter. The Superintendent meets all of these men before the winter opens and discusses with them proposed improvements on actual conditions. Their organization is so well thought of, that, as Arthur Gaboury, the Montreal Tramway Co.'s Superintendent, said: "Each man knows where to go and what he has to do, and it seems that he simply goes and does it."

The Montreal Tramways Co. has 39 sweepers and 12 levellers or wing cars. Most of the sweepers are of the 2-broom type, having on the right side a large iron wing to clear the snow from the outside of the track and on the left side a smaller wing to clear the devil strip. Following are details of the equipment:—

Single truck sweeper: Two 50 h.p. motors, G. E. 80, and one K10 controller at each end, one K10 controller for broom, length 28 ft., width 8 ft., height 11 ft., weight 31,000 lbs., wing 8 x 22 ft. Used to brush off the snow from the track and push it towards the sidewalk.

Double truck sweeper: Two 50 h.p. motors, G. E. 80, and two K35 controllers for motors, two 101 motors and one K10 controller for broom, length 39½ ft., width 7 ft. 6 in., height 11 ft., weight 44,500 lbs., wing 11 ft. Does the same work as the first one.

Leveller or wing car: Flat freight car fitted up with iron shaped wing 12 ft. long and 2 ft. high. The wing is pushed out by reinforced wooden bar, operated by chains and drum; four 50 h.p. motors, G. E. 80, weight of car 43,400 lb. Used to push the snow towards the sidewalk.

Single truck leveller or wing car: Made

from old box car, length 26 ft. 7 in., height 11 ft. 1 in., width 8½ ft., two G. E. 80 motors, wing 16 ft. long, weighted down by double floor filled in with rails and cement, total weight 30,640 lb.

At the beginning of the storm, all hands are called. The Tramway Co.'s sweepers are sent out on the route; the city plows are sent out to remove the snow from the roadways and from the sidewalks. The heavier the snow storm, the shorter the routes are made, so that each plow can be back at the starting point before the snow accumulates. Snow shovellers are sent out to keep the street corners clear of snow. Whenever a section foreman feels that his section will be snowbound, he calls the Division by telephone for more help. In case of emergency, section or division lines are wiped out and everybody works with one ambition: beat all the others in results. Working hours are the usual hours in a ten hour day; but, if necessary, the work lasts as long as the snow.

The cost of removing snow from streets is \$2,500 a mile.

### Mainly About Electric Railway People.

F. J. Colbeck was re-elected a member of the Brantford Railway Commission at the municipal elections Jan. 7.

W. R. McRae, Master Mechanic, Toronto Ry., Toronto, has been elected a member of the American Institute of Electrical Engineers.

A. E. Wideman and A. G. Alexander were re-elected members of the Port Arthur, Ont., Public Utilities Commission at the municipal elections Jan. 7.

Jos. J. Gibbons, Business Manager, Toronto Street Railwaymen's Union, has been re-elected an alderman of the City of Toronto. He was a conductor for 17 years.

W. D. Robbins, who has been Secretary, Toronto Street Railwaymen's Union, for ten years, and an alderman since 1912, has been elected a member of the Toronto City Board of Control.

E. L. Milliken, heretofore General Manager, Cape Breton Electric Co., who was appointed some months since as General Manager, Houghton County Traction Co., has left Sydney, N.S., to take over his new duties at Houghton, Mich.

His Honor Frank Stillman Barnard, Lieutenant Governor of British Columbia, who has been made a Knight Commander of St. Michael and St. George, is the eldest son of the late F. J. Barnard, M.P., who founded the British Columbia Express Co. He has for a number of years been interested in the British Columbia Electric Ry., latterly as Advisor to Directors.

W. N. Warburton, General Manager, London & Lake Erie Ry. & Transportation Co., was presented by the company's employees, on Christmas eve, with a gold mounted pipe in case, a leather upholstered arm chair and a club bag. An accompanying letter expressed the employees' appreciation of his "uniform kindness and thoughtfulness of their welfare," and spoke of him as a "friend rather than as a master."

W. J. Lynch, General Manager, Quebec Ry., Light, Heat & Power Co., and M.

W. Kirkwood, General Manager, Galt, Preston & Hespeler St. Ry., have been elected members of the Canadian Electric Railway Association's executive committee, to fill vacancies caused by the death of H. G. Matthews, formerly General Manager, Quebec Ry., Light, Heat and Power Co., and by the removal of E. L. Milliken, heretofore Manager, Cape Breton Electric Co. to Houghton, Mich.

M. F. Werth, who has been appointed Superintendent of Power, Detroit United Ry., Detroit, Mich., was made Assistant Superintendent of Power in June, 1916, and has been acting Superintendent since the promotion of E. H. Burdick to be Assistant General Manager in July, 1916. He is a native of Richmond, Va., graduated from Virginia Military Institute, electrical engineering course, and began his career as a railway man with the Mahoning & Shenango Ry. & Light Company, of Youngstown, Ohio. Later he was with the British Columbia Electric Ry.

George A. Mills, whose appointment as Electrical Engineer, Winnipeg Electric Ry., Winnipeg, was announced in our last issue, was born at Indianapolis, Ind., July 5, 1885, and was educated at the Iowa State College, Ames, Ia., graduating in electrical engineering in 1909; 1909 to 1910, apprentice, Allis-Chalmers Mfg. Co., Cincinnati, Ohio; 1910 to 1911, instructor in electrical engineer, University of Pennsylvania, Philadelphia; 1911 to 1917, Electrical Engineer, Waterloo, Cedar Falls & Northern Ry., Waterloo, Ia., when he had charge of electrical design and construction of 60 miles of 1,300 volt, d.c., high speed interurban and freight line, also the enlargement of power station and operation of electrical generation, conversion, distribution and engineering, and of rolling stock.

### Report on Toronto Civic Railway.

The Toronto City Council's works committee reported on the civic railway towards the end of December as follows: Traffic increased steadily during 1917. Comparing the first 10 months of 1917 with the first 10 months of 1916, the Gerrard St. route increased 19.22%; Danforth Ave. route 13.88%, St. Clair Division 31.14%; Bloor Division 10.99%, and the entire system 21.68%. The Lansdowne Ave. route of the St. Clair Division which was opened for traffic on Jan. 16, 1917, is 0.615 mile long. A single track extension to the Bloor Division, from Quebec Ave. to Runnymede Road, 0.493 mile long, was opened for traffic on Nov. 12, 1917. We are now carrying about 49,000 revenue passengers a day.

One single-truck car was added to the equipment of the Gerrard route, and all rolling stock is working to its full capacity. A 9 car capacity addition to St. Clair Ave. barn was occupied in February.

The wages of trainmen and shedmen were increased from 30c to 33 1/3c an hour on Jan. 1, 1917, and on June 16 they were changed to the scale adopted by the Toronto Ry., having a minimum of 30c and a maximum of 37c an hour.

**Electric Railway Assessment in Toronto.**—Assessments for this year, on electric railway and allied property in Toronto, are as follows: Toronto Ry., \$4,952,780; Toronto and York Radial Ry., \$410,181; Toronto Suburban Ry., \$79,355; Toronto, Niagara and Western Ry., (not operating), \$4,500; Toronto Power Co., \$1,052,276; Toronto Electric Light Co., \$3,493,221.



# Marine Department

## Specifications and Plans of Marine Engines for Standard Wooden Steamships for British Government.

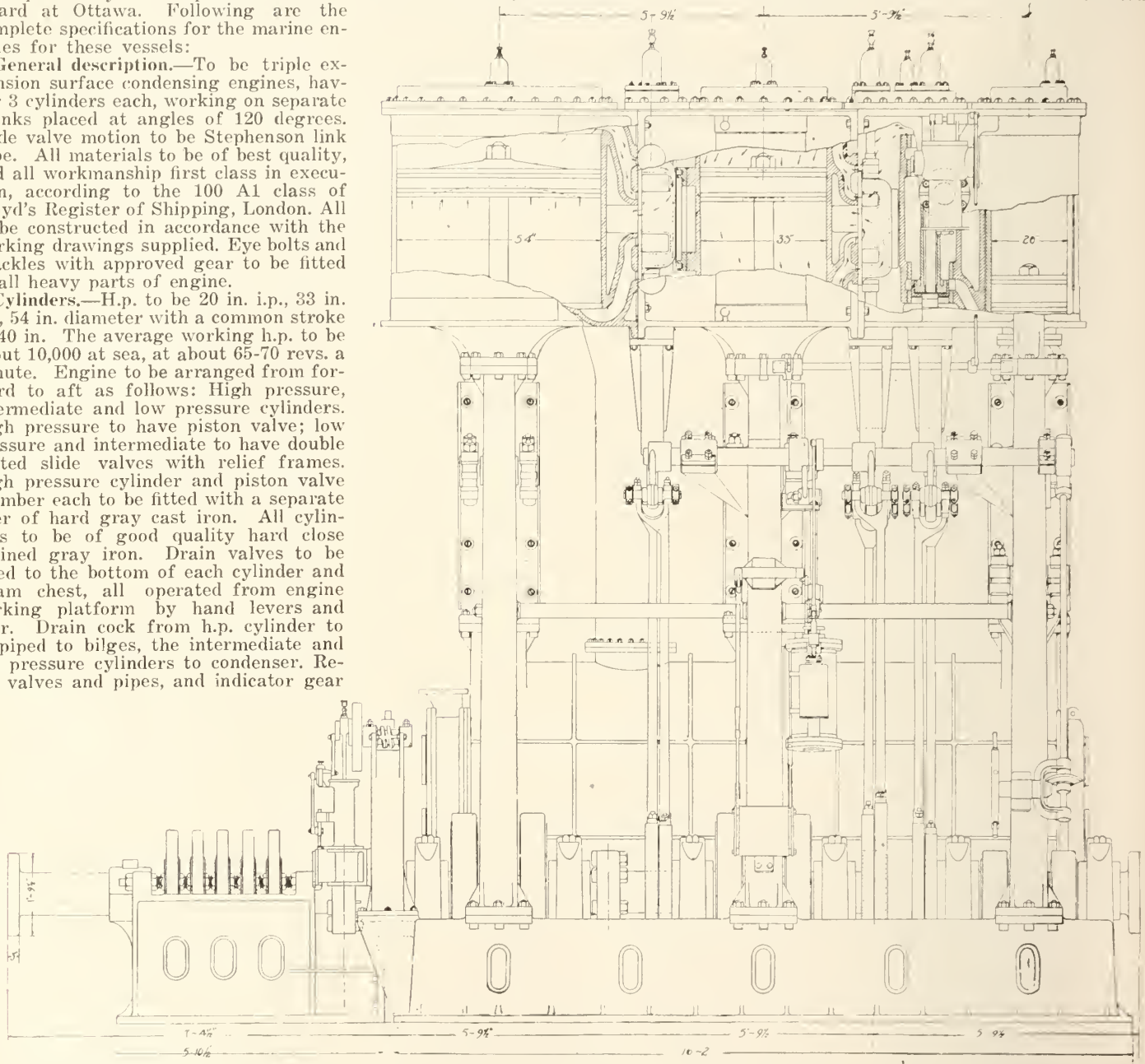
Canadian Railway and Marine World for January contained a very full summary of the specifications for the hulls of wooden steamships being built in Canada for the British Government, under orders placed by the Imperial Munitions Board at Ottawa. Following are the complete specifications for the marine engines for these vessels:

**General description.**—To be triple expansion surface condensing engines, having 3 cylinders each, working on separate cranks placed at angles of 120 degrees. Slide valve motion to be Stephenson link type. All materials to be of best quality, and all workmanship first class in execution, according to the 100 A1 class of Lloyd's Register of Shipping, London. All to be constructed in accordance with the working drawings supplied. Eye bolts and shackles with approved gear to be fitted to all heavy parts of engine.

**Cylinders.**—H.p. to be 20 in. i.p., 33 in. l.p., 54 in. diameter with a common stroke of 40 in. The average working h.p. to be about 10,000 at sea, at about 65-70 revs. a minute. Engine to be arranged from forward to aft as follows: High pressure, intermediate and low pressure cylinders. High pressure to have piston valve; low pressure and intermediate to have double ported slide valves with relief frames. High pressure cylinder and piston valve chamber each to be fitted with a separate liner of hard gray cast iron. All cylinders to be of good quality hard close grained gray iron. Drain valves to be fitted to the bottom of each cylinder and steam chest, all operated from engine working platform by hand levers and gear. Drain cock from h.p. cylinder to be piped to bilges, the intermediate and low pressure cylinders to condenser. Relief valves and pipes, and indicator gear

springs in accordance with drawings. To be of open hearth steel, connected to piston by taper and nuts, securely locked. Cross heads of steel to be connected to piston rods, in the same manner, and fitted with adjustable cast iron shoes.

with rings as shown on drawings. The intermediate and low pressure slide valves to be double ported and to be made of hard cast iron. Valve rods to be of steel, guided at top, outside stuffing box at bottom. Double steel nuts to be fitted



Marine Engine for Standard Wooden Steamships, Elevation of Starboard Side.

to be provided on all cylinders. Cylinders to be lagged on sides with insulation of magnesia, and cleated with steel plates, fastened with bands and screws. Cylinder covers to be sound castings, strongly ribbed, and to have corrugated cast iron plates on top. Eye bolts for lifting and starting screws to be fitted to each cylinder and one strong beam with roller and screw for lifting cylinder covers, etc., to be fitted in engine room.

**Pistons** to be hollow box castings, well ribbed and furnished with rings and

U. S. or other approved metallic packing to be fitted to h.p. and i.p. rods.

**Connecting rods** to be of open hearth steel to Lloyd's requirements, length between centres being 8½ ft. The top ends to be forked and fitted with adjustable brass bearings; lower ends to have cast steel bearings lined with white metal of approved composition and secured by w.i. or steel bolts and nuts with locking rings, lubricating pipe to be fitted to each rod.

**Slide Valves.**—H.p. to be piston valve,

at top end. Washer to be fitted at bottom of slide valve. H.p. and i.p. valve spindles to be fitted with U.S. metallic packing or other approved make. Slide valve motion to be of Stephenson link type, with double eccentric. All working parts to be made with adjustable bearings. Eccentric sheaves to be cast iron, with good wearing surface, and eccentric straps of cast iron bushed with white metal; to have liners for adjustment. Eccentric rods to be of forged steel.



Reversing engine to be of direct steam driven type, with floating valve motion exhausting to condenser, and to be operated from the engine working platform. Hand-reversing gear to be provided. Reversing shaft to have adjustable bearings. Reversing arms to have adjustable slides for linking up all valve gears.

Columns to be of cast iron hollow section. Guides are to be single, the guide surface to be of hard, close grained iron with water cooling for ahead motion.

The engine bed plate to be of cast iron, with 6 adjustable bearings of cast steel, white metal, bushed. Bottom halves to

Pump levers to be of steel plate, driven from i.p. cross head to drive the air, circulating, feed and bilge pumps through links with adjustable brasses. Pump cross head to be fitted with guide bracket and adjustable bearings. Bearings in the pump motion to be of brass. Bearing for pump lever on column to be of white metal.

Air pump to be of single acting type Edwards system, fitted with brass bushing. Valves to be of brass as indicated on plan. Pump rod to be of Muntz metal. Air pump to have drain cock and shifting valve.

so that each pump can be inspected while the other is working.

Bilge pumps, two in number, single acting pumps of cast iron; bushing, plungers, valves and seats to be of brass. Each pump fitted with air vessel of cast iron. To be fitted with safety valves. Both pumps arranged so that they can deliver overboard, and one to draw from sea and discharge to deck and sanitary tank.

Main stop and throttle valve of cast iron, bolted to high pressure cylinder. Rods of steel to be operated conveniently from engine working platform as shown in plan.

Crank shaft to be built up section in 3 interchangeable parts 11½ in. dia., with solid forged couplings. Crank webs to be of cast or wrought steel. Crank shaft may be either iron or steel to pass Lloyd's requirements.

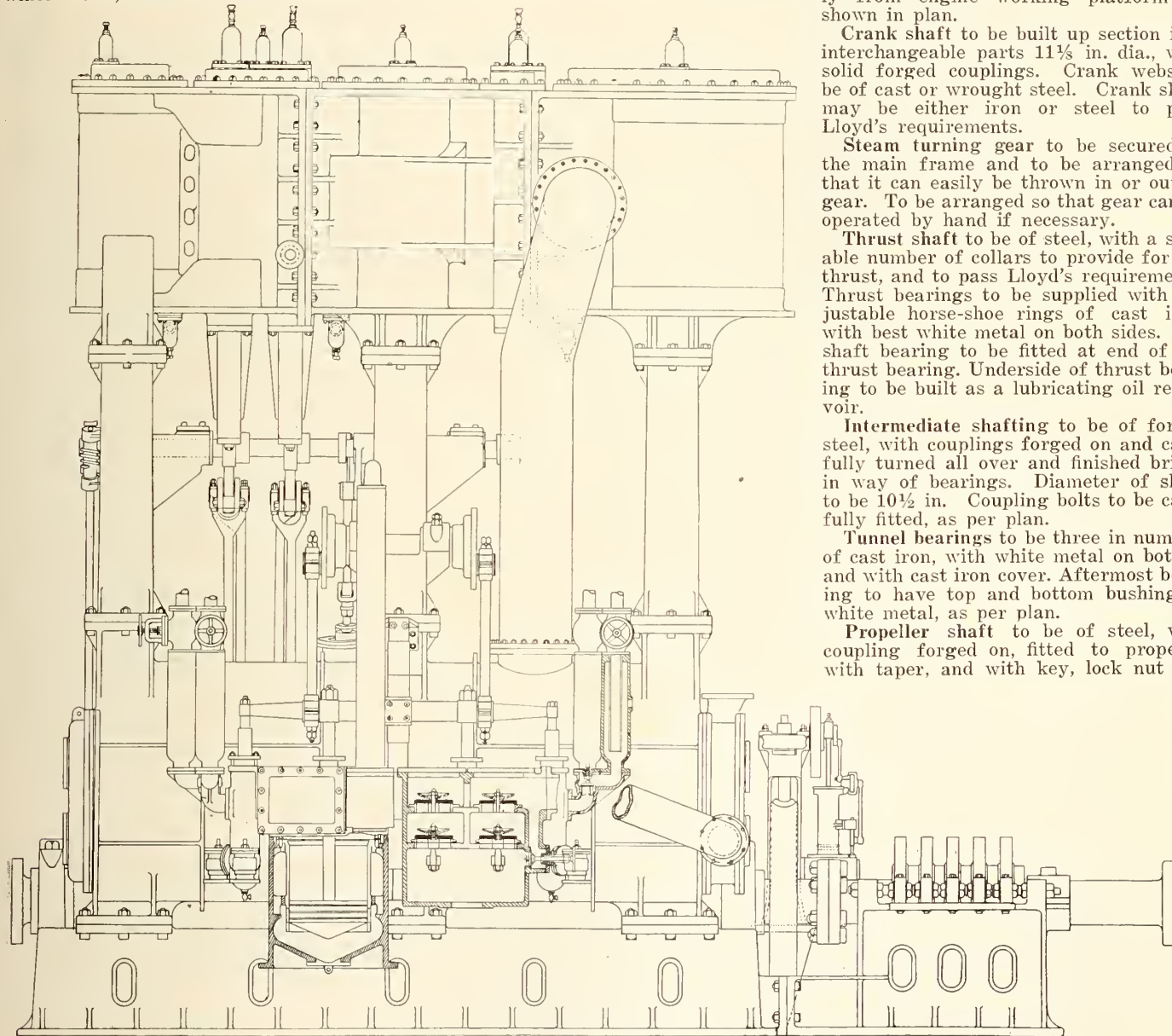
Steam turning gear to be secured to the main frame and to be arranged so that it can easily be thrown in or out of gear. To be arranged so that gear can be operated by hand if necessary.

Thrust shaft to be of steel, with a suitable number of collars to provide for the thrust, and to pass Lloyd's requirements. Thrust bearings to be supplied with adjustable horse-shoe rings of cast iron, with best white metal on both sides. One shaft bearing to be fitted at end of the thrust bearing. Underside of thrust bearing to be built as a lubricating oil reservoir.

Intermediate shafting to be of forged steel, with couplings forged on and carefully turned all over and finished bright in way of bearings. Diameter of shaft to be 10½ in. Coupling bolts to be carefully fitted, as per plan.

Tunnel bearings to be three in number, of cast iron, with white metal on bottom and with cast iron cover. Aftermost bearing to have top and bottom bushing of white metal, as per plan.

Propeller shaft to be of steel, with coupling forged on, fitted to propeller with taper, and with key, lock nut and



Marine Engine for Standard Wooden Steamships, Elevation of Port Side.

be of semi-circular section, so as to be removable without lifting shafting. All bearings to have large lubricating cups, and nuts and other fittings which will down bolts and foundation bolts to be supplied as per detailed drawings.

Condenser to be of cast iron, having rolled brass tube plate, ¾ in. thick, with 613 ¾ in. outside diameter brass tubes, tested inside and out, to provide 1,560 sq. ft. of cooling surface. Tubes to be packed in brass ferrules adapted to hold tubes in direction of flooding. Manhole and clearing doors to be provided. All bolts and nuts and other fittings which will come in contact with sea water to be brass.

Circulating pump to be of double acting type; to have all bushings, pistons, valve guards and seats of brass. Valves to be of rubber. Plunger rods to be of Muntz metal.

Feed pumps to be two in number, driven from pump cross head, single acting of cast iron. Bushing, valve, and boilers with water when operating full power and to be able to work independently of one another. Pumps and housing of cast iron. Bushing, valves, and seats, of brass. Plungers of steel with brass sleeves. Each pump to have an air vessel of cast iron. Safety valve, air valve, and all the necessary valves and cocks on suction and pressure pipes,

ping, to Lloyd's requirements. Diameter of shaft 12 in. A continuous brass liner to be fitted on tail shaft, running in the lignum vitae bearing in stern tube, all as per plan.

Propeller to be of cast iron, a right hand screw of solid section with 4 blades 14½ ft. diameter and 15¼ in. pitch. To be taper bored to fit propeller shaft, with through way, and to be secured by nut, having left hand thread. A spare propeller to be supplied. Care to be taken in moulding propeller to obtain smooth surface true to pitch.

Stern tube to be of cast iron, fitted with forged steel nut on the aft side. To have brass bushing in after end, which







1 gal.; 4 assorted tin oil cans; 2 filling cans for oil (2½ gall.); 2 oil funnels, 1 pint; quantity of assorted bolts and nuts and sizes bar iron; 1 set eye bolts ¾, ½, ⅜, ¼, 1, 1½, 1¼ in.; 2 eye bolts ⅝ in. long link for bottom ends; 2 brass oil waste pans; 1 brass cock for oil barrels; 1 large funnel; 3 water buckets; 1 small grindstone, fitted in iron trough; 1 3-ton chain block; 1 5 parts tackle with iron sheave; 4 hand lamps of tin; 4 lamps or lanterns; 1 engine indicator; 50 ft. of 1½ in. hose, with coupling and nozzle; 4 bulkhead lamps of brass, fitted in engine room.

**Spare gear.**—According to requirements of class, but with the following additions: 1 set of air pump valves; 1 set of circulating pump valves; 1 set of feed pump valves; 1 spare propeller; 25 condenser tubes; 50 screwed glands for tubes.

**Lloyd's spare gear.**—Connecting rod or piston rod top-end bolts and nuts; 2 connecting rods or bottom-end bolts and nuts; 2 main bearing bolts; 1 set of coupling bolts; 1 set of feed and bilge pump valves; 1 set of piston springs; quantity of assorted bolts and nuts; iron of various sizes.

## The Dominion Government's Shipbuilding Programme.

The Minister of Marine, the Hon. C. C. Ballantyne, gave out the following statement, on Jan. 3: "It will be recalled that in a statement of policy issued by the Union Government shortly before the general election, it was set forth in effect that the establishment of the shipbuilding industry in Canada on a sound and permanent basis would receive early consideration. In the meantime the question has engaged the government's attention, with the result that a decision has been reached to utilize the full capacity of existing shipyards in Canada in the production of modern steel cargo steamers of the most approved types for the use of the government and for registry in Canada. The productive capacity of these yards, which at present are engaged in the construction of ships for the British Government, local interests and for foreign account—the latter almost exclusively for Norwegian registry—may be roughly estimated at from 275,000 to 300,000 tons annually. During the continuance of the war and for some time thereafter the construction of steel ships in Canadian yards for foreign registry will not be permitted. This policy is in line with that adopted by both Great Britain and the United States.

"The Naval Constructor's branch of the Department of Marine and Fisheries is busily engaged in the development of the details of the contemplated programme. The work has not sufficiently advanced to enable a definite statement to be made, but the construction of three different types of ships is under consideration. One type will comprise vessels of approximately 3,000 tons. These may be built in shipyards on the Great Lakes. Another type will comprise ships of from 5,000 to 7,000 tons, while yet another will be a type with a dead weight capacity of from 8,000 to 10,000 tons.

"The production of tonnage has become one of the most important that can occupy the attention of serious men and of governments. As is well known, shipping has sustained enormous losses since the commencement of the war. As the result of its activity in maintaining commerce on the seas and providing for the requirements of the allied armies, these losses have borne most heavily on British shipping. The entry of the United States into the war—the most important event of the past year—and that country's resolve to place a large army in the field have made and continue to make heavy demands on shipping. The losses continue though in much less degree than in the months immediately succeeding the inauguration of the unrestricted campaign by the enemy. Additional tonnage has therefore become equally

important as the production of food and munitions and the supplying of recruits for the army.

"The Government in the consideration of this question recognizes that one of the chief difficulties in the way of successfully carrying on a construction programme arises from the fact that steel plates and shapes are not now manufactured in Canada. The overwhelming advantage to Canadian industry as well as to the general cause, of making Canada self contained in this regard is obvious. To overcome this difficulty and to meet the situation in an efficient manner, negotiations are now under way with responsible persons with the object of establishing at some suitable place or places in Canada, mills for the rolling of ships' plates and shapes to provide the maximum requirements. These negotiations are progressing satisfactorily and it is expected that a more definite announcement in this regard will not be long delayed."

On Jan. 4 the following additional information was given out: The ships will be built and owned by the government. They will be operated partly, at least, and perhaps wholly, by the Government, although, in special cases, they may be chartered to responsible parties. After the war they will be owned and operated by the government in co-operation with government owned railways. In a word, the policy inaugurated is a policy of government ownership of ocean transports.

The government's contemplated programme will involve an expenditure of from \$50,000,000 to \$60,000,000. C. F. N. Duguid, Naval Architect of the Marine Department, who has a wide experience in yards in Belfast and on the Clyde, will be the technical officer in charge of the work.

Ships now under construction for the British Government will be completed. Contracts for these vessels were let by the Imperial Munitions Board, and most of them will be completed early in the summer. After that Canada will take charge of all construction.

No new shipyards will be constructed for the present, but the existing yards will be utilized to their fullest capacity. There will be an equitable distribution of labor between the various plants so as to ensure the maximum of efficiency and speed in output of ships. Steel rolling plants—heretofore exclusively confined to the United States—will probably be erected at Sydney and New Glasgow, N.S., Hamilton and Sault Ste. Marie, Ont.

The New York & Cuba Mail Steamship Co.'s s.s. Mantanzas, which ran on the ledges recently, was released Dec. 29, and towed stern first into Halifax harbor.

## Canadian Vessel Statistics for 1916.

The total number of vessels on the Dominion register at Dec. 31, 1916, was 8,660, measuring 942,598 net tons, a decrease of 97 vessels, and an increase of 13,286 tons, compared with 1915. During 1916, 432 vessels were removed from the register, of which 260 were broken up, reported out of existence, condemned, dismantled or abandoned; 26 were wrecked; 22 were sold to U. S. Government; 1 to French Government; 1 to Russian Government; 20 stranded; 7 lost; 7 abandoned at sea; 2 lost by collision; 14 foundered; 18 burnt; 25 transferred to Newfoundland; 17 to Barbados; 5 to Great Britain; 1 to Australia; 2 registry no longer required; 3 sunk by mines and 1 by torpedo. It was estimated that 42,566 persons were employed on vessels registered in the Dominion during 1916.

Vessels built during the year numbered 244, aggregating 28,303 tons, compared with 246 vessels and 18,832 tons in 1915. The number and tonnage of the new construction, according to provinces, is as follows:—

	Number.	Tons.
Quebec . . . . .	51	8,643
Nova Scotia . . . . .	65	7,661
Ontario . . . . .	26	5,507
British Columbia . . . . .	65	4,487
Manitoba . . . . .	15	1,573
New Brunswick . . . . .	22	332
Total . . . . .	244	28,303

The total vessels on the register is divided according to provinces as follows:

	Sailing and Steamships.	Steamships.	Gross tonnage of Steamships.	Net tonnage of sailing and Steamships.
Ontario . . . . .	2,117	1,507	353,439	327,676
Quebec . . . . .	1,452	573	225,959	273,769
British Columbia . . . . .	1,687	1,255	128,976	145,525
Nova Scotia . . . . .	2,064	484	46,627	123,052
New Brunswick . . . . .	1,074	264	24,682	50,147
Prince Edward Is. . . . .	155	27	7,557	10,652
Manitoba . . . . .	95	78	8,567	8,953
Yukon . . . . .	11	10	2,716	2,295
Saskatchewan . . . . .	5	4	660	529
Totals . . . . .	8,660	4,202	799,183	942,598

Ports of registry are distributed as follows:—Ontario 38, Nova Scotia 21, New Brunswick 7, Quebec 6, British Columbia 4, Prince Edward Island, Manitoba, Saskatchewan and Yukon 1 each; no provision being made for registering vessels in Alberta.

The Dauphin Milling and Creamery Co. has been incorporated under the Manitoba Companies Act with power among other things to own and operate freight and passenger vessels, to carry on the business of a common carrier, and to act as forwarder, wharfinger, and warehouseman. The authorized capital is \$125,000; the office is at Dauphin, Man., and it has as provisional directors: S. Code, F. Fostick, D. C. Richardson, R. Fegan, J. F. Code, F. E. Simpson, Dauphin, Man.

Colborne Trading & Transportation Co. Ltd. has been incorporated under the Dominion Companies Act, with \$2,000,000 authorized capital and office at Montreal, to carry on a general merchandise, import and transportation business, and in connection therewith to own and operate steam and other vessels, wharves, docks, warehouses and other transportation facilities.

Pilots and Military Service.—Judge McCorkill, at Quebec, Jan. 23, decided that a pilot on the St. Lawrence River, was more useful to the Empire by remaining at the disposal of ships than by going into military service.



## Steam and Sailing Ships Under Construction Throughout Canada.

Following are particulars of shipbuilding which was in progress throughout Canada, at Oct. 31, 1917, in addition to other vessels reported previously. The figures given in each case are the gross tonnage:

### Steamships, Atlantic Coast.

Canadian Vickers, Ltd., Montreal: 2 cargo strs., 9,400 tons, steel; 1 dredge, 2,364 tons, steel; 12 trawlers, 3,050 tons, steel; 23 drifters, 3,350 tons, wood.

Davie Shipbuilding Co., Levis, Que.: 1 car ferry, 5,000 tons, steel.

Grant & Horne, St. John, N.B., 1 cargo str., 2,800 tons, wood; Nova Scotia Steel & Coal Co., New Glasgow: 2 cargo strs., 3,000 tons, steel.

Sincennes-McNaughton Lines, Sorel, Que.: 1 tug, 420 tons, wood.

Southern Salvage Co., Liverpool, N.S.: 1 cargo str., 2,800 tons, wood.

Total, Atlantic coast, 44 steamships; 32,280 gross tons.

### Steamships, Great Lakes.

Collingwood Shipbuilding Co., 2 cargo strs., 4,800 tons, steel.

Georgian Bay Shipbuilding & Wrecking Co., Midland, Ont.: 1 tug, 50 tons, wood.

Midland Dry Dock Co., Midland, Ont.: 3 cargo strs., 6,000 tons, steel.

Polson Iron Works, Toronto: 8 cargo strs., 18,800 tons, steel; 10 trawlers, 2,640 tons, steel.

Port Arthur Shipbuilding Co., Port Arthur, Ont.: 7 cargo strs., 14,737 tons, steel; 6 trawlers, 1,530 tons, steel.

Thor Iron Works, Toronto: 2 cargo strs., 4,874 tons, steel; 2 trawlers, 540 tons, steel.

Toronto Shipbuilding Co., Toronto: 2 cargo strs., 6,000 tons, wood.

Welland Shipbuilding Co., Welland, Ont., 2 cargo strs., 4,700 tons, steel.

Total, Great Lakes, 40 steamships, 64,621 gross tons.

### Steamships, Pacific Coast.

British Yukon Navigation Co., Vancouver, B.C.: 1 pass. and frt. river str., 1,000 tons, wood; 1 motor boat, 100 tons, wood.

Cameron-Genoa Mills Limited, Victoria, B.C.: 2 aux. schrs., 3,000 tons, wood.

J. Coughlan & Sons, Vancouver, B.C.: 3 cargo strs., 17,190 tons, steel.

Pacific Construction Co., Port Coquitlam, B.C.: 2 cargo strs., 5,600 tons, wood.

Wallace Shipyards, Ltd., N. Vancouver, B.C.: 4 cargo strs., 17,500 tons, steel; 2 frt. and pass. strs., 11,600 tons, steel; 2 aux. schrs., 3,000 tons, wood.

Yarrows, Limited, Esquimalt, B.C.: 1 stern wheeler, 400 tons, wood.

Total, Pacific Coast, 18 steamships, 58,790 gross tons.

	Steamships.	Gross tons.
Atlantic coast .....	44	32,280
Great Lakes .....	45	64,621
Pacific coast .....	18	58,790
	107	155,691

### Wooden Sailing Schooners, Atlantic Coast.

J. A. Balcom & Co., Margaretsville, N.S.: 1 scr., 409 tons.

T. K. Bentley, Advocate Harbor, N.S.: 1 scr., 449 tons.

Omer Blinn, Grosses Coques, N.S.: 1 scr., 375 tons.

G. M. Cochrane, Fox River, N.S.: 2 scrs., 850 tons.

Innocent Comeau, Little Brook, N.S.; 1 scr., 250 tons.

J. W. Comeau, Comeauville, N.S.: 1 scr., 329 tons.

John Deveau, Meteghan, N.S.: 1 scr., 425 tons.

J. Ernst & Son, Mahone Bay, N.S.: 1 scr., 520 tons.

L. E. Graham, Port Greville, N.S.: 1 scr., 360 tons.

W. R. & C. A. Huntley, Parrsboro, N.S.: 2 scrs., 650 tons.

Leary & Sons, Bridgewater, N.S., 2 scrs., 265 tons.

Lewis Hardwood Co., Lewiston, N.S., 1 scr., 670 tons.

Dr. McDonald, Meteghan, N.S., 1 scr., 544 tons.

W. C. McKay & Son, Shelburne, N.S., 3 scrs., 480 tons.

W. K. McKean & Co., Liverpool, N.S., 1 scr., 400 tons.

Albert Parsons, Walton, N.S., 1 scr., 400 tons.

Quebec Shipbuilding & Repair Co., St. Laurent, Que., 2 scrs., 2,600 tons.

J. N. Rafuse, Bridgewater, N.S., 3 scrs., 755 tons.

J. W. Raymond, Port Maitland, N.S., 1 sch., 375 tons.

Robar Brothers, Bridgewater, N.S., 1 scr., 130 tons.

Robert Rutledge, Sheet Harbor, N.S., 1 scr., 300 tons.

Shelburne Shipbuilders, Shelburne, N.S., 1 scr., 350 tons.

Smith & Rhuland, Lunenburg, N.S., 2 scrs., 225 tons.

Southern Salvage Co., Liverpool, N.S., 1 scr., 150 tons.

Wagstaff & Hatfield, Port Greville, N.S., 1 scr., 400 tons.

Total, 34 wooden schooners, 12,661 gross tons.

## Naval Department Damage by Halifax Explosion.

In reference to the damage to the navy yard and the naval vessels at Halifax, N.S., by the explosion of Dec. 6, we are advised that the damage to the dockyard was quite extensive and the buildings were all more or less wrecked and some completely destroyed. The damage to the naval vessels was not serious, consisting in demolishing of upper works, perforated decks, broken glass, etc. One vessel caught fire and was slightly damaged. The department was rather lucky in being about on the edge of the heavy line of explosion. The property adjoining the dockyard was completely swept by the rush of air, and while the buildings in the yard were rather badly damaged only a couple were actually destroyed. The Naval Hospital was damaged and will not be habitable until the end of February or early in March. The Naval College is standing and the walls and roof are good. The building will not be in condition to receive the cadets for this term and temporary arrangements have been made with the Royal Military College at Kingston, Ont., for accommodation and the Naval College has been moved to Kingston for the term which began at the end of January. Five large temporary buildings are being erected in the Halifax yard to house the offices and stores during the reconstruction of the damaged buildings.

## Mainly About Marine People.

Admiral C. E. Kingsmill, Director of Naval Service for Canada, has been created a knight bachelor.

J. L. Weller, M.Can.Soc.C.E., formerly Engineer in Charge, Welland Ship Canal, and Mrs. Weller, have left St. Catharines, Ont., to spend the winter in the south.

F. J. O'Connor has been appointed agent, Pacific Steamship Co., Vancouver, B.C., vice S. B. Stocking, who has been appointed chief clerk to the General Manager, Seattle, Wash.

W. E. Burke, Assistant Manager, Canada Steamship Lines, and Mrs. Burke, left Toronto early in January to spend some weeks at Miami, Fla., expecting to return about the middle of February.

A. B. Swezey, who has been Manager of the Mediterranean saloon department, Cunard Co., New York, for 25 years, is reported to have been appointed Manager of the joint office of the Cunard Co., Anchor Line and Anchor-Donaldson Line, at Vancouver, B.C., and C. A. Whitlock is reported to have been appointed Assistant Manager.

Stephen Birch, President, Kennecott Copper Corporation, and formerly Vice President, Alaska Steamship Co. and the Copper River & Northwestern Ry., is reported to have been appointed President, Alaska Steamship Co., vice S. W. Eccles, deceased, with office in New York. The actual charge of the company's operations remains under R. W. Baxter, Vice President and General Manager, Seattle, Wash.

## The Detroit River Car Ferry and Tunnel Situation.

A press report stated recently that the car ferry services between Windsor, Ont., and Detroit, Mich., operated by the Grand Trunk, Pere Marquette and Wabash Railways, was to be abolished and that those lines would in future use the Michigan Central Rd. tunnel. Another report stated that the car ferry steamships now operated between Windsor and Detroit, by the Canadian Pacific, Grand Trunk, Pere Marquette and Wabash Railways were to be pooled, and that this will be an advantage to the service in general, and that it would not appear to be good policy to abandon any facilities that the railways have for communication between Canada and the United States.

The Michigan Central tunnel has capacity for far more business than it is now handling and in times of emergency has transferred cars from one country to the other for other roads. It would, however, not be practicable for the other railways mentioned to stop using their car ferries at once, as while the tunnel was designed for and is possibly capable of handling the entire traffic, it would be necessary to revamp the entire terminal situation on both sides of the river, as the existing railway lines were not originally planned to use the tunnel, but to use the car ferries, and there would have to be additional tunnel yard facilities and various connections provided before such an increase of business for the tunnel could be taken care of.

The privilege granted to U. S. fishing vessels operated by power, to enter Canadian Atlantic ports under license, for the purchase of bait, ice and other supplies and for the transshipment of catch and the shipping of crews, has been extended to U. S. vessels having no other propelling power than sails, for the current year.



## Shipbuilding Activities Throughout Canada.

### STEEL AND WOODEN STEAMSHIPS BUILDING FOR BRITISH GOVERNMENT.

**Cameron-Genoa Mills Shipbuilders Ltd., Victoria, B.C.**—One of the 4 wooden steamship hulls under construction at these yards was expected to be launched during January, after which she was to be taken to the Ogden Point assembly shed for the installation of the machinery, which is all ready waiting for it. She was to be named War Tyee.

**Foundation Co., Victoria, B.C.**—The wooden steamship War Songhees was launched at the company's yards Dec. 27. As she was being launched she struck a boom and it was feared that some damage was done to the hull, or to the rudder post or propeller shaft.

**Grant & Horne, St. John, N.B.**—The first of the wooden steamships being built by this firm for the Imperial Munitions Board is approaching completion. The framing was complete early in January, and preparations were well advanced for the installation of the machinery. The timber, etc., was also received for the second vessel, which will be proceeded with at once.

**William Lyall Shipbuilding Co., Vancouver, B.C.**—The first of the six wooden steamship hulls being built for the Imperial Munitions Board was expected to be launched during January. She was ready for launching in December, but was held pending the arrival of the tail shaft. The second vessel, early in January, had all her planking up, the main deck on and the upper deck nearly completed; the third hull had the garboard on, about three quarters of the planking done and was ready to receive the decking; the fourth was closed in fore and aft and work was proceeding on the ceiling; the fifth had the framing finished and the keelson bolted, while on the sixth, over half of the square framing was completed.

**Ogden Point Assembly Plant.**—The contractors, Grant Smith & MacDonnell, are reported to have stated, recently, that they expected to have the assembly plant at Ogden Point, Victoria, B.C., completed and ready for full operation by Feb. 1. The work was retarded to some extent by weather conditions, but it was speeded up considerably in the early days of the new year. A quantity of machinery is on hand for equipping the wooden hulls, and large quantities are constantly arriving from eastern points. A large portion of the necessary steam winches, steam steering gear, etc., is being made in British Columbia.

**Pacific Construction Co., Ltd., Coquitlam, B.C.**—It is reported that extensive contracts for the construction of vessels have been awarded to this company, which has two wooden steamship hulls under way for the Imperial Munitions Board. Surveys are reported to have been made for additional shipbuilding facilities alongside the present berths.

**Wallace Shipyards, Ltd., North Vancouver, B.C.**—It is reported that negotiations are in progress for the construction of two steel steamships of the "War" type, and the management has announced that if the order is received, another berth will be laid down immediately on the west side of the existing one, where a steel steamship of this type is under construction.

**Western Canada Shipyards, Ltd., Van-**

**couver, B.C.**—The first of the wooden steamship hulls under construction for the Imperial Munitions Board was launched Jan. 14 and named War Nootka, by Mrs. A. R. Mann, wife of the company's President. The company has orders for six of these hulls, and work on the remainder is proceeding rapidly.

### GENERAL SHIPBUILDING NOTES.

**Canadian Car & Foundry Co.**—A Fort William, Ont., press dispatch of Jan. 29, says this company has received a contract for building steel steamships for the United States, to the value of \$10,500,000.

**G. M. Cochrane, Fox River, N.S.**—A tern schooner of 460 tons register, was launched at this yard recently, and named Alfred Hedley. She is owned by Adam B. Mackay, of the Mackay Steamship Co., Hamilton, Ont. Her dimensions are, length 152.6 ft., breadth 36 ft., depth 12.6 ft.

**J. Coughlan & Sons, Ltd.**—One of the 3 steel cargo steamships of 17,190 gross tons, on order with this company at Vancouver, was launched Jan. 20, and named Alaska. She is being built for Norwegian interests.

**Fraser Valley Shipbuilding Co., Vancouver, B.C.**—A company, with this name, is being organized by a number of local men, to undertake the construction of all classes of vessels, wood, steel and concrete. A site for a plant is said to have been chosen in a central location on the Fraser River, within the city boundaries.

The s.s. Keith Cann, built recently for Hugh Cann and Sons, Ltd., Yarmouth, N.S., for service between Yarmouth and St. John, was given a trial run on Jan. 10. The trip was carried out successfully, an average speed of 11½ knots being maintained.

**Marine Construction Co., Canada, Ltd., St. John, N.B.**, has a schooner of about 900 tons under construction, and is making arrangements for the building of other similar vessels.

**Joseph McGill, Shelburne, N.S.**—A tern schooner, 246 tons register was launched from this yard recently, and named Sparkling Glance, for Harvey & Co., St. John's, Nfld. A similar vessel is now under construction for the same firm.

**Newfoundland Shipbuilding Co., Harbor Grace, Nfld.**—This plant is reported to be ready for the construction of auxiliary powered vessels of about 1,200 tons dead-weight capacity. It is said to be the intention at a later date, to enlarge the plant to cover the construction of steel steamships. It is said that the company has orders on hand for the construction of 13 auxiliary powered vessels, of the sametype as those built recently on the Pacific coast for Canada West Coast Navigation Co. Each vessel will be equipped with 2 hot bulb engines of 120 b.h.p. driving twin screws. The interests concerned with this company are identical with those controlling the Thor Iron Works, Toronto, and also the projected Dominion Shipbuilding Co., which is laying out a large shipbuilding plant at Toronto.

**St. Lawrence Shipbuilding & Steel Co. Ltd.** has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital and office at Sorel, Que., to take over as a going concern the business carried on there by Beauchemin Fils Co., Ltd., with all its assets and liabilities, and to build, operate and deal in

vessels of all kinds, engines, boilers, etc., and to carry on a general brass, iron and steel foundry business.

**St. Martins Shipbuilding Co., St. Martins, N.B.**—A 450 ton schooner is under construction at these yards, and it is expected to have it ready for launching in the spring. Arrangements are going forward for the building of other schooners.

**The Tidewater Shipbuilding Co., Ltd.**, is operating a shipyard at Three Rivers, Que., with James M. Smith as General Manager. Canada Steamship Lines Ltd. is interested in the company.

**C. T. White & Son, Alma, N.B.**—Two schooners of about 500 tons each are on the ways, with the expectation of launching in the spring.

**Yarmouth Shipbuilding Co., Yarmouth, N.S.**—The schooner which was mentioned in our last issue as being under construction by this company, was launched toward the end of December and named Eleanor S. She is to be equipped with twin engines of 25 h.p. each. She is owned by the Yarmouth Fish Co.

### Newfoundland Shipping and Insurance in 1917.

The Newfoundland Marine Insurance Co.'s report for 1917, refers to Newfoundland shipping as follows: "The many losses in our foreign going fleet during last winter were probably the worst experienced in this trade in any one season, but it had no discouraging effect upon Newfoundland merchants and exporters, as is evidenced by the large fleet of new vessels now owned in this country and engaged in our foreign carrying trade. The unusually large number of vessels which have been built in this country during the past year, of larger tonnage than formerly, bears a striking testimony to the enterprise of those interested in our export trade.

"During 1917 we accepted marine risks of \$6,262,648.20 and war risks of \$1,346,183.47, a total of \$7,608,831, with gross premiums of \$108,231.81. We had losses upon the marine risks of \$16,377.00 and upon our war risks commitments of \$25,817.00.

"Lloyd's underwriters have notified the trade here that there will be a substantial advance in their rates on Newfoundland risks by domestic sailing craft, as well as on all our foreign going sailing vessels. This is a matter that should receive earliest consideration. Lloyd's rates are now getting extreme on our local craft and the high values of our produce greatly increases the aggregate amount of premiums. It is important, therefore, that as much as possible of this money should be kept in the country. These frequent advances in rates show the need of local underwriters and we must do everything in reason to protect the local business."

**Maritime Wrecking & Salvage Co. Ltd.** has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital and office at Montreal, to carry on the business of salvors and wreckers of ships and craft of any kind, to build, repair and operate steam and other vessels, dry docks, marine railways, etc.

**Colonial Shipping Co. Ltd.** has been incorporated under the British Columbia Companies Act, with \$40,000 authorized capital and office at Vancouver, to own and operate steam and other vessels and carry on a general transportation business.



## Shipbuilding in British Columbia.

By Bradford W. Heyer, Vancouver, B.C.

Quite the most important development in British Columbia during 1917 was the development with regard to shipbuilding. While the shipbuilding industry advanced most during the past year, it had its beginning back in 1915, when the B.C. Government passed a shipbuilding act giving aid to those wishing to build ships, by a guarantee of security, and also by guaranteeing a fixed fair return on the investment for a period of years after the war. Twelve auxiliary powered schooners were built, 6 by the Wallace Shipyards of North Vancouver and 6 by the Cameron-Genoa-Mills Shipbuilders, Ltd., of Victoria. These ships were built for the Canada West Coast Navigation Co. which availed itself only of the guarantee of profit from operation, and did not apply for aid in the construction of the ships. These vessels are sailing ships, with auxiliary Bolinder equipment, and were intended to be used more especially for the deep sea shipment of B.C. lumber. The last of these vessels took the water in the spring but, because of the huge demand for bottoms, they have seldom returned to B.C. ports for reloading.

The Wallace Shipyards took the first contract for a steel vessel since the beginning of the war, the War Dog, for Japanese interests. This vessel, of 4,900 tons dead weight capacity, was floated during the summer, and has since departed with cargo for Britain and has been transferred to British ownership. The company has another under construction and has a contract for a third of similar design for British owners.

During the summer of 1916 Norwegian interests were on the coast seeking to place orders for steel ships wherever responsible people would accept them. J. Coughlan & Sons, structural steel fabricators, of Vancouver, signed a contract for four steel ships of 1,800 tons dead weight capacity. These vessels were to cost on an average \$1,250,000 per vessel. During the fall of 1916, the Imperial Munitions Board placed with J. Coughlan & Sons orders for two more ships of similar design, and took over three of the Norwegian vessels, leaving only one to be delivered to the Norwegian interests. It is expected, however, that before the Norwegian vessel takes the water, which will be some time in January, 1918, that arrangements will be made for either her transfer or charter to British owners or the Admiralty.

During Dec., 1917, contracts were signed with the Imperial Munitions Board for four more vessels to be built by J. Coughlan & Sons, who have now approximately \$13,000,000 of tonnage in process of construction.

In the spring of 1917 the Imperial Munitions Board awarded 27 contracts for wooden steamships of 2,800 tons dead weight capacity, amounting approximately to \$13,500,000. These contracts were awarded as follows: Foundation Co., Victoria, 5; Cameron-Genoa-Mills Shipbuilders, Victoria, 4; Wm. Lyall Shipbuilding Co., N. Vancouver, 6; Western Canada Shipyards Ltd., Vancouver, 6; New Westminster Construction & Engineering Co., New Westminster, 4; and Pacific Engineering and Construction Co., Coquitlam, 2. These vessels are all of standard design, 250 ft. long, 44½ ft. beam, and 25 ft. deep. They are built on the cost plus a fixed profit basis. Most of the equipment, including engines and boilers, are

being built in British Columbia. About four of these ships are ready to take the water, and it is expected that all will be in the water by May of this year. While nothing is known of future orders to be placed for this class of ship, it is confidently believed that all the yards that have shown themselves competent to build this class of vessel will be kept building to capacity.

The building of steel ships in competition with the Atlantic seaboard does not seem to promise permanence. Because of war conditions it is likely that the steel shipbuilding industry of British Columbia will be worked to the limit, but without the establishment of a steel industry in this province the outlook is not bright. The establishment, therefore, of a steel industry along this coast is one of supreme importance to the industrial development of British Columbia, and is a question that should be taken up in a national way.—Toronto Globe.

## Wreck Commissioners' Investigations and Judgments.

**Princess Mary-Henriette Collision.**—The investigation held by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. S. W. Bucknam and D. S. Jones-Evans, as nautical assessors, into the collision in Vancouver harbor, Sept. 25, 1917, between the C.P.R. s.s. Princess Mary and the Coastwise Steamship & Barge Co.'s s.s. Henriette, was concluded at Vancouver, Dec. 6, and judgment rendered, Dec. 14, as follows:—The court, after carefully studying the evidence adduced, which was of such a conflicting nature that the court's opinion of the memory and veracity of some of the witnesses was not very favorable, can come to no other conclusion than that the blame for the collision must be imputed to the actions of both the masters of the vessels concerned. While no direct violation of the International Rules of the Road is concerned, there can be no doubt that both masters showed a want of discretion, a lack of patience and poor judgment, and both took unnecessary risks, with the result of a collision. Slight fortunately, in broad daylight, fine weather and in the open waters of the harbor. The court, however, is of opinion that reprimand and a warning to both masters to be more careful in future under similar circumstances, will meet the requirements of the case, and therefore returns to Capt. Charles Campbell, master of the s.s. Princess Mary, and Capt. Otto Bucholz, master of the s.s. Henriette, their respective certificates of competency, with the remark that it trusts that its leniency will be appreciated, as it certainly will not be renewed should a casualty occur in the future under similar conditions.

**Forwarders Ltd.,** the incorporation of which was announced in a recent issue, has been formed to take over the assets of Forwarders Ltd., which formerly owned and operated the steamships Port Colborne, Port Dalhousie and W. H. Dwyer in upper lakes service. These vessels were chartered for ocean and European service on the outbreak of war, and have since been torpedoed and lost. Hall and Holcomb, Ottawa, are chiefly interested.

## Shipbuilding and Repairing at Esquimalt.

Yarrows Limited are building at Esquimalt, B.C., three stern wheel steamships for shipment to India. Two of them will be 132 ft. long and 32 ft. beam, exactly similar to two shipped to the same destination previously and one will be 165 ft. long and 35 ft. beam.

During the past year Yarrows Limited executed a large amount of important naval repair work for the Imperial, Canadian and Japanese governments, and at present the yard has a considerable amount of naval repair work in hand for the British Admiralty. In addition to this, the company executed a considerable quantity of other important repair work during the year, among which may be mentioned the following: Grand Trunk Pacific Coast Steamship Co.'s steamship that had been ashore, was repaired at Esquimalt, the work necessitating the renewal of practically the whole of the ship's bottom for a length of 180 ft.. The s.s. Niels Nielsen, a 8,800 ton cargo vessel, was repaired after sustaining heavy damage due to stranding. A new, fully laden cargo vessel of 8,800 tons, which was brought back from sea in a disabled condition, was fitted with a new 18 ft. dia. manganese bronze bladed propeller. This propeller was cast, fitted, and the ship made ready for sea again within a week, without docking or disturbing her cargo, the work being carried out by building a wooden cofferdam round the vessel's stern. The s.s. Gray, which was very badly damaged and had her back broken and buckled, was repaired, the work necessitating the removal of about 37 plates, the relining up and straightening of the ship, and the removal of the stern frame. At the present time, the G.T.P. Coast Steamship Co.'s s.s. Prince John is on the ways for general overhaul and for repairs to damage done by stranding. In addition to the above, a large number of vessels were drydocked for repairs and general overhaul.

A specialty has been made of the conversion of steamships from coal to oil burning, one of the most recent jobs being the cable ship Restorer, which was fitted out to carry 100,000 barrels of fuel oil. Several of the C.P.R. coast steamships and of the G.T.P. Coast Steamship Co.'s steamships and various local dredgers, have been converted from coal to oil burning. A large number of cast iron and manganese propeller blades, some weighing as much as 8 tons, have been made, also a number of large marine engine and other castings, bed plates, h.p. l.p. and i.p. cylinders being made for engines 24 x 38 x 62 x 42 in. stroke, also some large nitric acid retorts, weighing as much as 8 tons each. The plant is equipped with an oxy-acetylene welding and cutting outfit, and handles a large amount of special coppersmithing and pipe work, also galvanizing.

The yard is situated at Esquimalt Harbor, a suburb of Victoria, and covers an area of about 8 acres. The wharf is over 500 ft. long, and can accommodate, on both sides, vessels sent in for overhaul and repairs. The marine railway can accommodate vessels up to 300 ft. and 2,500 tons dead weight. Vessels of larger size up to 480 ft. are handled in the drydock. The plant is equipped with 60 ton shears and a 10 ton floating compressed air plant, which can be used on repairs to vessels lying off the yard. The company employs on an average about three hundred and fifty men.



## Atlantic and Pacific Ocean Marine.

The Dutch s.s. *Nieuw Amsterdam* arrived at Rotterdam at the end of December with a cargo of grain for Belgian relief. She was in Halifax harbor at the time of the disastrous explosion on Dec. 6, and bore considerable traces of the damage she incurred.

The U. S. steamship *Alfred Mitchell*, one of the lake steamships transferred for Atlantic service, was libelled by her crew at Charlottetown, P.E.I., recently for \$4,200 representing wages due. She was on the way to a U. S. port when stress of weather drove her to Georgetown, P. E. I.

The auxiliary power schooner *Beatrice Castle*, which as previously announced, was sold by Canada West Coast Navigation Co., or one of its subsidiary companies, to W. B. Castle, President of the Zena Iron Works, Duluth, Minn., is now reported to have been sold to the French Government. She was built by Cameron-Genoa Mills Shipbuilders, Ltd., and was launched at Victoria, B.C., Nov. 23.

W. Smith, second officer on one of Canadian Pacific Ocean Services' Atlantic steamships, was sentenced at Liverpool, Eng., recently, to imprisonment for one month on each of two charges of stealing pickles, tea and bacon, the property of the company, from the Canada Dock, the sentences to run concurrently, and a Liverpool constable was fined £5 for receiving the goods knowing them to have been stolen.

The s.s. *George N. Orr* was driven ashore on the north side of Prince Edward Island, Jan. 10, while en route from Montreal to New York with a cargo of hay. She is stated to be owned by the United States Shipping Co., but is owned by the Canada Atlantic Transit Co., Montreal, and is reported immv ET ET Montreal, and is registered in the U. S., and probably has been requisitioned by the U. S. Government.

The s.s. *Angouleme* was reported recently to have been wrecked on Main a Dieu Island, off the Nova Scotia coast, and it was feared that she would be a total loss. We were advised Jan. 17 that she had been released, the damage not being so great as was anticipated. She was built by the Thor Iron Works, Ltd., Toronto, and was launched Aug. 1, 1917, and christened Orleans. She was built to the order of James Playfair, President and General Manager, Great Lakes Transportation Co., Midland, Ont., and while she was on the stocks was sold to the Oriental Navigation Co., of New York and Nantes, France.

The schooner *Malahat*, which was built by Cameron-Genoa Mills Shipbuilders, Ltd., at Victoria, B.C., last year, for the Malahat Motor-Ship Co., Ltd., a subsidiary of Canada West Coast Navigation Co., composed of interests concerned with Canada Steamship Lines, Ltd., is reported to have been sold to Canada Steamship Lines, Ltd. The vessel, which was to have been equipped with auxiliary power of the Bolinder type, sailed from Port Alberni, B.C., Oct. 13, 1917, for Sydney, Australia, on her maiden trip, without the auxiliary machinery, owing to the difficulty in obtaining delivery in time. She took 65 days on the trip. She is returning to Vancouver, where the machinery is to be installed, after which, it is stated, that she will enter the West Indies trade.

The auxiliary schooner *Bowler* is expected to sail from Vancouver shortly, for Australia with a cargo, where she

will be taken in charge by a French crew and taken to France, having, it is reported, been sold to the French Government. The *Bowler* was originally the s.s. *Zafira*, and was built at Aberdeen, Scotland. For several years she was operated in the coal trade between Hong Kong and Manila, and was purchased by the U. S. for service during the Spanish-American war. She was subsequently bought by a Vancouver shipbuilder and has been lying in Burrard Inlet for about a year. All the machinery, etc., was removed and she was stripped to the steel frame, after which she was sheathed with 3 in. plank and equipped with a Diesel engine of 350 h.p., 4 steam winches, steam windlass and other fittings. Her dimensions are, length 237 ft., breadth 32 ft., depth 17 ft. The rebuilding was carried out under Bureau Veritas regulations, and was supervised by Capt. S. F. Mackenzie, a well known Pacific coast mariner.

## Maritime Provinces and Newfoundland.

A channel 70 ft. wide, to a depth of 9 ft. has been dredged in the Boughton River, P.E.I., to Bridgetown, the head of navigation, where a wharf has been built on the north side of the river.

The Halifax Graving Dock Co., which suffered heavy loss through the disastrous explosion at Halifax, Dec. 6, is erecting temporary buildings to replace those wrecked, and hopes to be able to handle vessels there early in February.

The Public Works Department has completed the construction of a wharf in Cummings Cove, west of Deer Island, N.B. It extends out 385 ft. from high water mark, and is 20 ft. wide, with a block 50 ft. square at the outer end.

The s.s. *Beverley*, which went ashore at St. Marys, Nfld., recently, and which was released subsequently with comparatively slight damage, is reported to have been sold to W. A. Munn, St. John's, Nfld., for \$125,000, and to have been chartered for a Mediterranean trip with fish.

The sealing steamship *Seal*, owned by Farquhar & Co., Halifax, N.S., is reported to have been sold to Baine, Johnstone & Co., St. John's, Nfld. She was built at Glasgow, Scotland, in 1911, and is screw driven by engine of 85 n.h.p. Her dimensions are, length 175 ft., breadth 22½ ft., depth 12¼ ft.; tonnage, 608 gross, 277 register.

The s.s. *Governor Dingley*, operated until recently by the Eastern Steamship Corporation between Boston, Mass., and Yarmouth, N.S., has been requisitioned by the U. S. Government, and is being used as a training ship for merchant service crews. The same company's s.s. *Calvin Austin* is also being used for a similar purpose, and both are stationed at East Boston.

The Wedgeport Transportation Co., Ltd., has been removed from the Nova Scotia Companies Register for noncompliance with the requirements of the law. H. T. LeBlanc, Wedgeport; C. W. Collins, Granville Ferry; J. S. McCulloch, Annapolis Royal; H. J. Collins, Annapolis Royal; R. S. Collins, Granville Ferry; and F. C. Whitman, Annapolis Royal, N.S., were chiefly interested in the company.

The Public Works Department has completed the following dredging work in North Rustico harbor, P.E.I.:—Gauthier creek, up to a small basin near the fishing stages southward of the village, for 2,350 ft. by 60 ft. wide and 8 ft. deep, and the outer end of the fishing stages

for 500 ft. by not less than 4½ ft. off any stage, and has also enlarged the turning basin and dredged it to an average depth of 7 ft.

The Halifax pilotage bylaws have been amended by the substitution of a new bylaw in place of bylaw 21. It provides for the appointment of one or more apprentices to each pilot boat, when the commissioners deem it necessary, each apprentice to serve five years, be of good moral character, and have the rudiments of an ordinary English education. At the expiration of their apprenticeship, they shall be eligible to be licensed as pilots, provided they have served at least six months as seamen on board a steam or sailing vessel, and have been found by the commissioners, after examination, to possess the qualifications required of pilots, by law.

## Province of Quebec Marine.

Traffic through the Lachine Canal was considerably heavier during 1917 than in 1916. In 1917 there were 7,936 vessel passages, by 607 vessels aggregating 294,773 tons. The cargo tonnage was 3,335,943 and the number of passengers 69,910. The heaviest traffic was down bound.

On the reopening of navigation, a channel about 1¼ miles long, northwest of Longue Pointe shoal, in Montreal harbor, from Longue Pointe to Racine wharf, carrying at least a depth of 27 ft., will be marked by 6 spar buoys, placed at intervals from the northeast corner of Vulcan wharf to the southeast corner of Racine wharf.

The Dominion Government dry dock at Lauzon is reported to be practically complete, but it is said that the opening will not take place until September. The crib work at the entrance is yet to be done, and a portion of the work at the opposite end. The power house and pumping machinery are complete, and will be tested shortly. Several men are at present engaged there, mostly in the machine shop, but general work will not be resumed until the reopening of navigation.

## Ontario and the Great Lakes.

The Midland Shipbuilding Co., Midland, Ont., has increased the number of its directors from five to seven. D. L. White is President, and T. C. Luke, Secretary.

The Toronto, Hamilton & Buffalo Navigation Co.'s car ferry steamship *Maitland No. 1*, discontinued its service between Port Maitland, Ont., and Ashtabula, Ohio, Jan. 4, for the remainder of the winter, owing to ice conditions.

The Toronto, Hamilton & Buffalo Navigation Co. announces that it has temporarily withdrawn the car ferry between Port Maitland, Ont., and Ashtabula, Ohio. Traffic, which would otherwise move via these points, is now being routed via Niagara and Detroit frontiers.

The Toronto Ferry Co.'s dock at the foot of Bay St., Toronto, was practically destroyed by fire, Jan. 6, the damage being estimated at \$55,000. The fire was confined to the company's property, though Canada Steamship Lines' s.s. *Chippewa*, which was berthed close by, was somewhat damaged by fire and water.

The United States Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for December, as follows:—Superior, 602.16; Michigan and Huron, 580.80; St. Clair, 575.53; Erie, 572.67; Ontario, 246.45. Compared with



the average December levels for the past ten years, Superior was 0.13 ft. below; Michigan and Huron 0.80 ft. above; Erie and Ontario 1.09 ft. above.

Press reports emanating chiefly from Detroit, Mich., recently, stated that the abandonment of the car ferries between Windsor and Detroit, was likely to be a local result of the operation of the U.S. railways by the Government. It was also stated that the G.T.R. has been anxious to use the M.C.R. Detroit tunnel, and thus do away with its car ferry service across the river. We were officially advised, Jan. 12, that the G.T.R. does not at present contemplate the abandonment of its car ferry service between Windsor and Detroit.

The s.s. Forest City, owned by the Sil-Islet Navigation Co., Fort William, is reported to have been sold to W. McCullough, Manager, Fort William Grain Co., for \$27,000. She was built at Wilmington, Del., in 1891, and was formerly known as King Edward. The hull is of steel divided by five water tight bulkheads, and is of the following dimensions, length 175 ft., breadth 31 ft., depth 9½ ft.; tonnage, 571 gross, 449 register, and is equipped with beam condensing engine with cylinder 38 in. diam. by 108 ins. stroke, 400 i.h.p. at 25 r.p.m., and supplied with steam by two Scotch boilers 11 by 9 ft. at 25 lbs. working pressure.

### British Columbia and Pacific Coast.

The Union Steamship Co. of British Columbia is increasing accommodation for passengers and freight on its wharf at Vancouver.

The s.s. Imperoyal, owned by Imperial Oil, Ltd., Toronto, was docked at Wallace Shipyards, North Vancouver, Jan. 14, for repairs to her propeller.

The Dominion Public Works Department will receive tenders, Feb. 4, for the construction of a wooden freight shed and the fireproofing of grain conveyor supports, on the west side of the government wharf, Vancouver.

The Tacoma, Wash., Chamber of Commerce, is reported to be negotiating with J. W. Troup, Manager, British Columbia Coast Service, C.P.R., for the service of one of its Princess steamships between Tacoma and British Columbia ports.

The Seattle Drydock and Construction Co. has secured judgment for \$87,000, against Grant Smith and MacDonnell, in connection with the capsizing of a floating dock rented from the dock company, for use on the Victoria Harbor improvement contracts.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John completed repairs at Yarrows Ltd., yards, Esquimalt, early in January, and sailed from Nanaimo with coal for northern ports, Jan. 8. After completing the trip she was placed on the run to Queen Charlotte Islands and Alaska alternately.

Salvage operations are reported to be proceeding on the remains of an old bark which foundered off San Juan Island in 1874, while en route from Nanaimo, B.C., to San Francisco. It is stated that all the upper works of the vessel have disappeared, and also the iron work, but that the copper sheathing and cargo of coal are intact.

The Grand Trunk Pacific Coast Steamship Co.'s auxiliary schooner Tillamook was docked at Seattle, Wash., early in January, for a general overhaul. She is

to be fitted with a new pilot house, and equipped with a steam heating plant and two electric winches, of 5 tons capacity each. During 1917 she was operated between Prince Rupert and the Alaska canneries.

The Grand Trunk Pacific Coast Steamship Co. is reported to be negotiating for the purchase of the s.s. F. A. Kilburn, from the Independent Steamship Co., San Francisco, Cal. The vessel has been operated for some time in the general freight and passenger trade between Columbia River and San Francisco, and if the sale is consummated, it is said to be the intention to transfer her to the Alaska cannery trade.

The s.s. Spokane, which went on the rocks at Idol Point recently, was released under the direction of Capt. W. H. Logan, Victoria, B.C., representing the Salvage Association, London, Eng. Her stem was bent and broken and on the starboard side there was a large opening 21 ft. long. This was patched with cement, about 100 tons being required, and pumping machinery was put in, with a capacity of 2,250 tons of water an hour. She was taken to Seattle, Wash., and arrived in port drawing 7 ft. forward and 19 ft. aft.

The liquidator of the All Red Line Ltd., is suing Capt. C. O. Polkinghorne for \$11,677, and also for a declaration that a resolution of the company is invalid, which authorized the writing off of a number of accounts due to the company, and the release of certain parties from any claim for liability, except in so far as one claim for \$2,095 against Capt. Polkinghorne is concerned. The company owned the steamships Santa Maria and Selma, which were purchased recently by the Union Steamship Co. of British Columbia.

The steam tug Lorne, which the Grand Trunk Pacific Coast Steamship Co. purchased recently from A. McDermott, Victoria, was expected to be ready for service during January. She was formerly owned by the Puget Sound Tug Boat Co., and was wrecked in Sept. 1914, when on the way from Seattle, Wash. to Vancouver, after which she was laid up in Eagle Harbor. The hull has been practically rebuilt in the G.T.P. dry dock at Prince Rupert, and the machinery has been overhauled, and a new tail shaft, supplied by Yarrows, Ltd., has been put in.

**Marine Engineers' Wages.**—At a recent meeting of the Great Lakes executive of the National Association of Marine Engineers at Toronto, the question of wages was discussed. The present rates are, chief engineers, \$1,200 to \$1,800; second engineers \$960 to \$1,500. It is reported that the rate asked for the forthcoming season will be, chief engineers \$1,440 to \$2,100; second engineers \$1,152 to \$1,800.

**Co-operative Shipping Co. Ltd.** has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital and office at Montreal, to build, own and operate steam and other vessels for the transportation of mails, passengers and merchandise, and to conduct a general transportation business by land and water.

**Pilotage Investigation.**—An Ottawa dispatch of Jan. 25 states that the Minister of Marine will appoint a commission shortly to investigate the pilotage systems at the various ports in the Dominion. It is also stated that in view of the recent disaster at Halifax, N.S., the system in operation there will be the first one to come under enquiry.

### Pacific Coast Steamship Rates.

The Pacific Steamship Co. put into effect Jan. 20 a new schedule of fares from Victoria, B.C., to San Francisco, Wilmington and San Diego, Calif. The increases are as follows:

Victoria to San Francisco—Upper deck from \$19 to 23; lower deck, from \$17.50 to \$19. The stowage rate remains unchanged at \$12.

Victoria to Wilmington—Upper deck, from \$26 to \$33.50; lower deck, from \$25 to \$27; stowage, from \$15 to \$18.

Victoria to San Diego—Upper deck, from \$32.50 to \$36.50; lower deck, from \$28 to \$30; stowage, from \$15.75 to \$20.

**Panama Canal Traffic.**—For the year ended June 30, 1917, 1,876 vessels of all classes passed through the Panama Canal, against 787 in 1915-16 and 1,088 in 1914-15. In the year 1916-17, 905 vessels passed from the Atlantic to the Pacific and 971 from the Pacific to the Atlantic. The total tonnage for 1916-17 was 7,229,255, and the tolls were \$5,631,781.66.

"War" series vessels which are under construction at various U. S. Pacific ports, presumably for British interests, are being requisitioned by the U. S. Government, and those which have been named are having their names changed, the War Flame, War General and War Leopard have been renamed New Haven, Westfield and Westport, respectively, and those not yet christened are to be given names associated with the U. S.

**Canadian Co-operative Marine Corporation Ltd.** has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital and office at Montreal, to carry on a general commercial and transportation business as owners or agents for others, and to build, own and operate steam and other vessels, and also to engage in general co-operative marine insurance business and for other purposes.

**Wolvins Limited** has been incorporated under the Dominion Companies Act, with \$2,000,000 authorized capital and office at Montreal, to import, export, manufacture, transport and deal in merchandise, to build public and private works, and in connection therewith to own and operate steam and other vessels and other transportation facilities. F. S. Isard, Comptroller, Canada Steamship Lines, Ltd., Montreal, is one of the incorporators.

The Winnipeg Citizens' Research League has issued a bulletin "Jitney or street car," giving the findings of Adam Shortt into the recent investigation into transportation matters at the Pacific Coast.

The C.P.R. s.s. Princess Victoria was towed to Yarrows yard, Esquimalt, Jan. 8, for hull cleaning and painting.

## MARINE ENGINE AND BOILER

ENGINE—Fore and aft compound, 12 x 24 x 14, pumps and shafting complete.

BOILER — Locomotive type, 130 pounds steam pressure.

Attractive Price

**FOR QUICK SALE**

Apply—

MUSKOKA NAVIGATION CO.,  
Gravenhurst, Ont.



## Harbor Improvements at Victoria B. C.

The annual report of the Inner Harbor Association of Victoria, issued recently, shows that there is an increased width of about 60 ft. available on the west side of the harbor, immediately south of the Esquimalt and Nanaimo Ry. bridge, by the removal of rock from Discovery Rock, while Hospital Rock, east of Songhees Point, was also cut back about 80 ft., giving additional width where the C.P.R. ferry boats leave the harbor. The area in James Bay, north of the C.P.R. wharf, has been deepened from 14 to 20 ft. below low water mark, giving a safe mooring for the larger boats at all stages of the tide. The north side of the main channel between Songhees Point and the entrance to West Bay has been improved, the removal of rock from the south of Pelly Island giving 100 ft. additional width, and between Pelly Island and the entrance to West Bay, an additional 150 ft. An additional 100 ft. of width has also been made at Shoal Point. During 1917, about 252,000 cub. yds. of rock, hard pan, etc., were removed, some 16,000 cub. yds. being blasted by the drilling plants and the rock breaker. In the upper harbor considerable improvements were carried out in the area fronting Cameron-Genoa-Mills Shipbuilders' launching ways and the Foundation Co., where a depth of 20 ft. below low water has been cleared. The removal of rocks in the centre of the upper harbor has been undertaken, and when this work has been completed, a depth of 20 ft. below low water will be cleared, the same as in the mooring basin at the Marine Department's wharf north of the railway bridge, and near Point Ellice bridge.

## Chartered Vessels and War Region Risks.

The Dominion Coal Co.'s appeal against a judgment of the Court of Appeal, came before Judicial Committee of the Privy Council recently. The Dominion Coal Co. chartered the s.s. Maskinonge from E. F. & W. Roberts, as owners of the vessel then under construction, for seven consecutive seasons from the spring of 1912. for the St. Lawrence coal trade. The rate was fixed at 4 shillings a ton and the owners were to insure the vessel. After war broke out the s.s. Maskinonge became the property of the Maskinonge Steamship Co. of Liverpool, Eng., and a new agreement was entered into, whereby the vessel was chartered for six consecutive years at 6s. 6d. a ton, and a clause was inserted providing that if the vessel was ordered by the charterer to trade in the war region, the war risk insurance premium payable by the owner, was to be refunded by the charterer. This charter came into operation in Nov. 1915, and the vessel was employed on the St. Lawrence until the navigation season closed, when she was placed in operation between Sydney and Halifax, N.S., and Boston, Mass. On Oct. 8, a German submarine appeared off Nantucket and sank five vessels. On enquiry by the owner, the charterer stated that it was the intention to continue the vessel on the same route, whereupon the owner claimed that it had been ordered to trade in the war region, and that the war risk premium payable by the owner should be refunded by the charterer.

A claim was entered in an English court, and judgment was given in favor of the charterer, it being held that the

actions of the submarine did not make the waters between Cape Breton and Boston a war region, and that the charter did not order the vessel to trade in the war region. The owner appealed the case to the Court of Appeal, when the decision was reversed and judgment entered for £1,765 and costs against the charterer. The judgment stated that when, as in this case, there had actually been warlike operations by the appearance of a German submarine and the sinking of vessels in the area in which this vessel was trading or ordered to trade in future, and that there was reasonable apprehension that these operations would recur, and no reasonable grounds for coming to the conclusion that this was a mere sporadic attack, then that constituted this area a war region within the meaning of the contract. The Dominion Coal Co. has now appealed the case to the final court, contending that it had not ordered the vessel to trade in the war region, and that the sporadic appearance of a single German submarine for one day at a place off New York, about 100 miles from the vessel's actual trading limits, did not constitute the waters in which she was trading, between Cape Breton and Boston, a war region. Judgment had not been received at the time of writing.

## United States Lake Port Development and the Welland Ship Canal.

In a report to the U. S. War Department recently, on the possible effect of the construction of the Welland Ship Canal, by Canada, the Chief Engineer made the following statement: It is evident that the improvement of the Welland Canal alone will have but little influence on existing lake commerce between U. S. ports, other than to permit the vessels now engaged in that commerce to gain access to the New York State barge canal at Oswego. The deepening of the harbors of the Great Lakes and the connecting waters to 25 ft. would permit vessels to load to greater draft than at present, and this advantage could be given without any deepening of the Welland Canal, except as that canal affects access to the port of Oswego. The additional improvement of the harbors and connecting waters necessary to permit them to accommodate all vessels able to pass through the Welland Canal, when enlarged by Canada, consist in the deepening of such harbors and connecting waters to about 25 ft., which would involve an expenditure now deemed incommensurate with the benefits to be derived therefrom. The character of the vessels which may be expected to use the canal when so enlarged are those of the type now constituting the lake fleet."

## Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has opened offices at Beamsville Camp, Ont., and Debdon and Madison, Sask., and has closed its offices at Dropmore, Man.

The Marconi Wireless Telegraph Co. of America had a net income for 1917 of \$609,430, against \$259,888 for 1916. Gross earnings were \$1,328,525 and \$862,501 for the same years respectively.

The following assessments on "wire" companies have been made in Toronto for this year: Great North Western Telegraph Co., \$187,319; C. P. R. Telegraphs,

\$173,178; Dominion Telegraph Co., \$1,420 \$173,178; Dominion Telegraph Co., \$1,420; Bell Telephone Co., \$2,962,614.

The Montreal Telegraph Co.'s annual meeting was held at Montreal, Jan. 11. The balance sheet for 1917 shows assets of \$2,151,823, of which the principal item is telegraph lines in Canada and the U. S., valued at \$1,625,890. Cables are valued at \$33,487, offices and equipment \$212,500, and real estate \$279,946. Cash accounts receivable and other securities total \$161,862. The company's lines are operated under lease by the Great North Western Telegraph Co., and the payment of dividends is guaranteed by the Western Union Telegraph Co.

The C. P. R. Telegraphs reports that nearly all its wires in Halifax, N.S., were interrupted as a result of the explosion of a munitions ship in the harbor, Dec. 6, one circuit remaining in service long enough to report the disaster. Communication was established later in the day and then continued without interruption. Some delay was caused in restoring full communication, owing to the severe storms subsequent to the explosion, and there was a delay in handling the traffic, owing to the reduced facilities and to the large number of messages. Additional staffs of operators were dispatched from eastern centres.

## Among the Express Companies.

The Board of Railway Commissioners has approved the Northern Ex. Co.'s standard mileagetariff of maximum tolls C.R.C. 40.

George A. Newman, Treasurer, Dominion Ex. Co., Toronto, died there, Jan. 19, aged 66. He was one of the original officials of the company.

A. J. Seaton, heretofore Assistant Superintendent, Eastern Division, Canadian Ex. Co., has been appointed Superintendent, Eastern Division, and his former position has been abolished. Office, Montreal.

W. E. Norman, heretofore Assistant to Superintendent, Western Division, Canadian Ex. Co., has been appointed Assistant Superintendent, Western Division, reporting to the Superintendent, and his former position has been abolished. Office, Toronto.

The Board of Railway Commissioners has ordered that the tolls of the Dominion and Canadian Ex. Cos. shall include the collection and delivery of express freight within the limits of Timmins, Ont., excepting Elm, Maple and Birch Sts., north of Sixth Ave., and also Sixth Ave. west of Maple St.

The Board of Railway Commissioners has ordered, on the application of the Board of Trade, Pas, Man., that the Canadian Northern Ex. Co.'s tolls shall include the collection and delivery of express freight in the portion of the town bounded continuously by the further side of Seventh St., the Hudson Bay Ry. and the Saskatchewan and Pas Rivers.

Under instructions from the Commissioner of Customs, express companies have been charging for storage in bond of express shipments waiting customs entry, as follows: under 15 lb. free; 15 to 25 lb. 5c; 25 to 100 lb. 10c; 100 to 200 lb. 15c; and over 200 lb. 20c. On the Toronto Board of Trade's application the Board of Railway Commissioners has ordered that the charge be discontinued pending the filing of such a tariff with the board, this formality having been omitted.



### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Taylor & Arnold, Ltd., Montreal, reports that its engineer, Godwin Shenton, has secured in Philadelphia, a contract for Chadburn's telegraph equipment, for the first 50 standard steamships to be built for the U. S. Emergency Fleet Corporation, by the American International Shipbuilding Co., in its Hogg Island plant.

Calendars for 1918 have been received from: John Bertram & Sons Co., machine tools, Dundas, Ont.; Dearborn Chemical Co. of Canada, Ltd., Toronto; Hiram L. Piper Co., Ltd., railway signals, lamps and supplies, marine lamps, lifebuoy lights and distress signals, Montreal; Ly-

man Tube & Supply Co., railway and industrial supplies and equipment, Montreal; Taylor & Arnold, Ltd., railway and marine specialties, Montreal.

Prest-O-Lite Co., Inc., Toronto, has issued a booklet, 28 pages, 8½ x 10¼ in., entitled "Turning waste into profit," which deals with the matters of conservation of steel and iron through oxy-acetylene welding and cutting. It is illustrated with half tone engravings of welding repair operations in railway, machine and other shops.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Association for National De-

fence, W. M. Neal, General Secretary, 263 St. James St., Montreal.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Canadian Society of Civil Engineers—F. S. Keith, 176 Mansfield St., Montreal.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacramento Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

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Manifold of Submarine Engine, All Welded

are absolutely essential to modern Industries for the rapid repairing of machinery and parts and the prevention of "tie-ups" caused by delays in, or the impossibility of procuring replacements. But, in order to secure ALL the Money, Time and Labor Saving advantages that are possible by adopting these Processes

An Efficient Service for Gases  
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Having Four Factories in Canada for the manufacture of Oxygen, Dissolved Acetylene and Apparatus of the highest efficiency places us in an unique position to give you an unequalled Service, so that you may derive ALL the benefits possible from the Processes when applied to your Industry in conjunction with "A.L.S." Apparatus and "A.L.S." Service.

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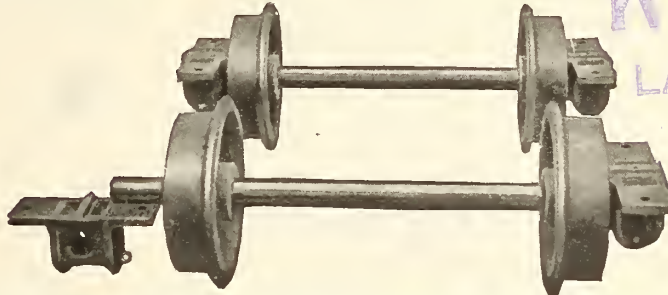


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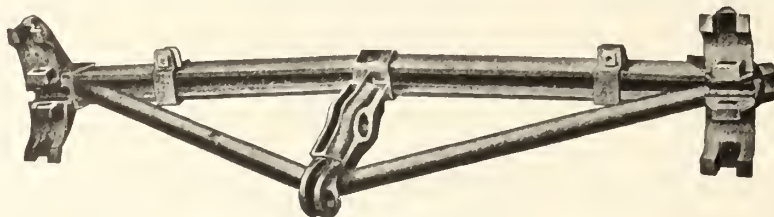




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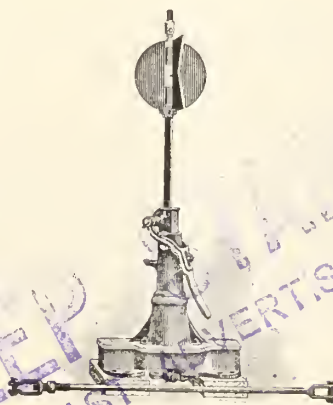
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# NOTICE

Pursuant to Power Commission Act, 6 Geo. V, Chapter 19, Section 39, 1916, and amendments thereto, and the Rules and Regulations of the Hydro-Electric Power Commission covering the design and construction of electrical machinery, apparatus, appliances, devices, material and equipment for use in the generation, transmission, distribution or use of electric power or energy in the Province of Ontario, in connection with any electrical installation or wiring for electric light, heat or power, where the electric pressure delivered to or from the same exceeds 10 volts, manufacturers of, jobbers, agents and dealers in electrical machinery, apparatus, appliances, devices, material and equipment, and others interested are hereby notified that the Commission orders that on and after three months from date of this notice no such electrical machinery, apparatus, appliances, devices, material or equipment used, or to be used, as above, may be used or disposed of in the Province of Ontario unless and until the design and construction of same has been submitted to the Hydro-Electric Power Commission of Ontario, and approval of such has formally been obtained.

By order,

**The Hydro-Electric Power Commission of Ontario**

**W. W. POPE, Secretary**

Toronto, January 1, 1918.

## Dominion Coal Company Limited

—  
“Dominion”

and

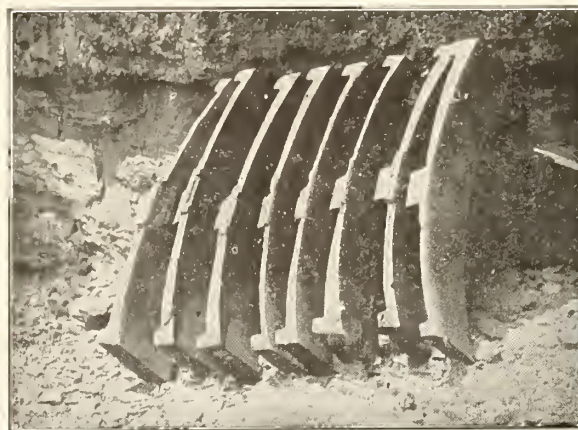
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Steam and Gas Coals

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wear as shown above, before they are scrapped and they wear safely, too. You get your full money's worth in satisfactory service from them always.

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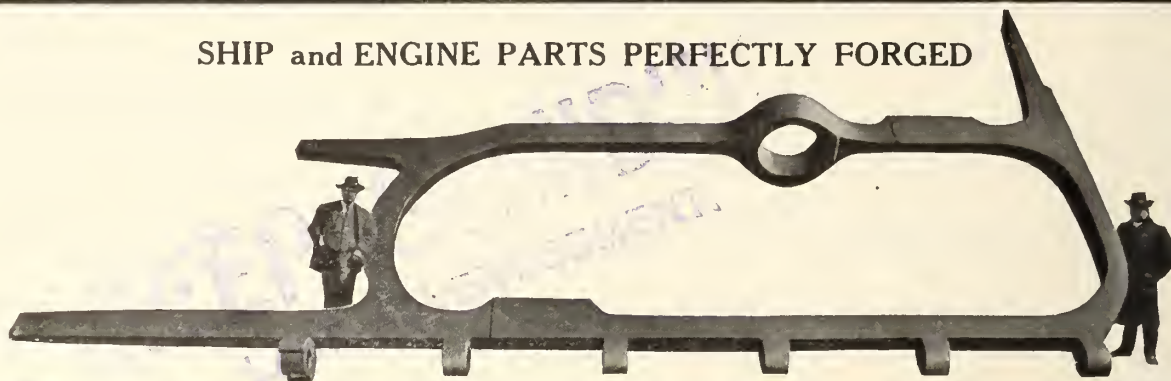
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We manufacture Knutson No. 5 Trolley Retriever, Knutson No. 2 Trolley Retriever, The Ideal Trolley Catcher, The Simplex Trolley Base, The Peerless No. 10 Roller-bearing Trolley Base, The Peerless Check Valve, The Peerless Junior Head Light, The Perfect Head Light, The Hollis Safety Fender, No. 3 Detachable Fender.

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Third Rail Terminal.  
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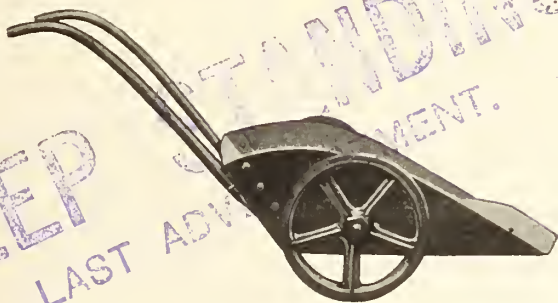


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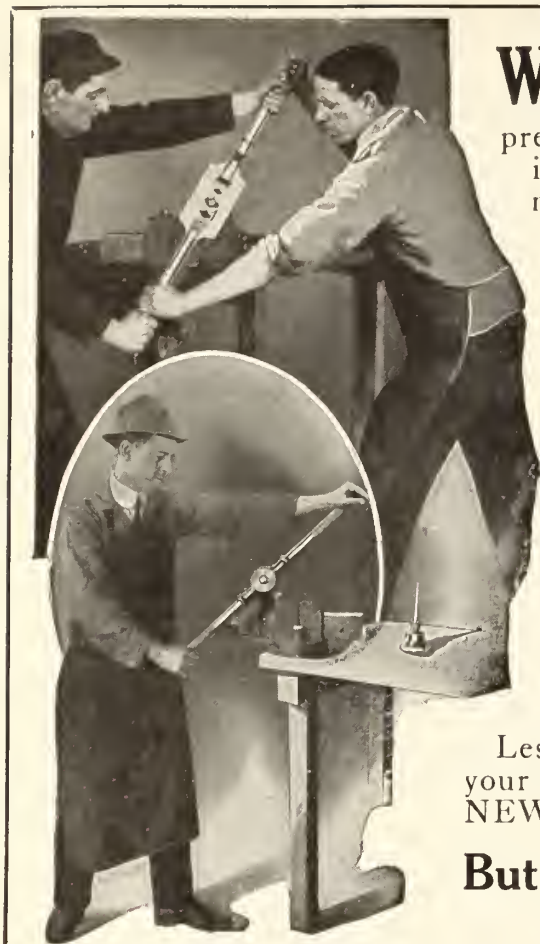
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**STEEL FOR SPRINGS**

B. J. Coghlin Co.

**STEEL FOR TIRES**



# The Canadian Bridge Co., Limited

Walkerville, Ontario

Locomotive  
Turntables  
Roofs  
Steel Buildings

Manufacturers of  
**Railway and Highway  
BRIDGES**

Structural  
Iron Work  
of all  
Descriptions

## Midland Shipbuilding Company, Limited

JAMES WILKINSON, Manager

Builders of STEEL TUGS, SCOWS and DREDGE HULLS

Special Attention Given to all Kinds of Hull Repairing.

Steel and Wood Plant Operated by  
Hydro Electric Power. Always Ready.

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Roofing and Sill Coverings  
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Cork  
Fibre Conduit  
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J-M Manual Slack Take-up  
for Air Brakes  
Steel Car Insulation  
Underground Conduit

Asbestos Cements  
Brake Linings and Asbestos  
Metallic Blocks  
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Mastic Flooring  
Fire Extinguishers  
Vitribestos Stack Lining  
Refrigerator Car Insulation  
Asbestos Fire Felt

THE CANADIAN H. W. JOHNS-MANVILLE CO., LIMITED

TORONTO

MONTREAL

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VANCOUVER



## NICKEL

Shot—High and low carbon.

Ingots—Two sizes, 25 lbs., 50 lbs.

Electrolytic Nickel—99.80 p.c.

Prime Metals for the Manufacture of Nickel Steel, German Silver, Anodes and all remelting purposes. Our Nickel is produced as Rods, Sheets, Strip Stock, Wire and Tubes.

We are SOLE PRODUCERS of this natural stronger-than-steel, non-corrodible alloy. Manufactured forms are Rods, Flats, Castings, Tubes, Sheets, Strip Stock and Wire.

Send Inquiries Direct to Us.

The International Nickel Co., 43 Exchange Place, N.Y.

MONEL  
METAL  
Reg. U.S. Pat. Off.



## JOHN DATE

Manufacturer of

## Diving Apparatus

For Sale or Hire

Brass Founder and Coppersmith

13-15 Concord St., Montreal

## PAGE & JONES,

Ship Brokers and Steamship Agents,

Cable Address: "PAJONES" Mobile.

**MOBILE, ALABAMA, U.S.A.**

All Leading Codes Used.

## Non-Sweating Railway Lamps

We manufacture

SWITCH MARKER CLASSIFICATION SEMAPHORE

to R.S.A. Specification.

**The Hiram L. Piper Company, Limited, Montreal**

Our No. 31 Catalogue illustrates them all.

## The Ottawa Car

Manufacturing Co., Limited

Builders of

Electric Cars, Snow  
Sweepers and Plows

Also

Producers of Brass  
Castings of Every  
Description.

**Slater Street - Ottawa**



**TROLLEY BASES**Ohio Brass Co.  
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Ohio Brass Co.

**TROLLEY RETRIEVERS**

Ohio Brass Co.

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Dominion Iron &amp; Wrecking Co.

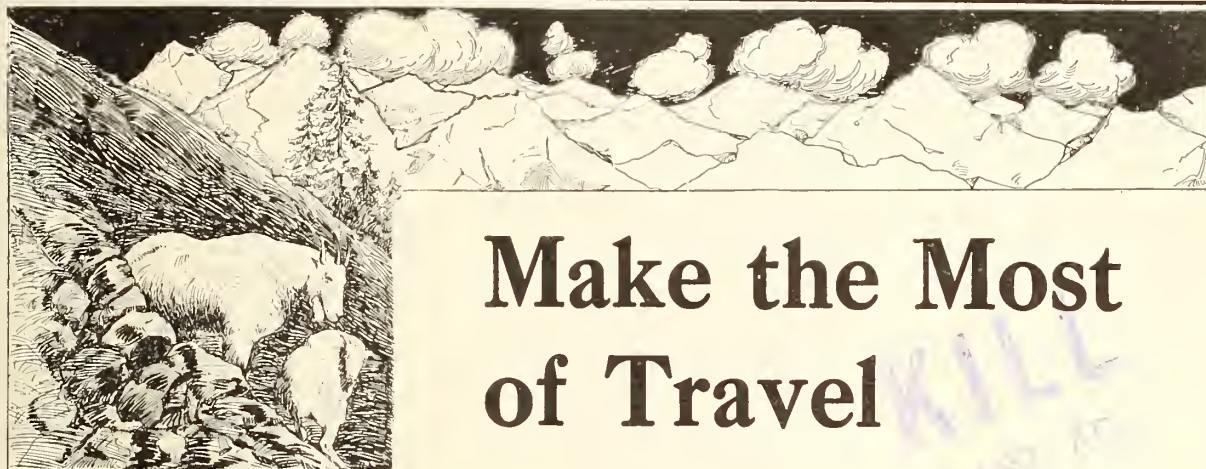
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Canada Foundries &amp; Forgings, Ltd.

Dominion Brakeshoe Co.

**YACHTS**

Polson Iron Works



# Make the Most of Travel

THE passenger to the Pacific Coast is to-day offered a choice of routes that renders it unnecessary to re-trace his steps and opens up a wealth of new scenery and outdoor sport.

Do not fail to visit Jasper and Mount Robson Parks with their wonderful mountains, gorges, glaciers and cataracts.

Here the protection given to game has increased the quantity and reduced the fear of man.

Mountain sheep and goat, the most wary of animals, are seen feeding on the hills, and coming down to the railroad in view of passing trains.

For further particulars see our booklet "The Canadian Northern Rockies," or apply to  
General Passenger Department, Montreal, Quebec; Toronto, Ont.; Winnipeg, Man.

## CANADIAN NORTHERN RAILWAY

### The Imperial Guarantee and Accident Insurance Co. of Canada

Imperial Protection Accident and Sickness Insurance  
Guarantee Bonds Plate Glass and Automobile Insurance  
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Head Office, 44 King St. W., Toronto, Ont.

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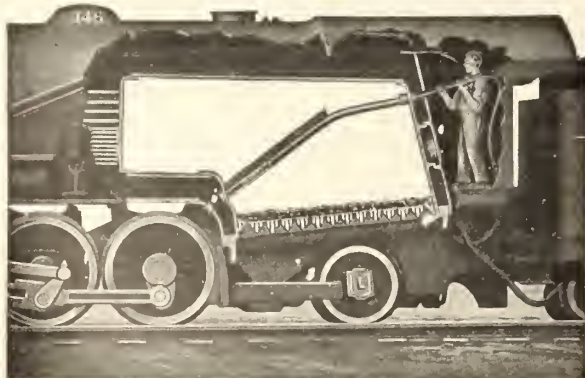


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Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

## Babcock and Wilcox, Limited

HEAD OFFICE FOR CANADA  
ST. HENRY, MONTRÉAL

TORONTO, OFFICE  
TRADERS BANK BUILDING



# Railway & Power Engineering Corporation LIMITED

Canadian Pacific Railway Building, Toronto

*Long Distance Phone, Adelaide 2675*

Equipment and Supplies for Railway, Light,  
Power, Mine and Industrial Plants

*Let Us Quote You on the Following Equipment and Supplies :*

WE REPRESENT :

The Laclede Steel Company  
St. Louis

"Electroheat" Axle and Armature Shaft of all types and sizes. "Electroheat"  
Annealed Side Rods, Main Rods, Crank Pins, Piston Rods.  
All kinds of "Electroheat" Forgings, etc.

Westinghouse Electric & Mfg. Company  
Pittsburg, Pa.

Trolley and Catenary Construction Material.

Bates Expanded Steel Truss Company  
Chicago, Ill.

Steel poles for Railway, Light and Power Purposes.

Railway Track Work Company  
Philadelphia

The Reciprocating Track-Grinder.

Columbia Machine Works & Malleable Iron Co.  
Brooklyn

## CAR EQUIPMENT

Armature and axle bearings  
Armature and field coils  
Bearings (bronze and iron)  
Brush-holders and brush-holder springs  
Brake, door and other handles  
Brake forgings, riggings, etc.  
Car trimmings  
Commutators  
Controller handles  
Forgings of all kinds  
Gear cases (steel or mall. iron)  
Grid resistors  
Third-rail shoe beams and accessories  
Trolley poles (steel) and wheels

## TOOLS

Armature and axle straighteners  
Armature shaft straighteners  
Armature buggies and stands  
Babbiting molds  
Banding and heading machines  
Car hoists  
Car replacers  
Coil taping machines for armature leads.  
Coil winding machines  
Pinion pullers  
Pit jacks  
Signal or target switches  
Tension stands

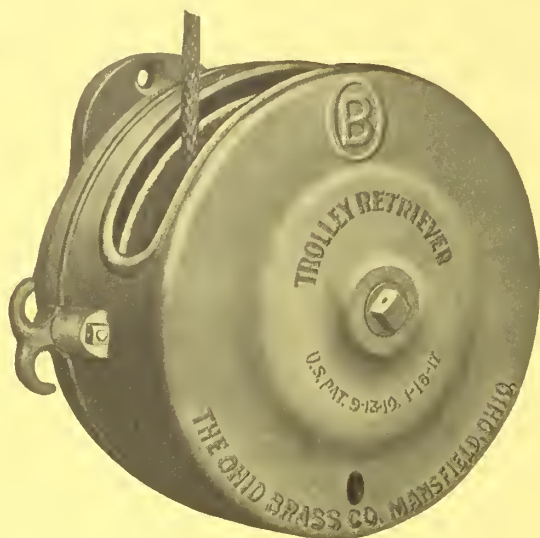
Special Shop Working Tools.

*We also handle Electric Cars and Locomotives of all types and descriptions.*

KEEP THIS LIST BEFORE YOU WHENEVER YOU ARE IN THE MARKET  
FOR SUPPLIES OR EQUIPMENT.

*LIST WILL BE CONTINUED IN NEXT ISSUE*





O-B Trolley Retriever



O-B Trolley Catcher

# Saving the "Overhead"

## On the Line

A "wild" pole can do a great deal of damage to overhead line construction. This danger is minimized however if the cars are equipped with O-B Catchers or O-B Retrievers.

The Catcher is for city service, primarily. It catches the pole when it leaves the wire and holds it safely. It keeps the rope reeled in and prevents it from dangling dangerously.

The retriever is suitable for high-speed service. It catches the pole when it jumps and then pulls it clear down out of harm's way even though the car coasts under several spans.

## In the Shop

O-B Catchers and Retrievers are unfamiliar visitors in the repair shop. Maintenance charges against them are practically nil.

Every part has been made strong and rugged. The mechanism is very simple. This combination of ruggedness and simplicity keeps them on the cars doing their duty day after day.

Particular care has been taken to make them weather-proof. Plenty of rope-room is provided so they will not foul the trolley rope in wet or snowy weather.

Send for a detailed description of their design and operation.

*Ask About a Trial on Your Own Cars*

# The Ohio Brass Company

Mansfield, Ohio



*marked*

# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 241

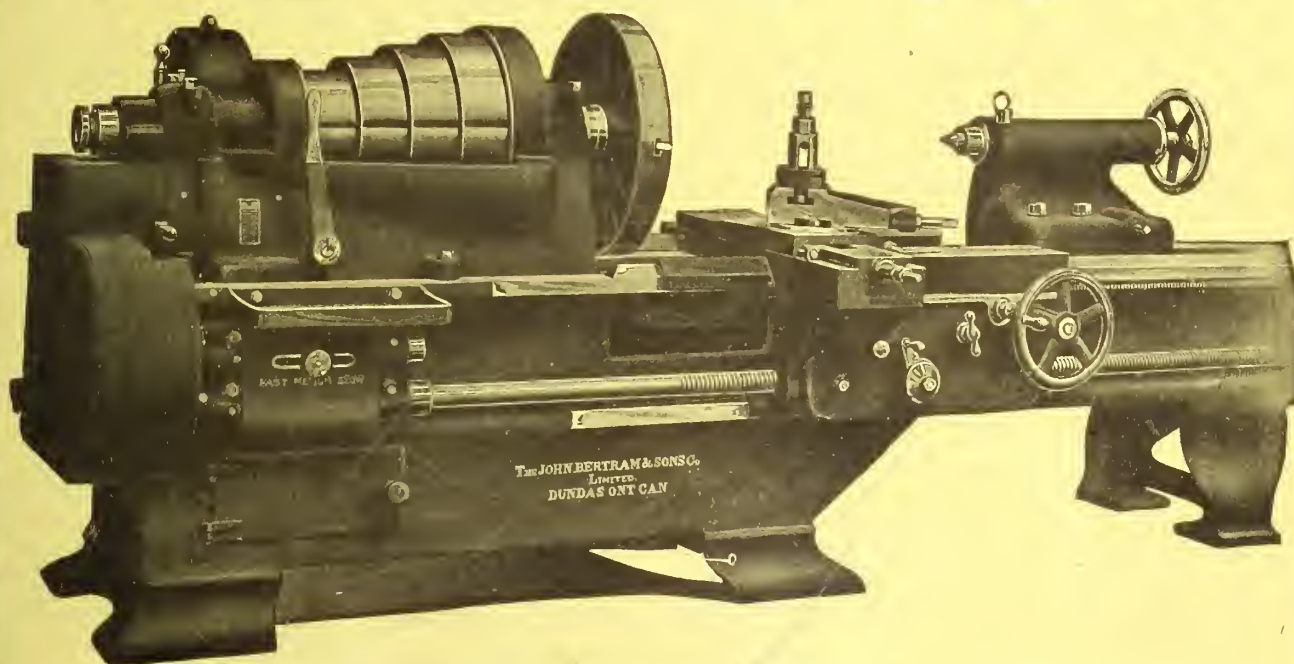
TORONTO, CANADA, MARCH, 1918

Subscription Rates, Page 113



## BERTRAM

### MACHINE TOOLS



### Double Back-Geared Gap Lathe

26-inch x 42-inch Swing

BERTRAM Machine Tools are strictly up-to-date in design. Built to give economical, efficient and long service.

They include General Machine Shop Equipment, Repair Shop Machinery. Locomotive and Car Shop Machinery, Structural and Bridge Shop Machinery.

*Photographs and full particulars upon request.*

## The John Bertram & Sons Company Limited

Dundas, Ontario, Canada

MONTREAL  
723 Drummond Bldg.

TORONTO  
1002 C.P.R. Bldg.

VANCOUVER  
609 Bank of Ottawa Bldg.

WINNIPEG  
1205 McArthur Bldg.



# Westinghouse

## Switchboards for Marine Installations

### Space Occupied Reduced to a Minimum

Some noteworthy features are:

7-inch instruments used throughout. On the left hand panel a special type of knife switch is used, having the handle attached to the switch at the hinge, rather than at the end of the blade.

The copper connections and details on the rear are entirely self-supporting, without the use of supporting brackets, and the connections have been held as closely to the panels as is possible, and at the same time secure necessary clearance between opposite polarities.

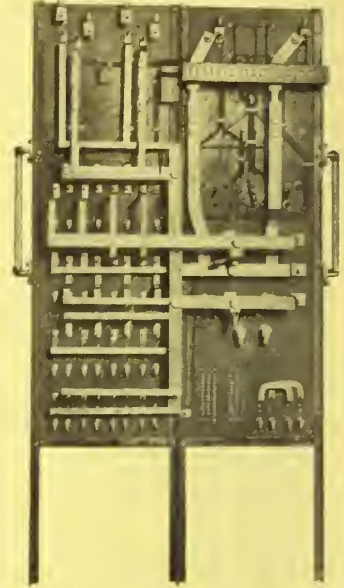
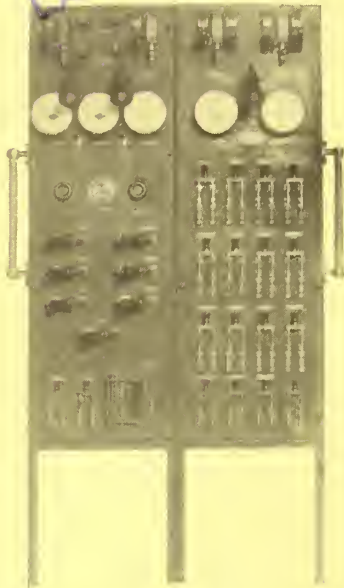
Due to constant motion at sea it is necessary to interpose rubber packing between the angle-iron frame work and the rear of the panels, and also to support the panels on a cross member of angle iron to relieve the mounting bolts of the weight of the panels.

The panels are composed of "Ebony Asbestos," which is stronger than slate and has higher fire resistance qualities.

We are ready to handle marine work of every kind—Ask our nearest office.

**Canadian Westinghouse Company, Limited, Hamilton, Ontario**

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT. WILLIAM, Cuthbertson Bldg. WINNIPEG, 158 Portage Ave. E. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bldg.



ESTABLISHED 1860

Sole Canadian Rights  
to Manufacture the  
"HYDE"

Anchor-  
Windlasses

Steering-  
Engines

Cargo-  
Winches

Which have stood the  
test of 50 YEARS



**PROPELLER  
WHEELS**

Largest Stock in  
Canada

**STEEL  
CASTINGS**

Cut Shows Largest Solid Propeller Ever Made in Canada.

Manufactured by

**The WM. KENNEDY & SONS, Ltd., Owen Sound, Ont.**



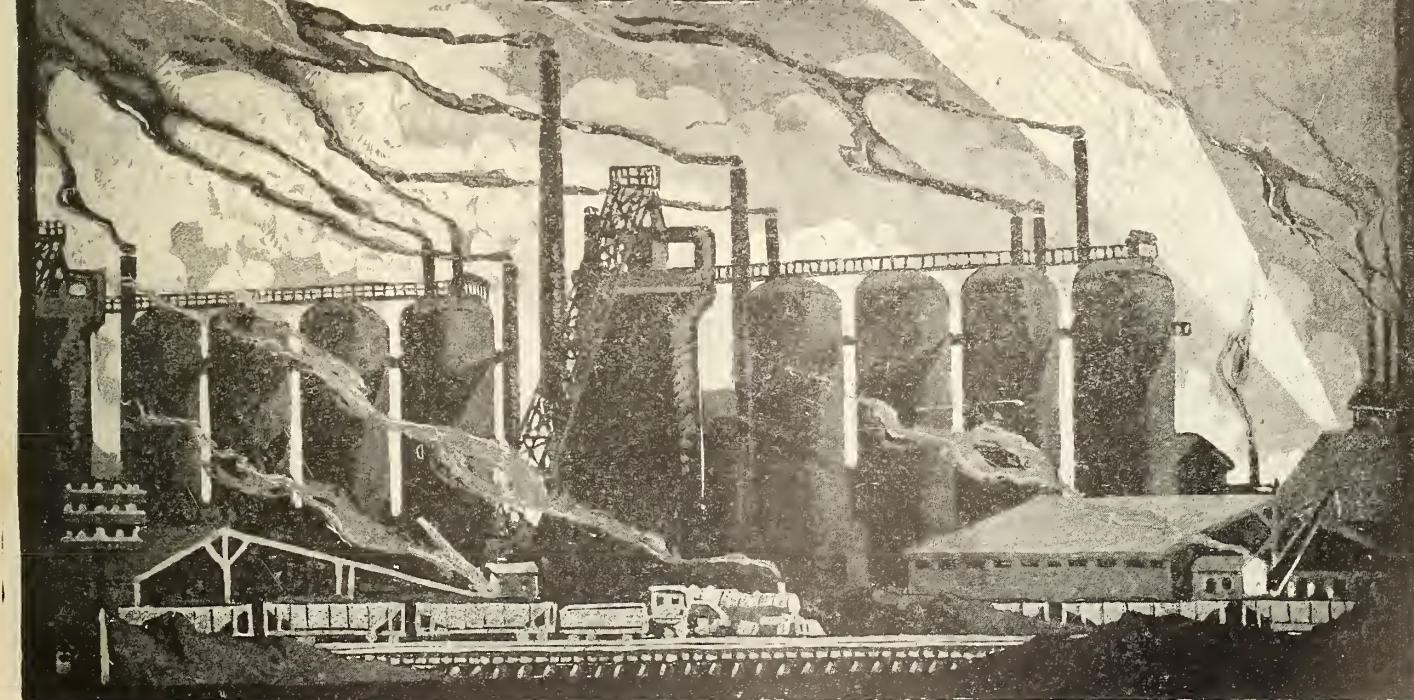
**Quality**

**Service**

## PRODUCTS

"Hamilton" Pig Iron  
Open Hearth Steel Billets  
Steel and Iron Bars  
Forgings  
Railway Fastenings  
Pole Line Hardware  
Bolts, Nuts and Washers  
Wrought Pipe  
Screws, Wire  
and  
Wire Products  
of every description

# THE STEEL COMPANY OF CANADA LIMITED HAMILTON MONTREAL







## Coal Handling Machinery

To handle coal rapidly and at a low cost is the aim of operators, dealers, railroads, and dock and vessel men. And in some cases the breakage must be considered. The type of machine to use depends upon the requirements and conditions, but it is very important that good machines be used, otherwise there will be trouble and delays.

Brownhoist Coal Handling Machinery consists of various types and sizes, two of which are shown here. The upper view shows 3 large bridge cranes on the docks at Duluth, Minn. Each bridge is equipped with a  $5\frac{1}{2}$ -ton Brownhoist Bucket and handles 250 to 350 tons per hour from boat to storage, including clean-up; and 500 to 600 tons per hour from storage to railroad cars. The lower view shows 2 Brownhoist Locomotive Cranes, steam operated. Each crane is equipped with a  $1\frac{1}{2}$ -ton Brownhoist Bucket and handles 80 to 100 tons per hour from pile to cars and unloads from car 55 to 70 tons per hour.

Brownhoist Coal Handling Machinery has been used for 38 years and can be found in many parts of the world. These many years' records prove them to be fast, safe and durable. You can depend upon them. Brownhoist Equipment may cost more but it is worth it.

### The Brown Hoisting Machinery Company Cleveland, Ohio, U. S. A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, Etc.,  
as well as Smaller Cranes and Hoists.

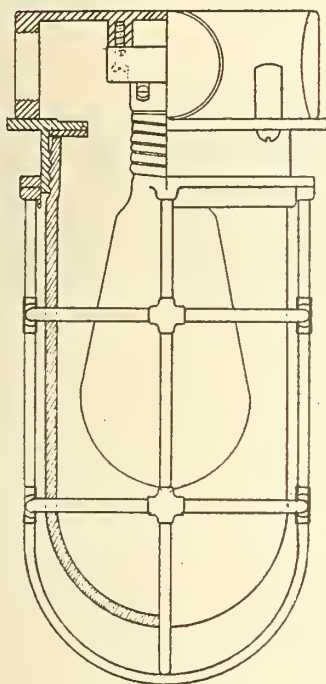
Branch Offices in New York, Pittsburgh, Chicago, San Francisco, and  
(Portland, Ore., Colby Eng'r. Co.).



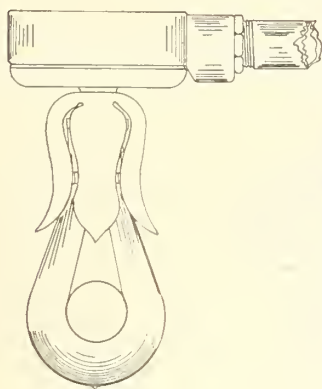


# MARINE

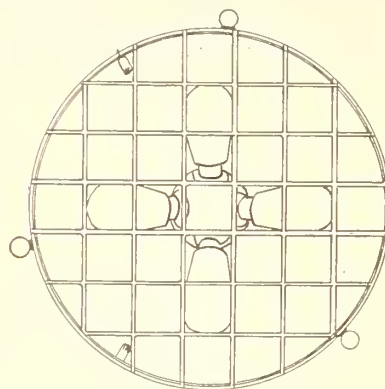
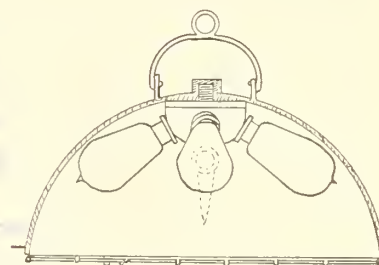
## Electrical Fixtures and Fittings



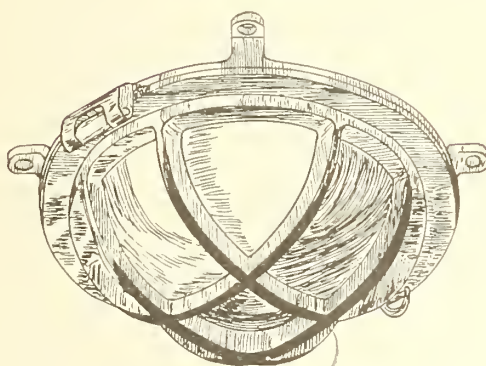
Watertight Pendant



Cabin Pendant



Cargo Cluster



Watertight Deck Fixture

High grade, strongly constructed Marine Fixtures and Fittings furnished in various types including Watertight Lighting Fixtures.

☛ A few of our standard lighting fixtures are illustrated herewith.

☛ Let us quote you on your requirements for Electrical Marine work. If you require special fixtures and devices send drawing or sketch and we will gladly quote on same.

*Address nearest house for quotations and information.*

***Northern Electric Company***  
LIMITED

Montreal  
Halifax  
Ottawa

Toronto  
London  
Winnipeg

Regina  
Calgary  
Vancouver





# Six

**KILL**  
LAST AD.

## Years of History and Service

In November, 1911, Canuck Supply Co., Limited, was organized with nothing but Anchor Steam and Hydraulic Packings to sell. Our record of service and our reputation for quality have been slowly building up a business with the strength of Gibraltar — built to last. Here are some of our present lines:

### MECHANICAL DEVICES

Baker Locomotive Valve Gear  
American Security Arch  
O'Malley-Beare Multiplate Valves  
Hunt-Spiller Gun Iron  
King Metallic Packing  
Henry Grease Cup  
United States Marine Packing

### SUPPLIES

Forster Locomotive Cement  
Simplex Car Cleaner  
Anchor Packings  
Canuck Front End Paint  
Brubaker Taps and Reamers  
Glidden Finishing Materials  
  
HOUGHTON LINES  
Vim Belting and Packings  
Oils, Greases and Case Hardeners

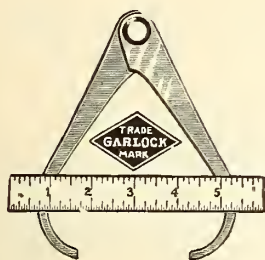
Ask for "The Houghton Line"  
(Free on Request)

## Canuck Supply Co., Limited

TORONTO MONTREAL WINNIPEG

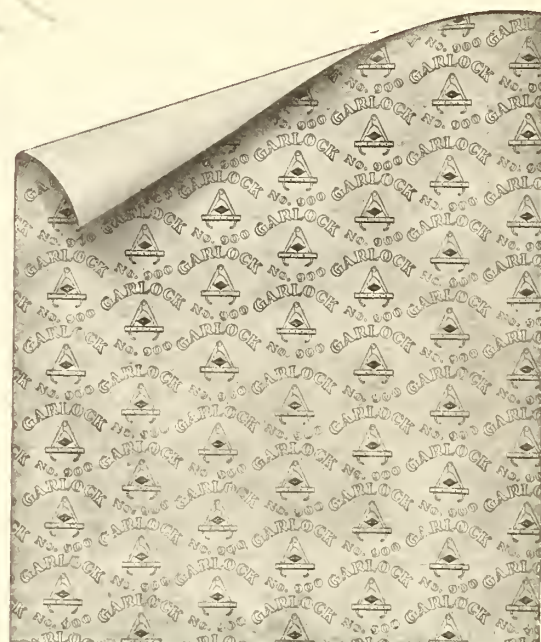






# GARLOCK

## NINE HUNDRED SHEET



Is unsurpassed for superheated steam joints,  
 It is equally well adapted to air, acids, ammonia,  
 Or any severe condition where sheet packing is required.  
 It is made of the highest quality of long fibre asbestos,  
 And is built up into sheet form under tremendous pressure,  
 Thus securing great toughness, flexibility and tensile strength.  
 It is not affected by extremely high pressures and temperatures,  
 And does not require following up after gaskets have been applied.  
 Joints can be opened as often as desired without injury to gaskets.  
 This sheet is furnished in all thicknesses from 1-64 to  $\frac{1}{4}$  inch.  
 Gaskets of all shapes and sizes can be cut by us from Nine Hundred Sheet.

KILL  
LAST AD.

### The Garlock Packing Company, Hamilton, Ontario

#### BRANCHES :

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# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg.,  
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Sole manufacturers of the celebrated GALENA COACH,  
ENGINE and CAR OILS, and PERFECTION VALVE  
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five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organi-  
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**STREET RAILWAY LUBRICATION  
A SPECIALTY**

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**Galena Railway Safety Oil**

in Headlights, Marker and Classification Lamps, to secure Effi-  
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**Galena Long Time Burner Oil**

for use in Switch and Semaphore Lamps, and all lamps for long  
time burning, to avoid smoked and cracked chimneys and  
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Tests and Correspondence Solicited.



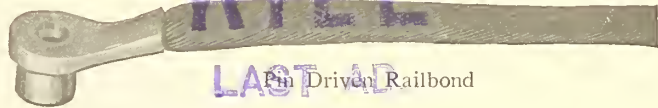
# Modern Electric Haulage Supplies



Compressed Terminal Bond on Rail



Drive this pin with an ordinary hammer.  
No other tools are required.

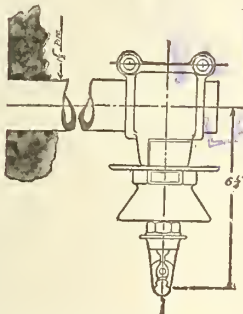


Pin Driven Railbond

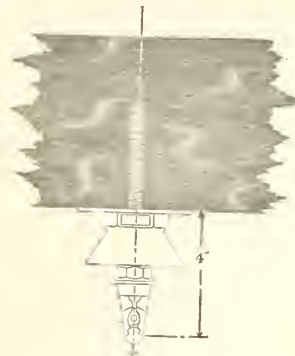
## Use C-G-E Compressed Terminal or Pin Driven Railbonds—

Though not generally appreciated in everyday practice, it is important that the rail return of the circuit supplying current to the locomotive be of a resistance at least as low as that of the trolley wire.

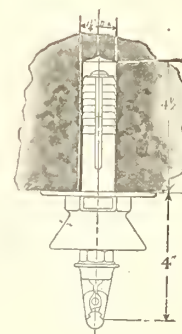
With C-G-E pin driven or compressed terminal bonds it is readily possible to secure that intimate contact between bond and rail necessary to low joint resistance. A well bonded return circuit means economy of operation through lessening of track losses.



On Horizontal Pipe



On Timber



In Top

## Standardize on the Form H Low Combination Suspension—

In combination with expansion bolt, lag screw or pipe clamp, this hanger can be used *anywhere* in or about the mine.

The Form M clamping ear requires but a few turns of the hexagonal clamping nut to fasten on suspension and trolley wire.

**C-G-E Railbonds and Line Material are the standard of quality.**

# CANADIAN GENERAL ELECTRIC CO. LIMITED

Head Office: Toronto. Sales Offices: Montreal, Halifax, Sydney, Ottawa, Cobalt, South Porcupine, London, Winnipeg, Calgary, Edmonton, Nelson and Vancouver.



# INTERNATIONAL

## STEEL CROSSING FOUNDATIONS

### Eliminate 75 of maintenance—Prolong life of crossing frogs

They provide smooth running over crossings, practically eliminate bolt breakage, prevent rail creepage, have larger tamping area than wooden ties and simplify crossing maintenance.

We shall be pleased to send you our new catalog and to answer all inquiries relative to the application of International Steel Crossing Foundations to your crossings.

**PROMPT DELIVERIES MADE FROM STOCK.**



### Provides 100% efficiency—Gives balanced riding equality

These foundations are constructed of steel box girders reinforced within by closely fitting yellow pine blocks previously subjected to an 8-lb. treatment of Grade 1 Creosote Oil. All voids are then filled with pitch and the bottom plates riveted on. The pitch and creosote prolong the life of the blocks and the interior of the steel girders indefinitely. The blocks not only serve as fillers, but they aid in transferring the track loads directly to the ballast. The girders are built strong enough to sustain the heaviest locomotives over a span of 6 feet unsupported by the ballast, without affecting smooth running over the crossing.

## The International Steel Tie Company

Manufacturers of Steel Twin Ties and Crossing Foundations

General Sales Office and Works: Cleveland, Ohio





# PRODUCTS



O-B Extruded Trolley Ear.

## O-B Extruded Ears For Long Life



On Round Wire  
generous amount  
of metal in lips.



On Grooved Wire  
perfect wheel  
clearance.



On Figure 8 Wire  
perfect wheel  
clearance.

Long life is actually squeezed into Extruded Ears in their manufacture.

Forced through a die under great pressure, extruded metal is extremely dense and absolutely uniform. These qualities imparted to a specially selected alloy make it ideal for the runner pieces of trolley ears.

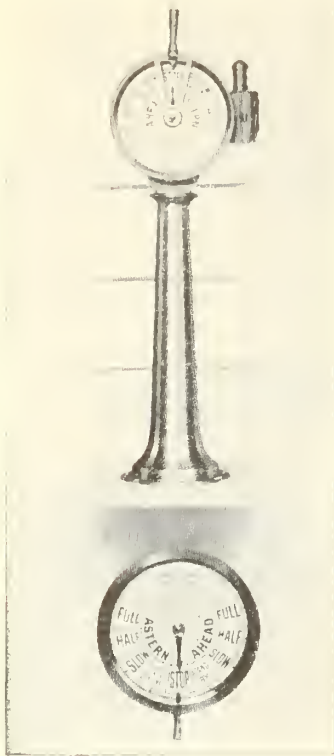
A malleable iron boss is fastened securely. It is O-B sherardized.

A few O-B Extruded Ears show their superiority when installed on the same line with other ears.

O-B Engineers will gladly help solve your intricate overhead problems. They are familiar with construction on nearly all the lines of the country and are experienced in adapting standard materials to special conditions.

**The Ohio Brass Company**  
Mansfield, Ohio



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Telegraphs for Engine, Twin  
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Engine Counters

Chadburn's (Ship) Telegraph Co'y, Ltd.  
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*Sole Canadian Agents*

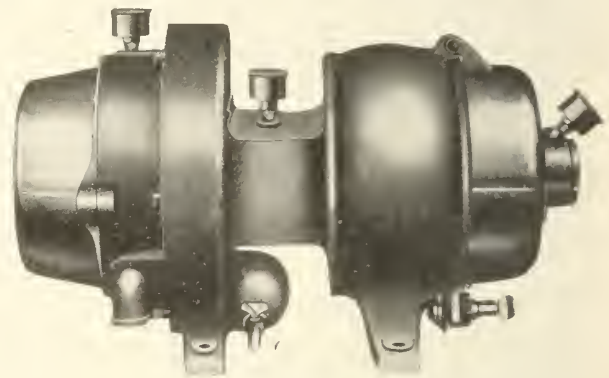
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*Made in Canada*

An Incandescent Headlight that complies with every railroad requirement in every province of Canada. A headlight that has proved efficient and economical.

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Manufacturers of Railway and Marine Specialties

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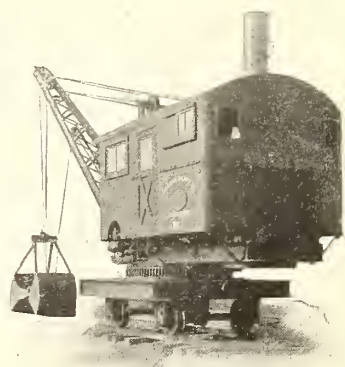
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# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

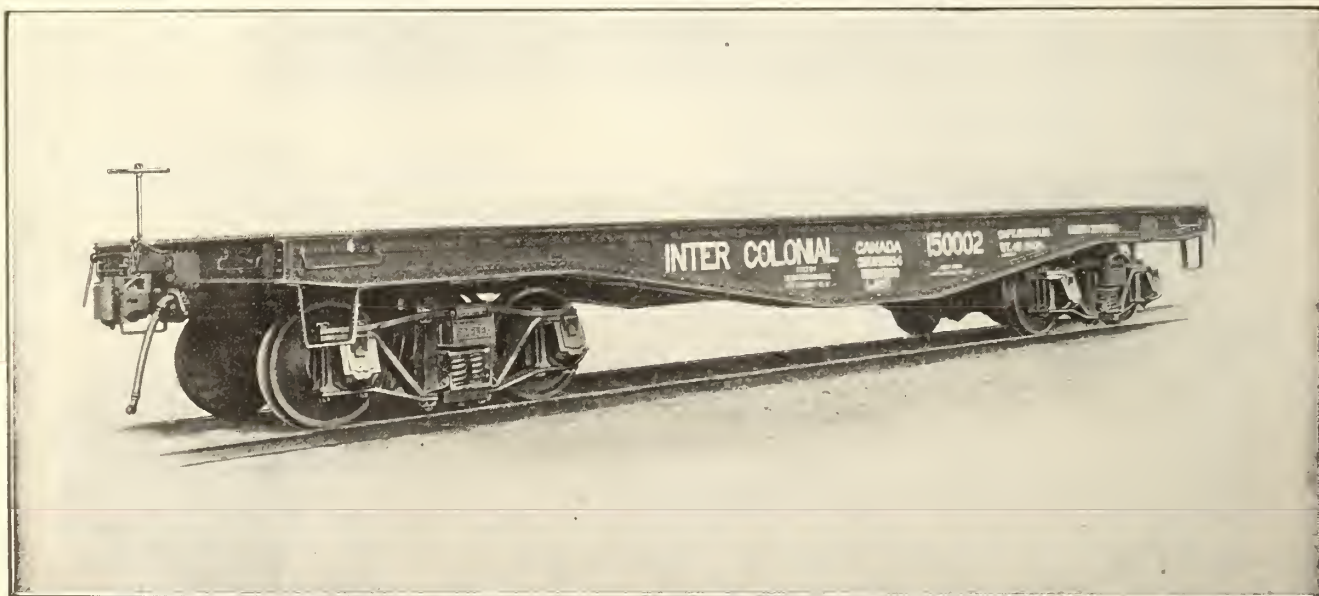
Also can supply forgings of all shapes and sizes made of ordinary or "Harvet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

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75 Ton Special Pit Car For Canadian Government Railways.

## FLAT CARS, CABOOSES AND MINE CARS

We make a specialty of Flat Cars, Caboose and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

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**First**—In decreased coal consumption.

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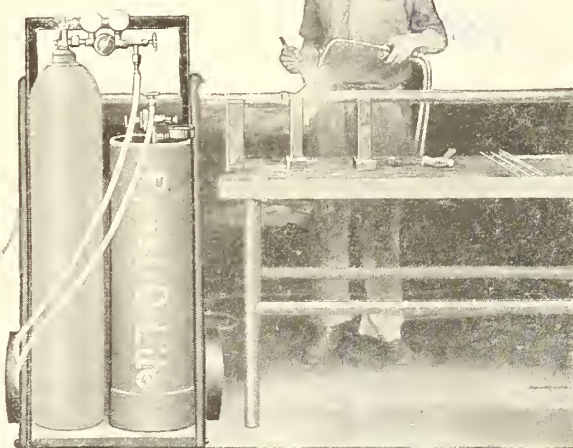
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**PROCESS**

employs both gases (acetylene and oxygen) in portable cylinders. Prest-O-Lite Dissolved Acetylene is backed by Prest-O-Lite Service, which insures prompt exchange of full cylinders for empty ones. Provides dry, purified gas, insuring better welds, quicker work and lower operating cost.

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This welding repair on broken crank shaft saved an expensive tie-up, at a cost of 50c.



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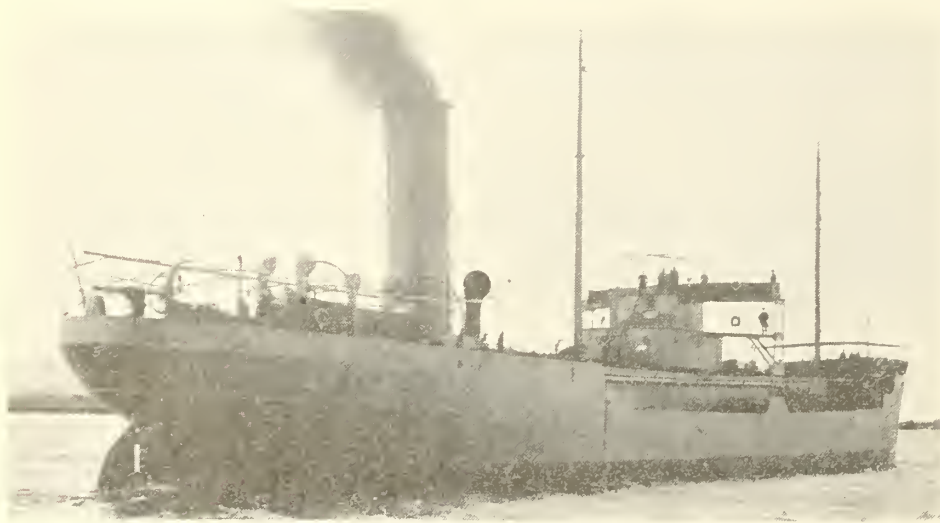


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**4 HOISTING ENGINES**

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Different shapes and depths are made according to the work for which the file is intended.

Consequently you can get a "Famous Five" file that will cut fastest and leave the best surface on any kind of material.

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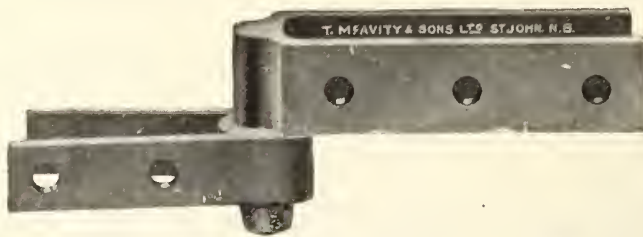


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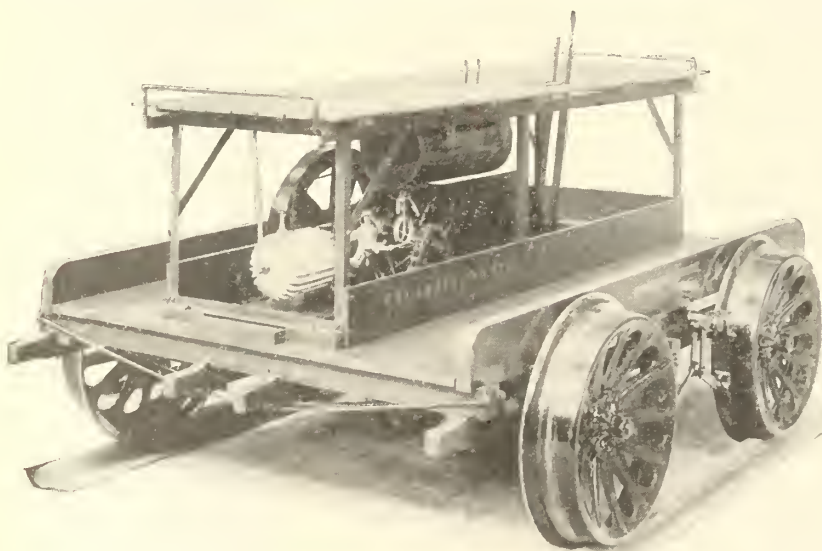
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For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

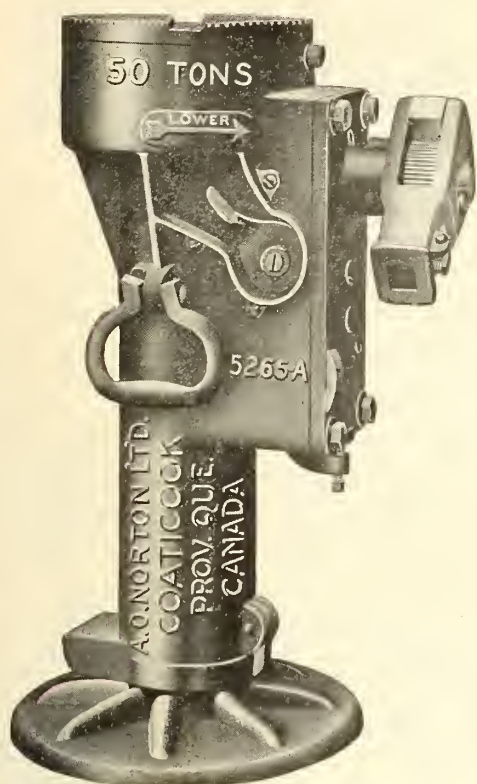
Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

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KALAMAZOO, MICH., U.S.A.





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For all Classes of Service

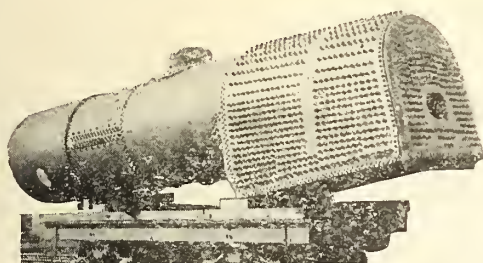
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In Stock for Immediate Shipment.

*Send for Illustrated Catalogue No. 29.*

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## It is an Established Fact

That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

The Flexibility in the bolt serves to accommodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefulness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintenance.

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An "IMPERIAL" Compressor Car and two "IMPERIAL" Tie Tampers at work.

"IMPERIAL" Compressor Cars are self propelled, and can be used to supply air for many other purposes than tie tamping, such as drilling, grinding, riveting, chipping, pumping, hoisting, etc.

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tamp any kind of ballast.

Do the work uniformly.

Will reach places you cannot get at with picks and bars.

Do not crush nor scatter the ballast.

Will not injure the ties.

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Save labor — two men with "IMPERIAL" Tampers will tamp more track than eight men with picks or bars.

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## HACK SAW BLADES

As HACK SAW BLADES are used in all machine and metal-working shops, why not use the "STERLING". You can find none better than the "STERLING". Tell us your troubles and requirements. We can help and satisfy you.

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There is only one reason for this, and that is that Thermit produces results and we all know that "results count."

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All Thermit and Thermit appliances are made in our Canadian shops.

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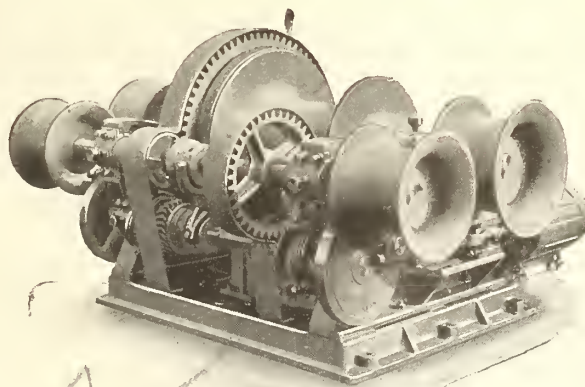
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on a larger con-  
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7 x 12 Standard D. C. Double Purchase Cargo Winch

We have a few winches exactly like above, which can be spared for immediate shipment.

*Let Us Have Your Inquiries. We Can Interest You.*

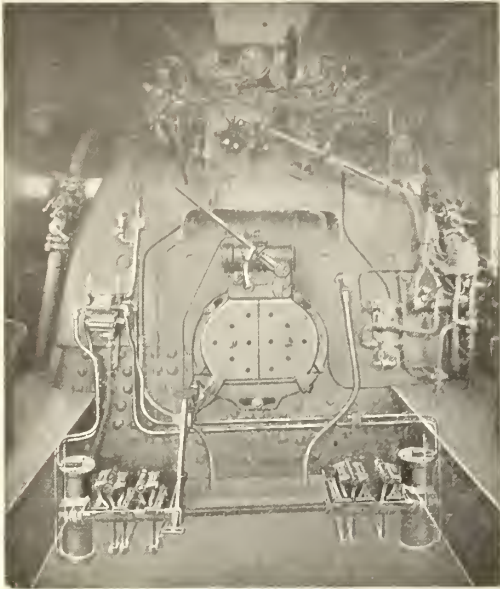
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Can you put a punch in car movements with engines held up by cumulative ash pit delays?

Absolutely NO!

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Shoot the engines over the ashpit and back on the road to move cars.


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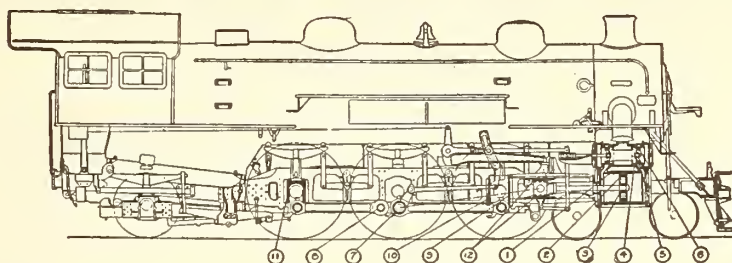
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The locomotive being purchased to-day shows an increase in tractive force of approximately 33% over the locomotive it will supersede.

The efficiency of each individual part must, therefore, be proportionately increased.

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*Made Only By*

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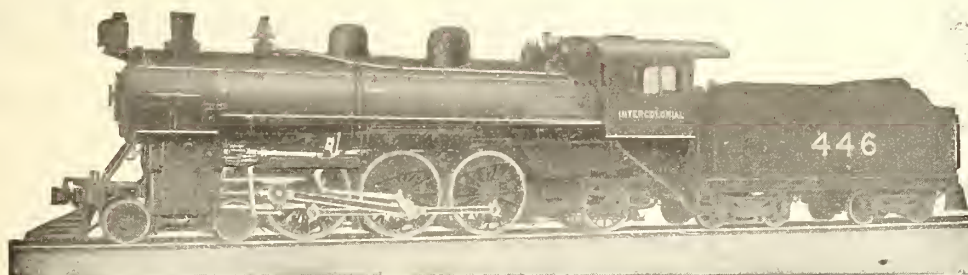
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Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

## Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA



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ASSOCIATED WITH

YARROW & CO. Ltd., GLASGOW

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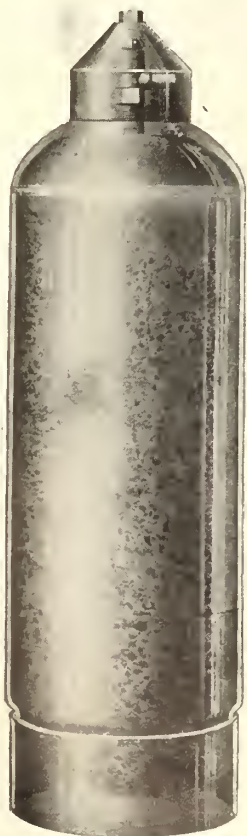
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MARINE RAILWAY, CAPACITY 2500 TONS DEAD WEIGHT

LARGER VESSELS DOCKED IN GRAVING DOCK, 480 FT. x 65 FT.

LOWEST RATES ON PACIFIC COAST



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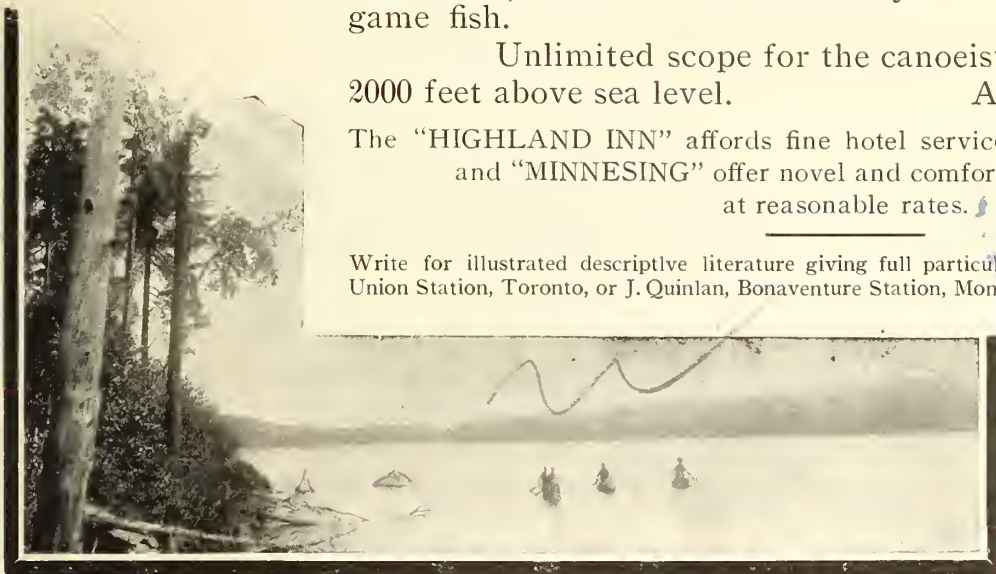
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**Depth Moulded  
28 ft. 2 in.**



# NOTICE

Pursuant to Power Commission Act, 6 Geo. V, Chapter 19, Section 39, 1916, and amendments thereto, and the Rules and Regulations of the Hydro-Electric Power Commission covering the design and construction of electrical machinery, apparatus, appliances, devices, material and equipment for use in the generation, transmission, distribution or use of electric power or energy in the Province of Ontario, in connection with any electrical installation or wiring for electric light, heat or power, where the electric pressure delivered to or from the same exceeds 10 volts, manufacturers of, jobbers, agents and dealers in electrical machinery, apparatus, appliances, devices, material and equipment, and others interested are hereby notified that the Commission orders that on and after three months from date of this notice no such electrical machinery, apparatus, appliances, devices, material or equipment used, or to be used, as above, may be used or disposed of in the Province of Ontario unless and until the design and construction of same has been submitted to the Hydro-Electric Power Commission of Ontario, and approval of such has formally been obtained.

By order,

**The Hydro-Electric Power Commission of Ontario**

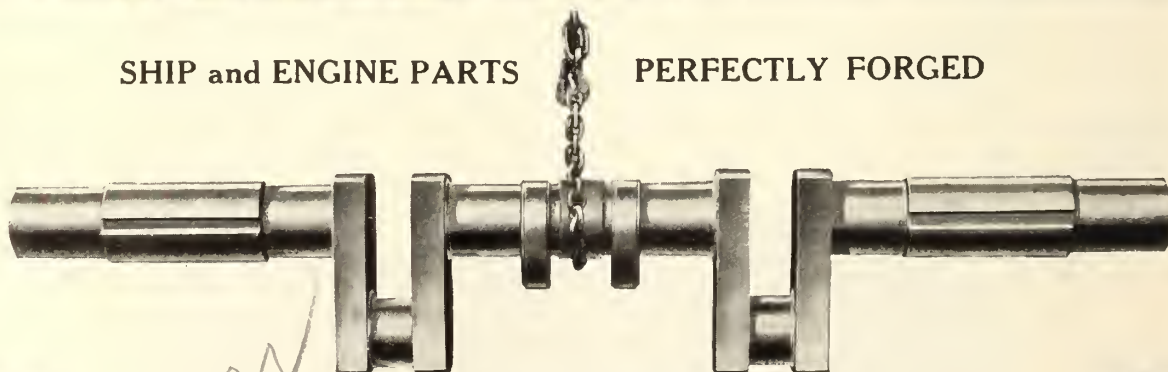
Toronto, January 1, 1918.

**W. W. POPE, Secretary**

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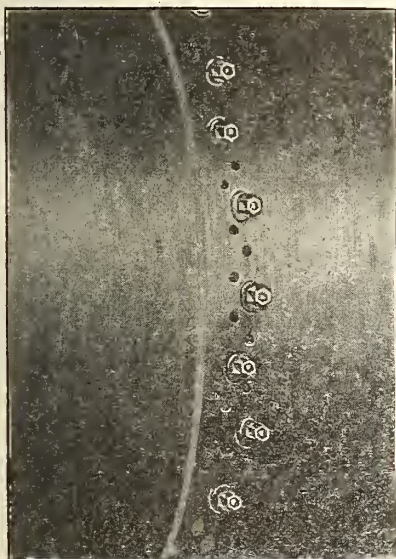
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# Dominion Rubber System Pension Fund



*Details of Pension Plan adopted by  
Canadian Consolidated Rubber Co.  
Limited, for its employees.*



**1. NAME** The name of the plan is Canadian Consolidated Rubber Co. Limited Pension Plan.

**2. OBJECT** After careful consideration of the subject and an examination of existing pension systems, the Company has adopted the following plan as the most liberal for employees who, by long and faithful service, have earned an honourable retirement.

**3. DEFINITIONS** a. In these regulations the word "Company" shall mean the Canadian Consolidated Rubber Co. Limited, or its successors.

b. "President" and "Board of Directors" shall mean the President and Board of Directors of the Company.

c. The word "Committee" shall mean the persons appointed by the Board of Directors to administer the Pension Plan in accordance with approved regulations.

d. The word "employees" shall mean those persons who receive a regular and stated compensation from the Company, other than a pension or a retainer.

e. The expression "term of employment" shall mean period of continuous employment in the service of the Company, or any company or companies subsidiary thereto, allied with, or predecessors of the Company, and shall include such employment whether commenced prior to the adoption of this plan or not.

f. The expression "continuous employment" shall mean service with the Company continuously without a break of any kind, except as due to leave of absence, sickness, injury, or necessary temporary lay-off on account of reduction of force or for any other reason, all such cases to be subject to the discretion of the Company; but when such absence exceeds six months in any twelve consecutive months it shall be deducted in computing the length of service. In any other case than such mentioned, if a person is re-employed after such a break in the continuity of this service, for the purposes of this pension plan he shall be considered as a new employee.

**4. PENSION COMMITTEE** a. There shall be a committee of not less than five nor more than seven, appointed by the Board of Directors to serve during its pleasure, which shall be called the Pension Committee. This Committee shall be charged with the administration of this plan.

b. The Committee shall have the specific powers elsewhere herein granted to it, or that may be granted to it from time to time by the Board of Directors. Exceptions to or deviations from the regulations so laid down shall in all cases be subject to the approval of the Executive Committee of the Board of Directors of the Company.

c. It shall determine conclusively for all parties all questions arising in the administration of this plan.

d. It shall adopt such by-laws and rules of procedure as it may find necessary, subject to the approval of the Board of Directors.

e. It shall be empowered to employ a secretary and such other assistants as may be required in the administration of the plan.

**5. PENSION FUND** The Company shall appropriate such sums of money from time to time as may be necessary in administering this plan, and no contributions will be required, or received from any employees of the Company.

**6. ELIGIBILITY** a. All employees of the Company engaged in any capacity whatsoever, and wherever located, are eligible to a pension as hereinafter stated.

b. All male employees who have reached the age of sixty-five years and whose term of employment has been twenty years or more, and all female employees who have reached the age of sixty and whose term of employment has been twenty years or more, may with the approval of the Pension Committee retire from active service, if they so desire and become eligible for pensions.

c. All male employees who have reached the age of sixty years and whose term of employment has been twenty years or more, and all female employees who have reached the age of fifty-five and whose term of employment has been twenty years or more, may at the discretion of the Pension Committee be retired from active service, and become eligible for pensions.

**7. DISABILITY PENSIONS** At the discretion of the Committee and with the approval of the Board of Directors, any employee who has become totally disabled as a result of sickness or injury, compensation for which may not otherwise have been provided, and whose term of employment has been fifteen years or more, may be retired from active service and granted a pension. If a pension is granted it shall be for such period as the Committee may determine, and if at any time during such period the employee recovers sufficiently to resume active service, the pension may be discontinued by action of the Committee. If the employee re-enters the service of the Company at the time such pension is discontinued he shall be eligible to a pension under these regulations, and the period of absence on disability pension shall be considered as a leave of absence and not a break in the continuity of the employee's service.

**8. AMOUNT OF PENSIONS** a. The annual amount of such pensions shall equal one per cent. of the average yearly wage for the ten years prior to retirement, multiplied by the number of years employed, but such pensions shall not be more than \$5,000.00 per year, nor less than \$240.00 per year.

For example, if an employee's average annual wage for ten years is \$1,000.00 and he has been in the service for thirty years, he would receive 1% of \$1,000.00 or \$10.00 multiplied by thirty, or \$300.00 per year or \$25.00 per month.

b. In case of special difficulty in determining with practical accuracy the average yearly wage for the ten years prior to retirement, the Committee may at its discretion take some smaller consecutive number of years for the purpose of determining a fair average yearly wage.

**9. PAYMENT** Pensions shall be paid to the pensioner personally on the first of each month from the date of retirement until the death of the employee, unless suspended for such reasons as are described in this

plan, and in case a male pensioned employee at the time of death is survived by a widow, or if either male or female pensioned employee is survived by minor children, the pensions shall be continued for three months after death, payable to the widow in the first instance and to the administrator or other legal representative of the minor children in the second case, to be applied as in the case of other property of the deceased, in the interest of the minor children.

**10. GENERAL PROVISIONS** a. Neither the action of the Board of Directors in establishing this Pension Plan or any action hereafter taken by the Board of Directors or the Pension Committee shall be construed as giving any officer or employee or agent of the Company the right of service, or any right to a pension; and the Company expressly reserves its right and privilege to discharge at any time any officer, employee or agent when the interests of the Company, in its judgment, may so require, without liability for any claim for a pension or other allowance other than salary or wages due and unpaid.

b. The Board of Directors may annul, alter, add to or amend in any way any and all of the provisions contained in this plan, or hereafter adopted by the Board of Directors in respect of this plan, and may at any time set aside any action taken by the Pension Committee.

c. The Company guarantees that, once a pension has accrued to a particular employee, it will continue such pension for the life of the particular employee and as specified with reference to widows and minor children; subject, however, to the provisions and conditions of the regulations laid down by the Board of Directors or the Pension Committee. It is understood that Section 10b given above shall not affect such guaranty.

d. Assignment of pensions under this plan will not be permitted or recognized.

e. Pensions may be suspended or terminated in the discretion of the Committee in cases of gross misconduct or of any conduct prejudicial to the interests of the Company.

f. Any retired employee may, by first obtaining the approval of the Committee, engage in any occupation or work which is not prejudicial to the interests of the Company. If any retired employee shall engage in any thing which in the judgment of the Committee is prejudicial to the interests of the Company, the payment of a pension to such retired employee may be suspended or discontinued.

g. Regular employment with this Company shall suspend the right of a retired employee to pension payment during the period he continues in such employment.

h. In case any pension shall be payable under the laws now in force, or hereafter enacted, of the Dominion of Canada or any Province thereof or any State or Country, to any employee of the Company under such laws, the excess only, if any, of the amount prescribed in this plan above the amount of such pension prescribed by law, shall be the pension payable under this plan.

**11. TIME TO TAKE EFFECT** This plan shall take effect January 1st, 1918.

## Canadian Consolidated Rubber Co. Limited

Head Offices - - MONTREAL

FACTORIES AT MONTREAL, GRANBY, QUE., ST. JEROME, QUE., KITCHENER, ONT., ELMIRA, ONT., PT. DALHOUSIE, ONT.,  
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BRANTFORD, LONDON, KITCHENER, NORTH BAY, FORT WILLIAM, WINNIPEG, REGINA,  
SASKATOON, EDMONTON, CALGARY, LETHBRIDGE, VANCOUVER, VICTORIA.



# Canadian Railway and Marine World

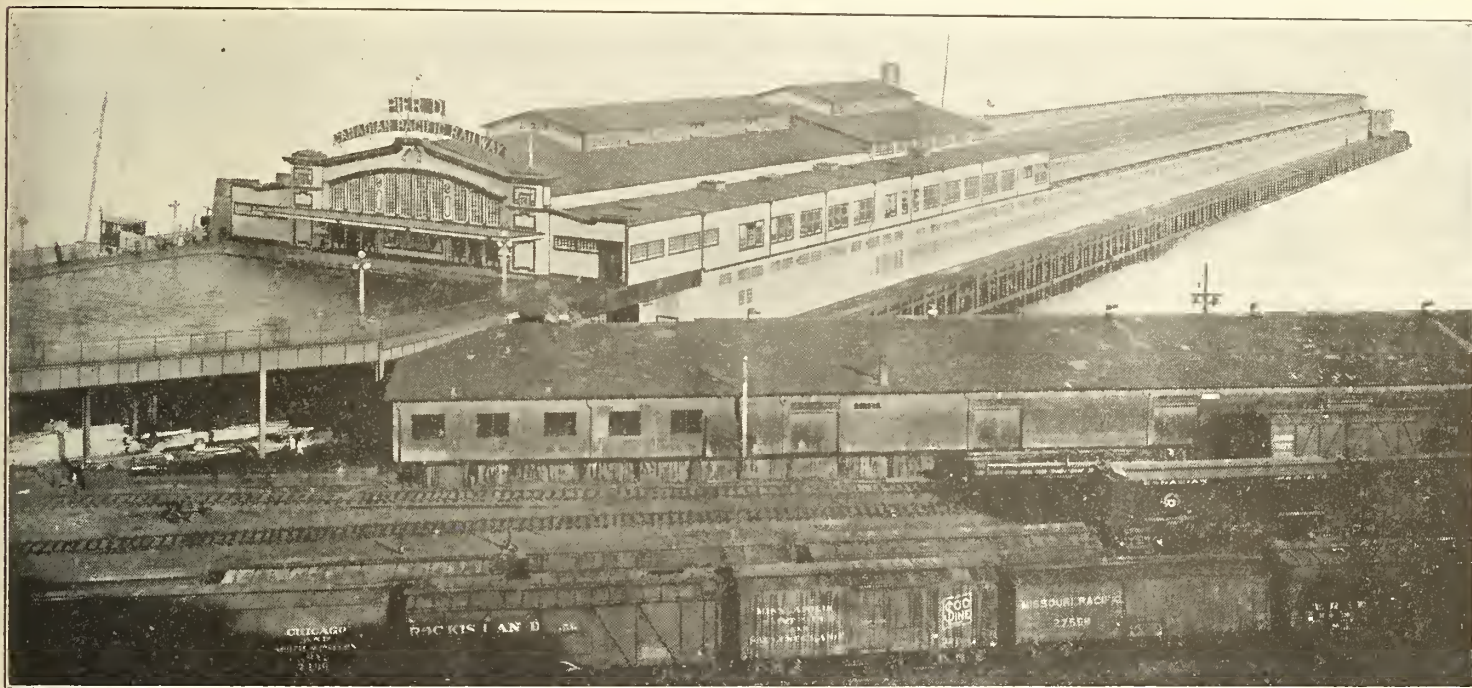
March, 1918.

## The Extension of the Canadian Pacific Railway's Pier D at Vancouver.

The C.P.R. has had completed recently an extension to one of its piers at Vancouver, which makes the new pier one of the largest structures of the kind on the Pacific Coast. The extension was made necessary by the steady growth of coastwise and trans-Pacific traffic. The pier, which is known as Pier D, is located on Burrard Inlet at the foot of Granville St. It is a creosoted pile structure, and on account of the depths of water and mud encountered is of considerable interest from an engineering standpoint. The older portion of the pier was built in 1913 and measured approximately 376

feet slips are also installed, together with a standard gauge railway track which runs the entire length of the east side, and makes it possible to deliver open car freight directly under the ship's slings. The east and west sides of the pier are divided by a depressed standard gauge track, running down the centre of the pier and serving both sides. A one story shed, of heavy mill type construction, is built over the new pier, on top of which is a promenade, connected with the lower deck by stairways on the west and north sides. This promenade is designed for passenger traffic, but also

point of equilibrium was reached and no further settlement of the fill would occur. If at that time, an amount was dredged off the fill, roughly approximating the weight of the structure later to be placed upon it the ability of the underlying material to stand the load could be reasonably relied upon. Careful weekly soundings were kept over the entire area covered by the fill, as also along lines parallel to and outside of it. These soundings showed a slow, but fairly continuous, settlement on the part of the fill, and a slow corresponding rise at the bottom outside of it, until after a considerable



Canadian Pacific Railway Pier D, Vancouver, as completed.

ft. on the centre line by 150 ft. It carried a two story structure, the lower deck being devoted to freight, and the upper deck to passenger traffic and various offices for operating, customs and immigration officials. The primary use of the old pier was for coastwise traffic.

The extension measures approximately 537 x 150 ft. and runs to the harbor line. As the pier has two distinct uses, viz., for coastwise and trans-Pacific traffic, it is so designed, the west and north sides being primarily intended for the coast boats and the east side for trans-Pacific and miscellaneous freight traffic. The west and north sides have complete arrangements for berthing four coast steamships at one time. These arrangements comprise in general, separate freight elevators of the Barlow type for each boat and separate passenger ramps or stairways, each taking the passengers direct from the boat to the upper floor level, without interference with the freight traffic. The east side is designed with continuous sliding doors, giving openings as desired at any point along practically the entire length of the pier. Two heavy adjustable

serves for sight seeing purposes, as it affords a good view of Vancouver harbor.

The old pier was a creosoted pile structure, and a study established the desirability of making the new structure of the same general type. Test holes in or near the area of the extension showed depths of water from 40 to 70 ft. at mean low tide. The tide range is approximately 16 ft. The harbor bottom itself was a mixture of mud, silt, sand and shell, ranging from 10 to 30 ft. in depth, and below this strata of clay and gravel. Hardpan lay variously at from 70 to 140 ft. below low tide. It was apparent that a fill would have to be made, and the material for it was readily obtained from a dredging contractor who was making channel improvements at the First Narrows, about two miles from the pier site. About 250,000 cu. yds. of material were used. The fill had a dual purpose: first, to displace the soft harbor bottom, and second, to provide end and lateral support to the piles to be driven into it. The theory was that the fill would gradually both displace and compress the lighter and softer material beneath, until a

period no further settlement could be observed. As was expected, the part of the fill next to the old pier came to rest first, and permitted pile driving to be begun at a time when the outer portion of the fill was still in movement.

The type of substructure for the pier was fully considered and it was evident that creosoted wooden piling would be the cheap and logical solution of the problem. It was desired, so far as possible, to have the piling penetrate the fill, and rest on the harbor bottom beneath, thereby increasing the area of surface contact, as well as assuring full bearing power, and therefore safety, in case of any future movement on the part of the fill itself. To do this, piling lengths considerably over any known lengths for concrete piles were required. As the teredo is active in these waters a treated pile was necessary. Creosoted Douglas fir piles, with full 15 lb. treatment under boiling process, were therefore determined upon. All other established methods for pile preservation were, however, considered before final decision was made. The contract called for approximately 2,550 piles

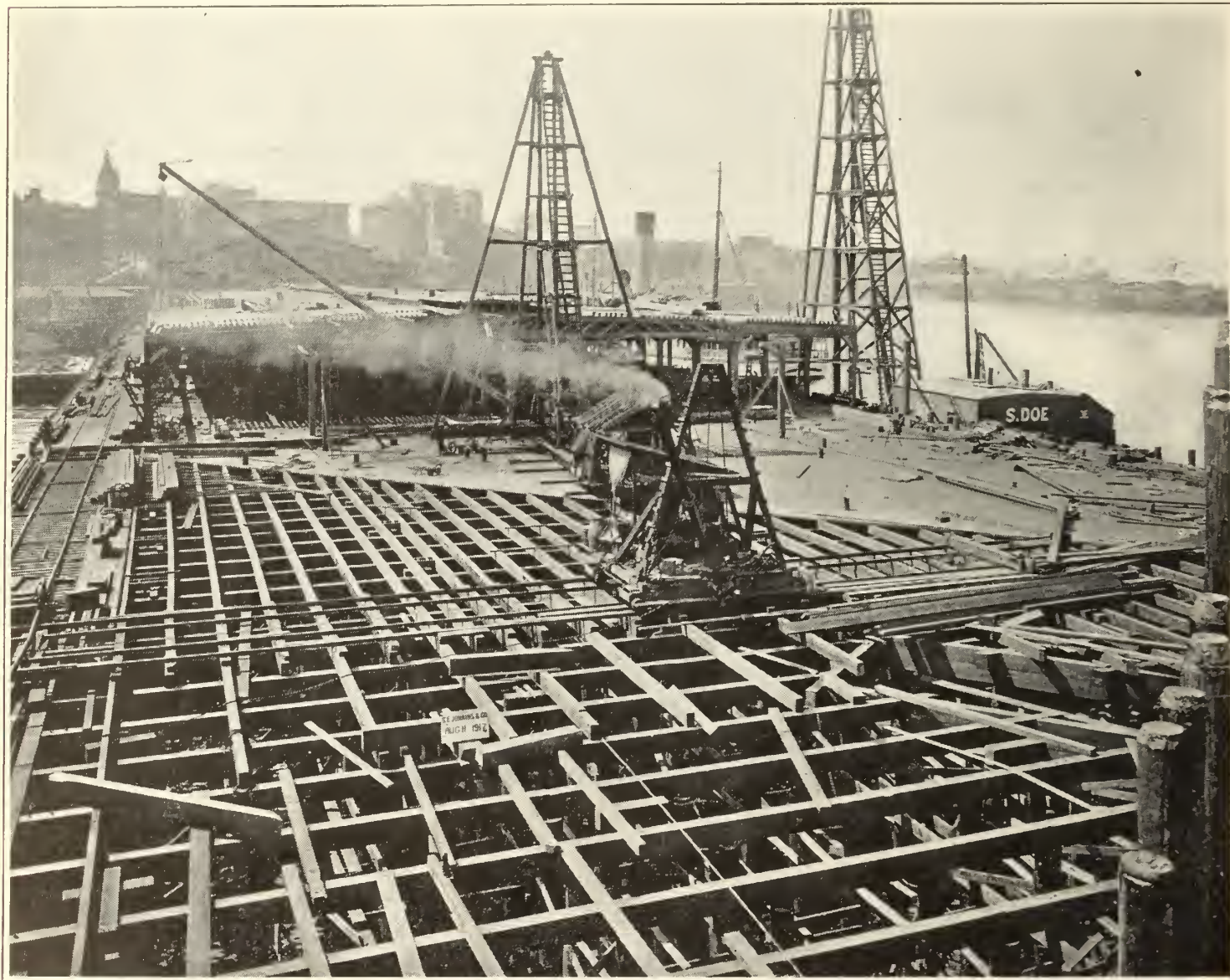


from 85 to 125 ft. long. It was also decided that all deck timber, which was either in contact with the water or near enough to it to be continually damp should be treated. Bracing, caps, stringers and laminated deck timber were therefore specified for 12 lb. treatment under the boiling process. All timber was to be of Douglas fir and of standard specifications. The pile driving work was given to S. Doe, of Victoria. As there was no rig available for handling piles of the weight and lengths of those to be used, Mr. Doe built a special scow driver, with leads measuring 130 ft. in height.

travelling derrick, running on a track laid across the pier, and so arranged that it could be jacked up on rollers and moved forward under its own power. This moving operation took about two hours. About 40 lin. ft. of pier could be handled from each position of the track. The derrick was used for handling all creosoted timber, which was delivered on scows alongside as required, picking up, moving across the dock and depositing in place. The average time for handling the 7 in. x 12 in. x 40 ft. stringers, from the scow to the far side of the dock, and back again for another load was approxi-

and moored alongside of or near the dock, while field office, storehouse and compressor house were located at the extreme end of the old pier outside of the shed, where they would not interfere with the operation of the pier and yet be easily accessible.

While piles were being treated, inspectors were kept at each plant, and the quantity and quality of creosote used, temperatures, pressures and time of treatment were carefully watched and recorded. Each pile was numbered and stamped after being passed and full data on its treatment recorded. When driv-



Canadian Pacific Railway Pier D, Vancouver. Looking north during construction, Aug., 1917.

So far as is known, this is one of the largest, if not the largest, scow driver ever built.

As there was a large amount of boring and drift bolting to be done, a motor driven air compressor was installed, pipe lines extended from it and connections tapped in at intervals, with hose to the various air tools. These comprised air riveters, with special sets for drift bolt driving, and boring machines of various sizes. The borers were especially useful in laying the 2 x 4 in. Australian hardwood which served as flooring, and which had to be bored for nailing. This boring alone required approximately 70,000 holes.

Another useful machine was a small

mately two minutes.

A skid driver was used to drive the track extension along the old pier, and a few column piles under the old deck which had been omitted in building the original pier. When its pile driving work was finished, it was turned into a skid derrick, with an 80 ft. boom, and used to erect the roof trusses, which were framed and assembled on the deck and lifted complete on to the columns in one operation. This derrick was used to raise the 2 x 6 in. laminated roofing, a team load at a time. It also performed a variety of miscellaneous work, as its long boom and skids made it a very handy rig.

A fully equipped blacksmith shop was built on a small scow, to avoid fire risk,

ing, a report was also made by an inspector on each driver, as to the pile number, location, penetration and length of cutoff. It was thus possible to readily trace the history of any pile from its time of treatment until driven. All piles were spotted by transit and stayed soon after driving.

The driving at all times was extremely hard. Piles were driven on 6 ft. 8 in. x 8 ft. centres. Piles were capped by 10 x 16 in. and 12 x 14 in. creosoted timbers, drift bolted into place. Capping was kept several bents behind the pile driving, so that the jar from the driving would not change the elevation of the piles after cutoff. Creosoted stringers were laid across the caps and drift bolted



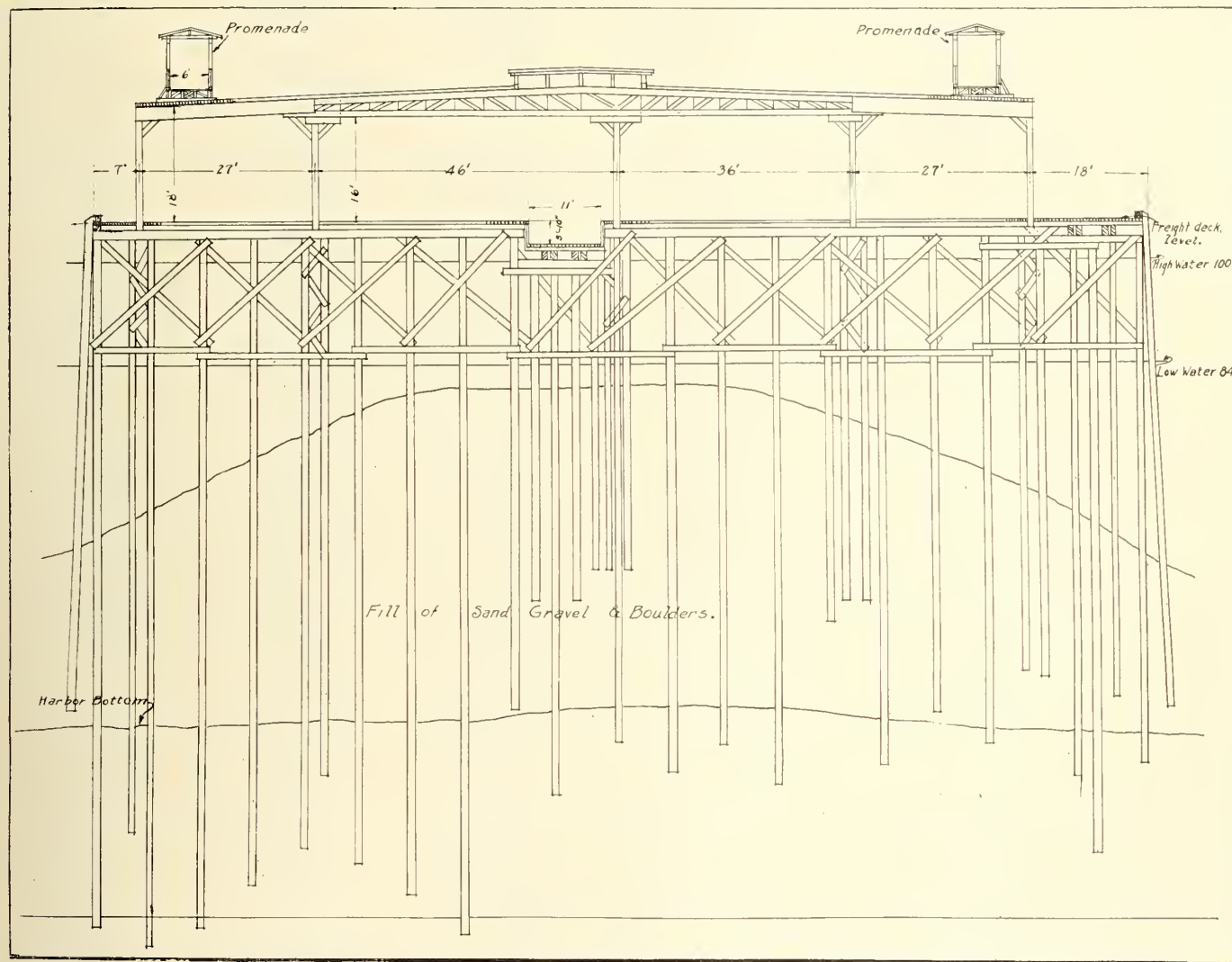
to them. A laminated creosoted 2 x 4 in. decking was laid diagonally on the stringers, the idea being to give additional rigidity by tying several parallel pile bents together in this way. Piles were also braced diagonally, and additional longitudinal bracing was run down each side of the depressed track. The outside railway track had its own special bracing. Waling was also installed at periods of maximum low water. On the laminated deck, there was laid a flooring of 2 x 4 in. Australian hardwood, running parallel to the pile bents. This flooring was air bored and spiked with great care to get a tight joint.

The shed area was divided down the middle by a depressed standard gauge track, which brought the car doors at

outside bays. The roof itself was made up of 2 x 6 x 30 ft. lamination, covered by a 3-ply asbestos roofing mopped on. A low monitor, ventilated by fixed louvres was run down the centre of the roof and also extended over the old portion of the shed. Running around the outer edge of the roof is a covered promenade 6 ft. wide. Two stairways lead from it to the lower outside deck. On the east side the promenade railing is in removable sections, as it is planned to land trans-Pacific passenger traffic to this promenade and so avoid passenger movement on the lower freight level. A heavy removable passenger gangway runs on the east side railway track and is provided with adjustable landing gangways on each side between itself the ship and the promenade.

few sliding doors and solid wall. The wall is made up of shiplap covered with corrugated iron. The north wall is provided with two doors.

Three freight elevators of the Barlow type were installed, one being a new machine and the other two being transferred from former locations on or near Pier D. Two adjustable freight slips were also installed. As the east side track crosses these slips, a device was worked out so that this section of track operates with a turntable. When the slip is up, the track is locked in place, and supported rigidly on the pile bents. When the slip is down, the track is given a quarter turn, so that the rails lie parallel to the slip axis and can be readily trucked over. Each slip is operated by two worms and



Canadian Pacific Railway Pier D, Vancouver. Transverse section, through one story shed, looking north.

the deck level. The area on each side of the track was divided into bays 36 and 46 ft. wide respectively, with outside bays of 27 ft. each, with roof columns 20 ft. centre longitudinally. These columns were posts, carried on special piles, independent of the rest of the substructure. The roof was required to bear, not only its own weight plus snow and wind load, but also a promenade with a possible live load of 100 lb. per sq. foot, the total load being about 150 lb. per square foot. It was also desired to have the roof line match that of the old pier, and at the same time keep a minimum clearance of 16 ft. under the trusses in the shed. The wooden trusses over the centre bays were 82 ft. long, and designed with separate members of 14 x 28 x 28 ft. over the

The passenger bridge was originally on the east side of the pier and was moved to the west side. The space formerly occupied by it was closed up and turned into offices.

The entire east side of the pier is made up of continuous sliding doors. There are 95 of these running on two parallel tracks and overlapping. They are hung on adjustable rollers, which will take up settlement. The bottom track is made up of T and angle irons, left open through the deck, so that nothing can collect to interfere with the working of the doors. The doors are glazed in the upper half and screened, with a 3 ft. section of window above them, to provide additional light. The west side walls are made up of short sections of continuous doors, a

gears, on a common shaft, with endless hand chain attachments. The slips are supported by steel hooks, which drop back when the slip is to be lowered, by means of a lever pulled from the deck level. The centre depressed track is fitted with an electrically driven car-haul, with a capacity of 10 loaded cars. Its use will avoid the presence of any steam locomotives inside the pier, with their attendant fire risk and smoke.

Motors, with a total capacity of about 200 h.p., are installed on the pier. The current is brought to a concrete transformer station at the south end of the pier and distributed in ducts. No transformers are allowed on the pier, on account of fire hazard. Lighting current is also transformed off the pier and distri-



buted by conduit, the circuits being arranged so that practically any combination of lights can be obtained. Lighting plugs are installed along the side of the depressed track, to provide for portable lights for loading and unloading freight cars. Screened bracket lights are placed at 40 ft. intervals around the outside of the shed, and red and green beacon lights at the outer end. An electric fog bell is also installed.

Fuel oil lines are carried down each side of the pier, with valves at the various boat landings. A covered water line is laid along the bottom of the roof trusses, and branch lines are taken off at intervals, for supplying the boats and for fire protection. Hose valves and lines of hose, laid on tilting hose racks, are also supplied, and so arranged as to cover the entire pier area. Five bubbler type drinking fountains are installed and two lavatories.

A considerable amount of miscellaneous work was necessary to adapt the old pier to the increased traffic. The upstairs offices had to be considerably enlarged and revised, and facilities, formerly in the office space, moved to new locations. Small enclosures also had to be built for customs, baggage, express and similar purposes. At the south end of the pier one of the steel columns supporting a part of the Granville St. ramp, and the southeast corner of the pier structure, had to be cut out in order to provide clearance for the east side track connection with the yard tracks. A 75 ft. girder was installed in the place of the old column and two shorter girders which it supported. No lifting equipment was available, so that the entire operation was conducted by block and hand jacks. The east side track connection also made necessary the entire revision of the deck at the south end of the pier, and the building of several ramps to lead from the track level to the various higher levels in the adjacent sheds. It was also necessary to extend the concrete footings on six columns under the Granville St. ramp.

The entire work was done by Sydney E. Junkins & Co., of Vancouver, under the direction of J. G. Sullivan, M.Can.Soc. C.E., Chief Engineer, Western Lines, C. P.R., Winnipeg; and H. Rindal, District Engineer, C.P.R., Vancouver.

**C.P.R. Trainmen's Wages.**—The conciliation board, consisting of T. G. Mathers, Chairman; I. Pitblado, K.C., for the company, and D. Campbell on behalf of the men, appointed recently to deal with the company's trainmen's wages on its Western Lines, reported early in February that an agreement had been arrived at on all matters in question. The rates under the new schedule, except those for the New Westminster Subdivision, which are fixed for the life of the schedule, are the existing rates, but when new rates are arranged in the U. S., following the movement now proceeding there, the new rates adopted for the U.S. will replace the existing ones.

**First Aid Work on G.T.R.**—The final tests in the first aid competition among the various shop teams on the G.T.R. system, for the Chamberlin silver shield, took place at Montreal, Feb. 22, the winning team being from the Stratford, Ont., shops, and the second and third being from the Point St. Charles, Montreal, shops. Each member of the winning team received an annual pass over the system, and each member of the other two teams received a pass over the lines in the division in which he is employed.

## Canadian Pacific Railway's Honor Rolls 30 and 31.

Abbey, Edwin Eustin	Transitman	Toronto	Killed in action
Allan, John Martin	Townsite salesman	Calgary	Killed in action
Anderson, Idenwick M.	Clerk	St. John, N.B.	Gassed
Ashton, George Elliott	Conductor	Revelstoke	Killed in action
Bass, George Harold	Clerk	Winnipeg	Gassed
Baxter, Cyril James	Steward	British Col. Coast Strs.	Wounded
Bickerdike, Herbert	Stenographer	Winnipeg	Killed in action
Blackford, Alfred	Constable	Ontario District	Killed in action
Broom, Roy	Assistant agent	Kisbey	Killed in action
Brown, Richard Edison	Brakeman	Regina	Wounded
Burton, Frank	Loco. fireman	Minnedosa	Wounded
Bush, William	Checker	Toronto	Wounded
Celle, Joseph	Yardman	Vancouver	Wounded
Cowell, Wm. Redhead	Specialist	Angus	Killed in action
Darby, Wm. Henry	Constable	Fort William	Killed in action
Dominy, Chas. Grant	Clerk	Edmonton	Wounded
Drake, Leslie Alex.	Clerk	Montreal	Gassed
Drummond, Wm. Henry	Yardman	Chapleau	Died of Wounds
Duncan, William	Car checker	Ignace	Wounded
Edwards, Edward Ernest	Assistant agent	Crossfield	Killed in action
Fawcett, Frederick Roy	Trainman	New Brunswick Dist.	Wounded
Gardiner, Edwin Lincoln	Car checker	Brandon	Killed in action
Hardy, Geo. Dickson	Machinist	Ogden Shops	Killed in action
Heckbert, Wm. Robert	Bridgeman	British Columbia Dist.	Wounded
Hewitt, Robert Ellwood	Brakeman	MacLeod	Killed in action
Hogg, John	Clerk	Toronto	Wounded
Jacobs, Archie Chisholm	Fireman	Calgary	Died of wounds
Jowett, Frank Alfred	Agent	Assiniboia	Gassed
Kamakura, Yoichi	Red cap	Calgary	Killed in action
Kennedy, Hugh Clark	Clerk	Toronto	Killed in action
Lawlor, Albert Robert	Freight clerk	Brit. Col. Lake Strs.	Wounded
McMaster, James	Foreman	Medicine Hat	Wounded
Manley, Arthur Cecil	Carpenter	Ogden Shops	Wounded
Margerson, Ronald	Section foreman	Fleming	Gassed
Miller, Thomas J.	Storeman	Winnipeg	Killed in action
Miles, Norman Calvin	Clerk	Montreal	Wounded
Milestead, Frederick Basil	Wiper	Lethbridge	Wounded
Morrill, Lawrence Norman	Assistant agent	Redcliffe	Wounded
Purnell, William	Machine man	Winnipeg	Wounded
Rayner, Edgar	Messenger	Vancouver	Wounded
Reid, James	Bridgeman	British Columbia Dist.	Wounded
Rowbottom, James	Train baggageman	Revelstoke	Killed in action
Shaughnessy, Harold Wilfrid	Clerk	Montreal	Killed in action
Smallwood, Wm. Henry	Constable	Fort William	Wounded
Smith, Frank	Clerk	Montreal	Wounded
Spence, Joseph	Clerk	Toronto	Wounded
Tomlinson, Thomas	Apprentice	Angus	Wounded
Vease, George	Clerk	West Toronto	Wounded
Watt, Robert	Stower	Winnipeg	Wounded
Angood, Ernest	Loco fireman	Souris	Wounded
Armstrong, James	Laborer	Outlook	Wounded
Atkinson, James	Storekeeper	Stokebury	Gas poisoning
Awcock, Arthur George	Fireman	Kenora	Wounded
Ayre, George	Laborer	Winnipeg	Gassed
Baker, Victor Ray	Yardman	MacLeod	Wounded
Banks, Thomas	Miner	Calgary	Wounded
Barbour, Robert Alexander	Trainman	Brandon	Wounded
Barkas, Donald Harbutt	Inspector	Angus	Wounded
Bartlett, Cecil Stuart	Clerk	Winnipeg	Wounded
Baxendale, William James	Wiper	Kenora	Wounded
Bell, Douglas	Storekeeper	North Transcona	Wounded
Bennett, Norman Whitney	Ticket clerk	Revelstoke	Wounded
Biggs, Lewis	Wiper	Souris	Wounded
Blackwell, Arthur	Freight checker	Weyburn	Wounded
Burgess, Wm. Cowie	Travelling fireman	Winnipeg	Gassed
Campbell, Wm.	Brakeman	Moose Jaw	Killed in action
Chapman, Sidney	Waiter	Montreal	Wounded
Clark, Alexander	Apprentice	Ogden Shops	Wounded
Colhoun, David	Material Man	West Toronto	Wounded
Cooke, Fred.	Apprentice	Winnipeg	Wounded
Crooks, Rollo Wm.	Car cleaner	Calgary	Wounded
Craig, Wm.	Clerk	Montreal	Killed in action
Egan, John	Clerk	Angus	Gas poisoning
Farrel, James	Apprentice	Vancouver	Wounded
Fawcett, Ernest James	Apprentice	Winnipeg Shops	Wounded
Fitzgerald, Edward O.	Constable	Moose Jaw	Wounded
Forrest, Marshall	Asst. Storekeeper	Calgary	Wounded
Fraser, Allan Arthur	Messenger	Brockville	Killed in action
French, George G.	Trainman	Souris	Concussion
Futhey, Fred'k W.	Locomotive man	Chapleau	Wounded
Gardhouse, George	Clerk	Owen Sound	Wounded
Gihhs, Hy.	Tuber	Lanigan	Wounded
Gillespie, John Wilfred	Clerk	Winnipeg	Died of wounds
Grenzebach, Earl Wilfrid	Operator	Hardisty	Wounded
Grimes, Alfred	Shed porter	West Toronto	Wounded
Haines, Wm.	Wiper	Fort William	Wounded
Hall, John Albert	Station master	Fort William	Died of wounds
Hambleton, James Thomas	Conductor	Moose Jaw	Wounded
Hanna, George Edward	Trainman	British Columbia Dist.	Wounded
Hawley, John Alfred	Trimmer's helper	London	Gas poisoning
Henderson, Samuel	Truck repairer	Ogden Shops	Wounded
Hodgben, Owen Percival	Clerk	Winnipeg	Wounded
Horn, William Archie	Porter	Pembroke	Wounded
Hoyt, Cyril M. C.	Inspector	Angus Shops	Wounded
Inglee, John	Loco. fireman	Moose Jaw	Wounded
Jackson, Harry	Car cleaner	Toronto	Wounded
Jones, Urban Arthur	Elevator operator	Toronto	Killed in action
Jones, James	Assistant agent	Killam	Wounded
Keevil, Walter John	Wiper	Fort William	Wounded
Kennedy, Keith	Loco. fireman	Fort William	Died of wounds
Kilfoyle, Albert Mansel	Clerk	Paddington	Wounded
Koplick, Chas.	Freight carpenter	Ogden Shops	Wounded
Lamburd, Walter Owen	Checker	Calgary	Wounded
Laskey, Francis William	Fireman	Edmonton	Killed in action
Laxton, Reginald John	Section man	Mission	Wounded
Lester, Joshua	Tuber	Wynyard	Wounded
Logan, James L.	Yardman	Winnipeg	Gassed
Long, Leonard	Blacksmith's appr.	Vancouver	Killed in action
Love, Hugh Thos. Mercer	Rate clerk	Vancouver	Wounded
Luxton, Victor	Car cleaner	Winnipeg	Killed in action
MacCallum, Frank Charles	Loco. fireman	British Columbia Dist.	Wounded
Marple, Sidney	Constable	Schreiber	Died of wounds
Masterson, James	Trainman	Fort William	Died of wounds



Merrifield, John Arthur  
 Morris, Thomas  
 Muir, James  
 Palmer, Richard  
 Robertson, Patrick  
 Robinson, Alfred Ernest  
 Sauvey, Chas. Geo.  
 Sayer, Ernest Albert  
 Shaw, George  
 Shepherd, Alex.  
 Simpson, William  
 Smith, Cecil  
 Stump, Leonard Edward  
 Sweeney, Carson  
 Swinton, Douglas  
 Tait, Mortimer  
 Thomas, John Robert  
 Thomas, William  
 Thompson, Frederick  
 Wigginton, Reginald  
 Wilson, Samuel Elliot  
 Wood, Sidney  
 Wylie, Robert Hood  
 Wright, David  
 Woolls, Walter Aubrey

Clerk  
 Trainman  
 Boilermaker's helper  
 Machinist  
 Wiper  
 Conductor  
 Porter  
 Chargeman  
 Fireman  
 Machinist  
 Trainman  
 Store foreman  
 Clerk  
 Trainman  
 Clerk  
 Clerk  
 Car inspector  
 Sectionman  
 Storeman  
 Clerk  
 Motor driver  
 Trainman  
 Wiper  
 Fireman  
 Locomotive man

Toronto  
 Winnipeg  
 Angus  
 Angus  
 MacLeod  
 Chapleau  
 Calgary  
 Bobcaygeon  
 Winnipeg  
 Angus  
 Minnedosa  
 Moose Jaw  
 Calgary  
 Winnipeg  
 Brandon  
 Victoria  
 Jack Fish  
 British Columbia Dist  
 Ogden  
 Winnipeg  
 Calgary  
 Kenora  
 Brandon  
 Kenora  
 British Columbia Dist

Wounded  
 Wounded  
 Wounded  
 Gassed  
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 Wounded  
 Wounded  
 Concussion  
 Wounded  
 Contusion  
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 Wounded  
 Killed in action  
 Died of wounds  
 Gassed  
 Killed in action  
 Gas poisoning  
 Gassed  
 Gas poisoning  
 Killed in action  
 Gassed  
 Wounded  
 Wounded  
 Wounded  
 Wounded

F. W. Peters, General Superintendent, British Columbia District, C.P.R., Vancouver, born at St. John, N.B., Mar. 25, 1860.

J. W. Pugsley, Secretary, Department of Railways and Canals, Ottawa, Ont., born at Amherst, N.S., Mar. 12, 1861.

C. J. Smith, Manager and Secretary, Montreal Warehousing Co., Montreal, born at Hamilton, Ont., Mar. 10, 1862.

W. Y. Soper, Vice President, Ottawa Electric Ry. Co., Ottawa, Ont., born at Oldtown, Me., Mar. 9, 1854.

E. F. L. Sturdee, General Agent, Passenger Department, C.P.R., Boston, Mass., born at St. John, N.B., Mar. 29, 1876.

A. A. Tisdale, Assistant to Vice President and General Manager and Purchasing Agent, Grand Trunk Pacific Ry., Winnipeg, born at Mount Vernon, Ont., Mar. 8, 1874.

G. W. Vaux, General Agent, Passenger Department, Union Pacific Rd., Chicago, born at Montreal, Mar. 21, 1866.

A. D. Watt, District Master Mechanic, Grand Trunk Pacific Ry., Prince George, B.C., born at St. Louis, Que., Mar. 5, 1874.

A. T. Weldon, General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Dorchester, N.B., Mar. 6, 1876.

D. O. Wood, Assistant Export and Import Agent, C.P.R., and acting Assistant Director of Overseas Transport, Montreal, born at Kleinburg, Ont., Mar. 16, 1864.

R. Wright, Division Agent, Ontario Lines, G.T.R., Toronto, born at London, Ont., Mar. 15, 1885.

H. K. York, Car Foreman, C. P. R., Swift Current, Sask., born at Victoria Corner, Carleton Co., N.B., Mar. 20, 1881.

### The Central Railway of Canada's Difficulties.

The Exchequer Court of Canada has refused the Central Ry. Co. of Canada's directors' petition for confirmation of a scheme of arrangement between that company and its creditors. Following this, application was made by the City Safe Deposit & Agency Co. of London, Eng., trustees for the bondholders, asking for the appointment as receiver of F. Stuart Williamson, M.Can.Soc.C.E., of Montreal, formerly the C. R. Co. of C's Chief Engineer, and the application was granted.

These judgments are the culmination of various proceedings in the Exchequer Court concerning the affairs of the company, of which C. N. Armstrong, formerly of Montreal, and now living in England, is President, having succeeded to that office upon the death of Senator Owens. The other directors are W. D. Hogg, K.C., E. A. D. Morgan, J. T. Bethune, J. O. Dupuis, and J. D. Wells, the latter having also acted as Secretary. The Central Ry. was projected to run from Montreal to Midland, Ont., with several branches, but only some 20 miles have been partially constructed. Bonds for £427,000 were sold, principally in England and France.

**Coal Production in Alberta.**—The total output of coal in Alberta for 1917, according to a report issued by the Alberta Public Works Mines Branch, Edmonton, was 2,637,829 tons of lignite; 2,206,868 tons of bituminous coal; 118,717 tons of anthracite; and 93,818 tons of briquettes. Of this 1,558,121 tons was shipped by rail to points outside the province, Saskatchewan being the largest consumer. There were 93,081 tons shipped to the U. S. from the Southern Alberta coal fields during 1917.

## Birthdays of Transportation Men in March.

Many happy returns of the day to:—

W. G. Annable, General Passenger Agent, Canadian Pacific Ocean Services, Ltd., Montreal, born at Ottawa, Mar. 3, 1875.

John Archibald, Locomotive Foreman, C.P.R., Coquitlam, B.C., born at Edinburgh, Scotland, Mar. 13, 1872.

Jas. Balkwill, Division Superintendent, Canadian Division, Michigan Central Rd., St. Thomas, Ont., born in Southwold Tp., Ont., Mar. 8, 1870.

Sir George Bury, Vice President, C.P.R. Montreal, born there, Mar. 6, 1866.

Allan Cameron, Superintendent, Land Branch, Department of Natural Resources, C.P.R., Calgary, Alta., born near Owen Sound, Ont., Mar. 14, 1864.

H. S. Carmichael, Passenger and Freight Manager, Canadian Pacific Ocean Services, Ltd., London, Eng., born at Glasgow, Scotland, Mar. 7, 1874.

F. G. J. Comeau, District Freight Agent, C.P.R., Halifax, N.S., born at Meteghan River, N.S., Mar. 10, 1859.

W. A. Cooper, Manager, Sleeping, Dining and Parlor Cars and News Service, C.P.R., and member of Government Food Consumption Control Committee, Montreal, born there, Mar. 22, 1871.

A. E. Cox, General Storekeeper, Canadian Northern Ry., Winnipeg, born at Huddersfield, Eng., Mar. 12, 1863.

Hon. N. Curry, President, Canadian Car & Foundry Co., Montreal, born in King's County, N.S., Mar. 26, 1851.

C. T. Delamere, acting Engineer of Construction, Eastern Lines, C. P. R., Montreal, born at Brainerd, Minn., Mar. 18, 1881.

H. G. Dring, General Passenger Agent, C. P. R., London, Eng., born at Easton, Northamptonshire, Eng., Mar. 8, 1881.

Patrick Dube, Secretary-Treasurer, Montreal Tramways Co., Montreal, born there, Mar. 4, 1876.

Frederick Elliott, President Victoria Navigation Co., Ltd., Thurso, Que., born at Montreal, Mar. 8, 1858.

M. P. Fennell, Jr., Secretary-Treasurer and Comptroller, Montreal Harbor Commissioners, Montreal, born there, Mar. 13, 1885.

W. R. Fitzmaurice, Superintendent, District 2, Intercolonial Division, Canadian Government Railways, Campbellton, N.B., born at Bedford, N.S., Mar. 19, 1870.

C. Forrester, Superintendent, London Division, Ontario Lines, G.T.R., London, born at Wanstead, Ont., Mar. 5, 1876.

Jas. D. Fraser, Director and Secretary-Treasurer, Ottawa Electric Ry., Ottawa, Ont., born at St. Andrews, Que., Mar. 26, 1851.

R. A. Gamble, General Yardmaster, Winnipeg Terminals, C.P.R., born at Dublin, Ireland, Mar. 1, 1876.

E. P. Goodwin, ex-Inspecting Engineer, National Transcontinental Ry., Baie Verte, N.B., born there, Mar. 17, 1865.

J. Halstead, Division Freight Agent, C.P.R., Calgary, Alta., born at Bracebridge, Ont., Mar. 2, 1877.

R. M. Hannaford, M.Can.Soc.C.E., Assistant Chief Engineer, Montreal Tramways Co., Montreal, born there, Mar. 22, 1865.

C. A. Hayes, General Manager, Eastern Lines, Canadian Government Railways, Moncton, N.B., born at West Springfield, Mass., Mar. 10, 1865.

H. T. Hazen, M.Can.Soc.C.E., Chief Engineer, Toronto Suburban Ry., Toronto, born at Truro, N.S., Mar. 14, 1870.

J. I. Hobson, Treasurer, Canada Steamship Lines Ltd., Montreal, born at Guelph, Ont., Mar. 30, 1872.

N. J. Holden, President, The Holden Co., Ltd., Montreal, born at Nobleton, Ont., Mar. 22, 1866.

A. R. Holtby, Master of Bridges and Buildings, Mountain Division, Grand Trunk Pacific Ry., Prince Rupert, B.C., born at Rawdon, Que., Mar. 23, 1859.

Frank Lee, M.Can.Soc.C.E., Engineer Maintenance of Way, Eastern Lines, C. P. R., Montreal, born at Chicago, Ill., Mar. 7, 1873.

J. M. McKay, Superintendent, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon, born at Tiverton, Ont., Mar. 13, 1868.

Owen McKay, M.Can.Soc.C.E., Chief Engineer, Essex Terminal Ry., Walkerville, Ont., born in Ross Tp., Renfrew Co., Ont., Mar. 13, 1848.

Brigadier-General H. H. McLean, K.C., M.P., ex-President, St. John Ry., St. John, N.B., born at Fredericton, N.B., Mar. 22, 1855.

M. Magiff, Superintendent of Car Service and Telegraphs, Central Vermont Ry., St. Albans, Vt., born at Planks Point, N.Y., Mar. 24, 1852.

Sir Donald D. Mann, Vice President, Mackenzie, Mann & Co., Ltd., and Vice President, Canadian Northern Ry., Toronto, born at Acton, Ont., Mar. 23, 1853.

H. H. Melanson, Passenger Traffic Manager, Canadian Government Railways, Moncton, N.B., born at Scadouc, N.B., Mar. 9, 1872.

J. V. Murphy, General Agent, C.P.R., Portland, Ore., born at Bowmanville, Ont., Mar. 5, 1885.

Peter Paton, Purchasing Agent, Canada Steamship Lines, Ltd., Montreal, born at New Lovell, Ont., Mar. 13, 1869.

Shown on Honor Lists to date:—Killed, 576; wounded, 1,257; total, 1,833.



## Grand Trunk Railway Car Shops at Port Huron.

Canadian Railway and Marine World for January contained a description and ground plan of the new car shops built by the G.T.R. at Port Huron, Mich. The accompanying illustration gives a general view of the plant. Following is a list of the machinery installed in the different buildings:—

**Machine Shops:**—1 arc portable electric welding machine; 4 arc portable electric welding machines; tool room lathe, 16 in. x 10 ft.; engine lathe, 24 in. x 22 ft.; engine lathe, 30 in. x 10 ft.; 42 in. passenger car wheel lathe; vertical boring and turning mill; hydraulic car wheel press; 36 in. x 36 in. x 8 ft. heavy planer; triple geared shaper; milling machine; bolt pointing machine; vertical drilling machine; sliding head drill press; wheel and lever feed drill press; power hack saw; motor head stock floor grinding machines; punching

pression riveter; 2 oil storage tanks; 3 forging furnaces; furnace for no. 9 bulldozer; 2 vertical drilling machines; 2 cutters.

**Upholstering Shop:**—Hair picker; 3 sewing machines; overseaming machine.

**Paint Mill:**—Paint mill; 2 paint mixing machines.

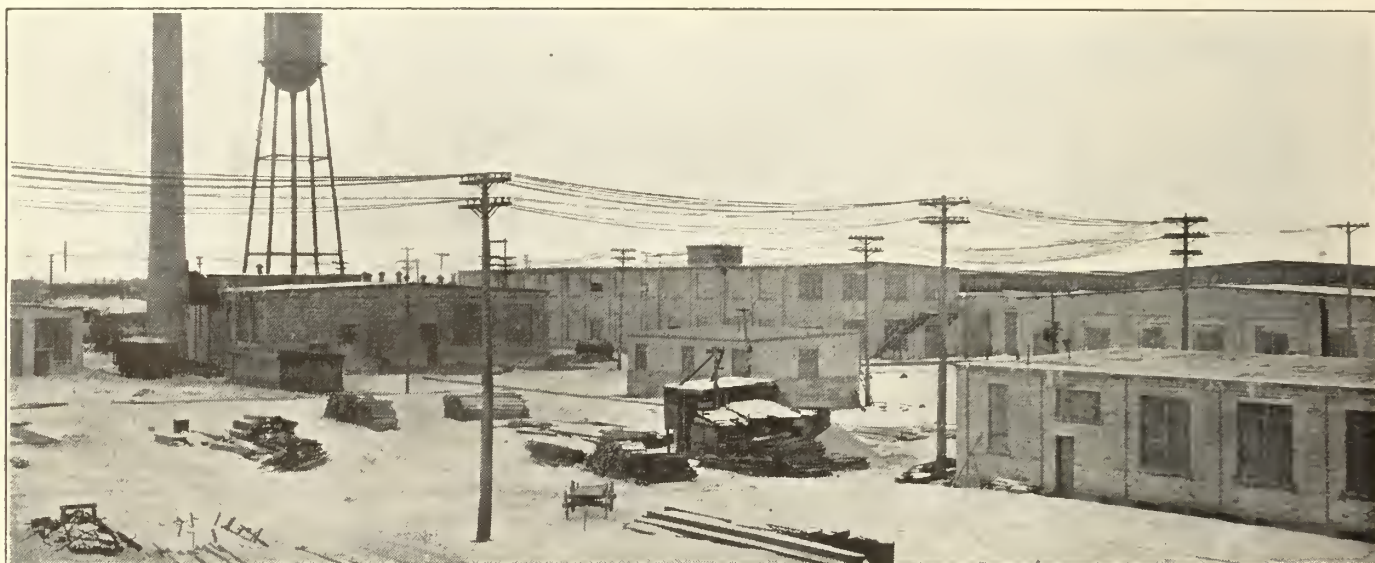
**Pipe Fitters Shop:**—Pipe machine; pipe bending machine.

**Electrician's Shop and Battery House:** Drill press.

### Terminal Facilities at Quebec for National Transcontinental Railway Urged.

The question of providing adequate terminal facilities at Quebec for the Nation-

facilities are provided grain dealers will not change their present arrangements in order to take advantage of the cheaper route. During the year ended Sept. 1, 1916, there were shipped from Port Arthur and Fort William to United States ports 193,000,000 bush. of grain, while 138,000,000 bush. were shipped from the same ports through Canada, a considerable portion of which was ultimately sent overseas via Boston and Portland. None of the purposes for which the N.T.R. was built have therefore been accomplished. The only way the railway can be made to pay its expenses, or become a profitable undertaking, is to provide the facilities necessary for the proper handling of the traffic which it has proved itself capable of handling. The Quebec Board of Trade has repeatedly during the past two years or more urged upon the Dominion Gov-



Grand Trunk Railway Car Shops, Port Huron, Mich. General View.

and shearing machine; cutter reamer and drill grinder; double car axle turn lathe; union planer chuck; 4 in. under gear comb chuck; triple valve test rack.

**Cabinet Shop:**—36 in. band saw; three drum sander; light ball bearing tenoner; 8 in. outside moulding; double spindle shaper; emery wheel stand; single surface planer; saw bench (iron frame); improved saw guard; wood turning lathe; grindstone frame and stone; scroll saw; vertical mortiser; universal saw bench; 16 in. jointer; single spindle boring machine; dowel and rod machine; complete veneer press; steam glue boiler; 4 factory trucks; vertical spindle and disk sander.

**Wood Mill:**—Plain rip saw bench; open side moulder; band re-saw and scroll; self feed rip saw; variety saw bench; automatic railway cut off saw; swing saw; timber planer and sizer; universal horizontal car tenoner; vertical hollow chisel car mortiser; horizontal hollow closed car mortiser; auto car gainer; spindle horizontal car borer; vertical and radial car borer; heavy 16 in. variety wood worker; automatic knife grinder high speed matcher; knife balance machine.

**Blacksmith and Forge Shop:**—Bolt heading, upsetting and forging machine; forging machine; bulldozer; punch and shear, 25 in. throat; punch and shear, 30 in. throat; single punch and shear, 9 in. throat; bolt threader; grindstone frame; radial drill press; steam hammer; com-

al Transcontinental Ry. has been attracting considerable attention there recently, and has formed the subject of correspondence between the Quebec Board of Trade, the Minister of Railways and the Montreal Board of Trade. The first communication was addressed to the Minister of Railways, on Oct. 5, by J. G. Scott, President of the Quebec Board of Trade, and formerly General Manager Great Northern Ry. of Canada and Quebec and Lake St. John Ry. This letter was in reply to one received from the Minister relative to the opening of the Quebec Bridge for traffic. Mr. Scott said, "The National Transcontinental Ry. was projected with the distinct promise in Parliament that it would materially cheapen transportation for farmers of the northwest; that it would give all its ocean traffic to Canadian seaports, and that steamship tonnage would always be available at Canadian seaports to handle all its tonnage." Mr. Scott pointed out that the N.T.R. reduces the distance from the northwest by 314 miles and is so well built that experience has shown that grain can be profitably carried to tidewater at 3c a bushel cheaper than it can be delivered by lake and rail route to Montreal and New York. But owing to the fact that the railway, which has already cost Canada \$150,000,000 has not terminal facilities of its own, it therefore cannot handle the traffic. Until these

ernment the importance of providing these terminals. The suggestion that the proposition recommended is too ambitious to warrant consideration during the period of the war, is not considered by Mr. Scott a sound one. He contends that the government's policy is permitting Canadian trade to drift away to the United States, from which country it will be very difficult to recover it after a few years. The city and province of Quebec are vitally interested in this matter because they have expended large sums to encourage the building of railways to the city. The proposition to build the necessary terminals is not too ambitious to warrant consideration even during the continuance of the war, but on the contrary, is most urgent, especially as terminals for the south shore lines coming into Quebec over the bridge will have to be arranged for immediately.

The Montreal Board of Trade's Secretary in writing to the Quebec Board of Trade on Nov. 8, said, "While in entire accord with your board as to the desirability of such terminal facilities for the N. T. R. being provided at the ports it reaches as are likely to be required, the council of this board is of the opinion that before any action is taken by the government in this connection, it should consider whether such terminal facilities shall, as in the case of Montreal, be provided by the port authorities and paid for



out of the port revenues, or whether the government shall provide them as a charge upon the public funds; and further that if the latter course be decided upon, the government would need to give very careful consideration as to the probable extent of the terminal requirements at the several ports before it enters upon any extension scheme for their provision, the fact that these ports have connection with the N. T. R. not necessarily involving a natural supply of ocean tonnage thereat.

To this letter Mr. Scott replied on Nov. 15, discussing the points raised, restating the arguments used in his letter to the Minister of Railways, and enforcing

them by references to trade returns and other facts. While he agrees that much may have to be sacrificed to the war, yet he claims that the country would be justified in undertaking this expenditure upon terminal facilities for the N.T.R. in order to prevent Canada's trade slipping away from it.

The Montreal Board of Trade replied on Nov. 30, that it saw no reason to change its former opinion; that if the war is prolonged it will be increasingly impossible to do anything in the matter; and that the government is in possession of all information necessary to enable it to provide the terminal facilities whenever it is able and willing to do so.

## The Fuel Situation in War Time.

By T. Britt, General Fuel Agent, Canadian Pacific Railway.

Never in the history of the world has coal been of such vital importance. It is the life blood of the nations engaged in this unfortunate world wide war, and the success of the allies is very largely dependent upon its increased production and careful conservation.

It was customary in former years to send the surplus coal produced in Eastern Canada to the New England states and from western Canada to the western states, Central Canada and that part west of the Great Lakes and as far as Brandon, Man., being supplied with United States coal.

The total production of Canadian coal prior to the war was 15,000,000 tons a year and in the United States between 500,000,000 and 600,000,000 tons; the latter being the production for 1916.

During 1917 Canada will produce nearly 2,000,000 tons less, and the United more than in 1916. But as the increase in consumption is approximately 100,000,000 tons, there is a shortage of 50,000,000 tons to be made up by elimination of wastage.

Sending eastern and western Canadian coal to the U. S. and U. S. coal to central and part of western Canada was with the object of sending coal by the most suitable rail traffic routes and waterways, and providing more even distribution.

If the eastern Canadian coal was moved west it would be against the current of traffic to Fort William, and if western Canadian coal was moved to eastern Canada it would put on to railways the burden of transporting the longest distance on the American continent.

The U. S. Government has been very considerate towards Canada and will continue to be so, the intention being to treat Canada on an equality with any state in the Union, but, while doing this, they expect and insist that we do the same as they are doing, viz., inaugurate a campaign for the intensive conservation of fuel.

It is not the purpose of this paper to point out in what way our share of the deficiency is to be made up, it being principally a matter of good engineering and true fuel conservation in the boiler-room.

Canadian railways have already reduced their annual passenger train mileage by 10,000,000 miles, and have further decreased the fuel consumption by lengthening out the times of other trains and by eliminating fast freights, and instead running trains with full tonnage, and by equipping locomotives with superheaters, and the best known modern means of lessening fuel consumption.

The C. P. R. has been helping the cause by breaking up and using old ties

for fuel—this even at considerable expense of labor, train service, etc., gathering and handling.

The U. S. have also made a start in reducing their passenger service and loading their trains to the tonnage limit, thereby effecting a saving of several million tons of coal per annum.

I think that we should go further, and I would submit for the consideration of this club, the necessity of the mechanical members getting together and inaugurating an active educational campaign among the firemen, both locomotive and boiler house men.

To my mind this should not be done by printed instructions, but by actual illustration by competent firemen. While it is all very well to write a fireman and tell him what he should do, it is far more educational for a competent instructor to show how it should and could be done.

There is a lot of fuel wasted by automatic stokers not receiving intelligent attention from the firemen. The stoker itself when in proper working order will do all that is required of it, but there are, however, occasions when it will not do what it is supposed to, it is then that a properly instructed fireman will give necessary assistance with a consequent saving in fuel.

The majority of our passenger trains, particularly the sleeping cars, are overheated, it being largely left to the discretion of the colored porter as to what is considered a comfortable temperature, the result is that the temperature is kept up to a point that means comfort for the porter and discomfort for the passengers.

Our houses are being maintained at an unhealthy temperature. Pneumonia takes a little more than one man in eight, and therefore it grasps from tuberculosis the grim honor of killing the most human beings.

Man is a marine animal, seven eighths water, he needs cool air and moisture around him, overheated dry air makes him susceptible to disease, and in a temperature of over 68 degrees it is difficult for men and women to exist healthfully.

If the people can be taught to live in this temperature, the number of pneumonia victims will shortly decrease. Fresh cool moist air is the foe of pneumonia, and persons who keep their houses cool and breathe pure fresh air have no fear of it.

Celebrated doctors have decided that 65 degrees is ample for persons in robust health actively engaged, 70 is too much, with 68 we have a fair healthy average.

Many activities which involve large consumption of fuel, and many methods

of using this fuel, which are practically legitimate in time of peace, will be found susceptible of changes which involve very slight sacrifices of material interests but afford opportunities for considerable saving of fuel.

We have in the past been an extravagant people in the use of fuel, and as the war continues it will be necessary to get down to bed rock in the matter of fuel economy.

Manufacturers of non-essentials should during these war times voluntarily forego the manufacturing of such articles, before being compelled to do so by government direction.

Wherever possible water power should be utilized.

In wooded districts, of which there are several in Canada, wood should be utilized wherever possible. One cord of hard wood is equal to one ton of coal, and one ton of coal is released for use in war work for every cord of wood substituted. It will be found that there is a vast quantity of dead wood in many sections of the country. It will also be found that the supply of wood in many communities is sufficient for domestic purposes in these parts. This wood in many instances is destroyed as waste, and its conservation will not only serve the patriotic purpose of conserving coal needed to win the war, but will also prove a measure of economy to the user.

In certain districts prison labor might be used as a means of cutting and collecting wood, where, of course, the labor of the prisoners could be utilized without interference with free labor.

As a matter of fact the one practical and needful thing today is to save coal, in order that our transportation lines and munition plants may have sufficient to carry on. It may be patriotic, and a certain amount of pleasure may be derived from singing "Keep the home fires burning," but the saving of one ton of coal is of more practical benefit towards assisting the boys in the trenches than the singing of one hundred songs.

The foregoing paper was read before the Canadian Railway Club in Montreal recently.

## Industrial Census of Canada.

The Governor-General in council has approved of schedules, under the provisions of the Act respecting the Census and Statistics Revised Statutes of Canada, Chap. 68, for taking of a census of certain industries. There are three sets of schedules, first those for lumber and sawmill products; second, general schedules for miscellaneous manufactures, and, third, supplemental schedules for specific industries. Among the latter are schedules for electric apparatus, foundry and machine shop products, locomotives and railway cars and repairs, shipbuilding and repairs, electric light and power plants.

The supplemental schedule for locomotives and railway cars and repairs, calls for information as to the quantity of material which, with details of the product showing the number of new locomotives and cars built, repairs to locomotives and cars, work done for other companies, repairs to cars of all kinds, and repairs and renewals to bridges and buildings. The shipbuilding schedule calls for information of material used, details of contract work given out, the equipment of the yard as to drydocks and marine railways and the product in the way of steel and wooden vessels of more than five tons gross; of small boats under four tons, of all vessels building but not launched, and of all repair work done.



## The Survival of the Fittest.

By H. Hulatt, Manager of Telegraphs, G.T.R. and G.T.P.R.

In the stone age it was the man with the strongest physique and incidentally the biggest club who came out on top. In military matters today the same factors prevail with, however, one extremely important addition, i.e., highly trained and developed brains. "The pen is mightier than the sword" is an old saying, and just as true today as when first written, yet the pen cannot be strong unless the driving force behind it, i.e., brain power, has been properly developed. In the commercial world, and particularly in railway, telegraph and telephone spheres, due to existing extremely competitive conditions and which conditions there is little doubt will become even more strenuous, the requirements indicated above are specially essential.

You want your company to survive—

It is up to you to make it fit to survive. Are you doing your share towards accomplishing this? The beginning of a year is always an excellent time in which to take stock. Are you studying and endeavoring in every possible way to qualify for something better? If so, you are making yourself fit to survive. If, however, you are simply content to do the work assigned to you to the best of your ability, and waiting, like Mr. Micawber, for "something to turn up," you will find yourself very much in the same predicament as that gentleman; one who has not made himself fit, and consequently one who, in the strenuous race, will be left behind, or dropped out.

If you have men under you, what relationship exists between yourself and your staff, is it one of fear or respect? The former brings with it discontent, slacking and general inefficiency, the latter confidence and loyalty, resulting in success not only to the individual members of your staff and yourself, but also

to your company. Are you the "boss" or the "chief"? The former is a relic of the days of slavery, the latter breathes the spirit which should prevail in this 20th century, viz., leadership, high character, broadness of mind, and helpfulness to those who are subordinate to you.

It is the duty of all, if a subordinate shows signs of ambition, initiative, and a readiness to assume responsibility, to encourage and assist him. By so doing not only will we individually, and our company, reap the benefit during his probationship, but, "when our day's work is done" we shall leave as our legacy to the company that has given us the opportunity of earning our living, efficient and loyal successors. If we endeavor to cultivate this 20th century spirit to even a greater degree hereafter, we shall thereby not only radiate co-operation in its truest sense, but at the same time increase our own and our company's efficiency; to the mutual benefit of ourselves, our company, and the public.

## Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 214-A. Jan. 17.—Approving standard tariffs of maximum mileage tolls for carriage of passengers of Great Northern Ry., Maine Central Rd., Temiscouata Ry., and Wabash Ry.

General order 214-B. Jan. 24.—Approving standard tariffs of maximum mileage tolls for carriage of passengers of Boston & Maine Rd., and Moncton & Buctouche Ry.

General order 215. Jan. 17.—Approving standard freight tariffs of maximum mileage tolls of all railways in Canada subject to Board's jurisdiction, re 15 per cent. increase in rates.

General order 215A. Jan. 24.—Approving standard freight tariffs of maximum mileage tolls of Moncton & Buctouche Ry. and Quebec Ry., Light & Power Co.

General order 216. Jan. 24.—Amending general order 188, Apr. 23, 1917, re uniform flagging rules for impassable track by adding after words, "Frequent service shall mean nine or more trains per diem," near end of order, the words, "Fast train service shall mean a service at a speed of 35 miles or more an hour."

General order 217. Jan. 28.—Authorizing railway companies in Eastern Canada subject to Board's jurisdiction to increase aggregate minimum weight of l.c.l. shipments of fresh meat, dressed poultry, packing house products, butter and eggs, when loaded in refrigerator cars on private sidings, from 9,000 to 12,000 lb. a car.

26904. Jan. 15.—Authorizing Grand Trunk Pacific Ry. to divert road between Secs. 8 and 9, Tp. 35, Range 3, west 3rd meridian, East Saskatchewan District to a connection with east and west road between Secs. 8 and 17; and authorizing Blucher municipality no. 343 to grade approaches for road crossing, when company shall move plank-ing from present right-angled crossing, and rescinding order 13227, Mar. 14, 1911.

26905. Jan. 15.—Dismissing complaint of Retail Merchant's Association of Port Arthur and Fort William, Ont., against certain railway companies advancing cartage charges at certain shipping points and collecting same from consignees. (This order was given in full in Feb. issue, pg. 68.)

26906. Jan. 11.—Authorizing Essex Terminal Ry. to build highway crossings over its track at Marentette and Elsmere Aves., Windsor, Ont., cost to be paid by City of Windsor, Ont.

26907. Jan. 14.—Dismissing complaint of Montreal Board of Trade's Transportation Bureau, et al., against proposed limitation by C.P.R. of free time allowed for unloading carloads of grain and grain products at St. John and West St. John, N.B., for delivery to Seely Line, from 10 days, including Sundays and holidays, to 5 days, excluding Sundays and holidays.

26908. Jan. 14.—Authorizing C.P.R. to build highway crossing at Gwynne, Alta., in n.w. ¼ Sec. 19, Tp. 46, Range 22, C.P.R. not to be obliged to maintain permissive crossing in n.e. ¼ Sec. 24.

26909. Jan. 14.—Approving G.T.R. location plan, Sept. 17, 1917, showing automatic signals on its Toronto-Hamilton line; work to be completed by July 31.

26910. Jan. 11.—Authorizing Canadian Northern Ry. to build spur for Northwest Biscuit Co., Edmonton, Alta.

26911. Jan. 16.—Ordering C.P.R. to install gates at Sanche St., Ste. Therese, Que., to be operated

by day and night watchmen, who shall also be employed pending installation; 20 per cent. to be paid out of railway grade crossing fund, 25 per cent. of remainder by Ste. Therese municipality, and 75 per cent. by C.P.R.; cost of operation and maintenance to be paid 25 per cent. by Ste. Therese and 75 per cent. by C.P.R.

26912. Jan. 16.—Relieving C.P.R. from providing further protection at Valley Road, St. Stephen, N.B.

26913. Jan. 17.—Ordering C.P.R. not to exceed 10 miles an hour over crossing of highway, first north of station, at Midnapore, Alta.

26914. Jan. 16.—Relieving C.P.R. from providing further protection at first crossing north of Paquin, Que.

26915. Jan. 16.—Authorizing C.P.R. to connect spurs for Forsythe Elevator Co., with Canadian Northern Ry. at Transept, Man.

26916. Jan. 17.—Establishing collection and delivery limits of Canadian and Dominion Express Cos., in Timmins, Ont.

26917 to 26919. Jan. 19.—Approving Bell Telephone Co. agreements with Drummondville Telephone Co., Drummond, Bagot and Yamaska Counties, Que., Dec. 14, 1917; Crown Hill Telephone Co., Simcoe County, Ont., Dec. 13, 1917; and La Cie Telephone Locale St. Georges de Windsor, Richmond and Wolfe Counties, Que., Dec. 31, 1917.

26920. Jan. 18.—Authorizing G.T.R. to build spur for Canadian Chicago Bridge & Iron Co., Bridgeburg, Ont.; and approving clearances.

26921. Jan. 21.—Amending order 26871, Dec. 26, 1917, re C.P.R. spur in Ascot Tp., Que.

26922. Jan. 18.—Authorizing G.T.R. to build spur from Lot 17 to Lot 22, west of Peel St., Penetanguishene, Ont.

26923. Jan. 21.—Authorizing G.T.R. to rebuild highway across its tracks in Fullerton Tp., Ont., mileage 128.91 from Black Rock (Mitchell).

26924. Jan. 22.—Authorizing Manitoba Government and J. H. Ashdown Hardware Co. to appeal to Supreme Court of Canada from general order 213, Dec. 26, 1917, re 15 per cent. rate increases.

26925. Jan. 22.—Approving Northern Express Co.'s standard mileage tariff of maximum tolls, C.R.C. 40.

26926. Jan. 23.—Authorizing Canadian Northern Ry. to appeal to Supreme Court of Canada from general order 213, Dec., 1917, re 15 per cent. rate increases.

26927. Jan. 23.—Approving standard form of release of liability in respect to travelling in non-passenger cars, for use by C.P.R., C.N.R., G.T.R., and G.T.P.R., and rescinding orders 25025, 24789 and 24917, dated respectively May 31, Mar. 6, Apr. 22, 1916.

26928. Jan. 24.—Authorizing G.T.R. to build two spurs for H. Corby Distillery Co., Corbyville, Ont.

26929. Jan. 24.—Approving plan and specifications of work to be done on Owen stone ditch, under G.T.R. in Lots 11 and 12, Con. 2, Charlotteville Tp., Ont.

26930. Jan. 24.—Approving plan and specifications of work to be done on Grace Davidson ditch, under G.T.R., in Lots 14 and 14, Con. 3, Charlotteville Tp., Ont.

26931. Jan. 25.—Amending order 2030, Nov. 12, 1906, re interlocking plant at crossing of G.T.R. by Canadian Northern Ontario Ry. in Hawkesbury, Ont.

26932. Jan. 18.—Relieving Canadian Northern Ry. from providing further protection at highway crossing east of Elrose, Sask.

26933. Jan. 26.—Authorizing G.T.R. to build two spurs for Riordon Pulp & Paper Co., Hawkesbury, Ont.

26934. Jan. 18.—Ordering Canadian Northern

Ry. to install 18 in. culvert at mileage 50, Brazeau Branch, Alta., by May 31.

26935. Jan. 19.—Extending for three months from date time within which G.T.R. shall install gates at Burwell, Adelaide and Rectory Sts., London, Ont., as required by order 26527, Sept. 11, 1917.

26936. Jan. 19.—Authorizing G.T.R. to use bridge at Lynn Road, Elizabethtown Tp., Ont.

26937. Jan. 18.—Ordering New York Central Rd. within 60 days to install improved automatic bell at main street at St. Stanislas, Que., 20 per cent. of cost to be paid out of railway grade crossing fund.

26938. Jan. 26.—Authorizing Nelson & Fort Sheppard Ry. (G.N.R.) to build spur near Hall, B.C., for Mankin Lumber & Pole Co.

26939. Jan. 28.—Suspending, pending hearing by board, proposed charge of 10c. by Bell Telephone Co. for all calls through North Gower, Kemptville and South Mountain centrals.

26940. Authorizing Bell Telephone Co. to erect certain telephone lines in Windsor, Ont.

26941. Jan. 28.—Dismissing application of City of Windsor, Ont., for order fixing conditions upon which Bell Telephone Co. may carry on business within the city.

26942. Jan. 28.—Ordering G.T.R. to install bell at Main St., Komoka, Ont., by June 1, 20 per cent. of cost to be paid out of railway grade crossing fund; G.T.R. to build approach to side road in accordance with board's standard regulations.

26943. Jan. 24.—Authorizing C.P.R. to build highway crossing over its track near mileage 24, Revelstoke-Arrowhead Branch, B.C.

26944. Jan. 28.—Establishing collection and delivery limits of express companies in Winnipeg, Man.; effective Feb. 18, and rescinding order 22246, July 22, 1914.

26945. Jan. 25.—Establishing collection and delivery limits of express companies in Windsor, Ont., effective Jan. 28, and rescinding order 22315, Aug. 4, 1914.

26946. Jan. 29.—Approving agreement, Jan. 19, between Bell Telephone Co. and Tilbury East Tp., Ont.

26947. Jan. 28.—Extending to Mar. 1, time within which Pere Marquette Ry. shall erect station and freight shed at Tupperville, Ont.

26948. Jan. 29.—Ordering C.P.R. not to exceed 10 miles an hour over first public crossing south of Brome station, Que.

26949. Jan. 29.—Authorizing Union Bank of Canada to repay to M. J. Hawkinson, President and Manager Bienfait Commercial Co., Estevan, Sask., \$629 deposited with it to board's credit, with accrued interest, if any.

26950. Jan. 29.—Authorizing Saskatchewan Government to make highway over C.P.R. Reford Branch, between Secs. 28 and 33, Tp. 36, Range 21, w. 3rd meridian.

26951. Jan. 29.—Approving agreement, July 6, 1916, between Bell Telephone Co. and The Ferry Road Telephone Co., Lanark and Leeds Counties, Ont.

26952. Authorizing G.T.R. to build spur for Consumers Metal Co., Lachine, Que.

26953. Jan. 29.—Authorizing Canadian Northern Ry. to take whole of Lot F, according to plan of May 5, 1905, in North Bay, Ont., the property of John and F. Ferguson and Andrew Craig.

26954. Jan. 30.—Approving location of Canadian Northern Ry. station at Erickson, Man.

26955. Jan. 31.—Authorizing Greater Winnipeg Water District to lay pipe line under Canadian Northern Ry. at 3 points, near Winnipeg.

26956. Jan. 31.—Ordering Grand Trunk Pacific Ry. to install standard 2-car stock yard at Ardrossan, Alta., by Sept. 1.



26957. Jan. 30.—Relieving C.P.R. from providing further protection at Main St., Sutton, Que.  
 26958. Jan. 31.—Authorizing C.P.R. to appeal to Supreme Court of Canada from order 26393, Aug. 3, 1917, which ordered it to build public crossing over its right of way between Lots 8 and 9, Con. 5, Kirkpatrick Tp., Ont.

26959. Jan. 30.—Ordering that 35 per cent. of the cost of work on bridge at London St., Windsor, Ont., referred to in order 25053, June 13, 1916, be paid by city.

26960. Feb. 1.—Authorizing C.P.R. to build extension to spur for City of Moose Jaw, Sask.

26961. Feb. 1.—Authorizing C.P.R. to build spur for A. Carruthers Co., Moose Jaw, Sask.

26962. Feb. 1.—Authorizing Greater Winnipeg Water District to lay pipe line under Grand Trunk Pacific Ry. at point shown on plan.

26963. Feb. 1.—Authorizing C.P.R. to build spur for First National Investment Co., Roche Perce, Sask.

26964. Feb. 1.—Approving, for use in railway passenger cars within the Board's jurisdiction, the Pyrene fire extinguisher as shown on plan dated New York Sept. 16, 1914.

26965. Feb. 2.—Authorizing C.P.R. to build two tracks across G.T.R. overhead, at mileage 56.8, Galt Subdivision, Ont.

26966. Feb. 4.—Ordering G.T.R. to install standard 3-pen stock yard at Arnelgra, Alta., as soon as convenient in spring; to be completed not later than Aug. 1.

26967. Feb. 4.—Ordering Grand Trunk Pacific Ry., when view of tracks under coal chute, authorized by order 15899, Feb. 1, 1912, is obstructed by weather or other conditions, to protect workmen against movement of locomotive or car under plant by placing man on forward end of locomotive or car to warn workmen on tracks on which movement is being made.

26968. Jan. 30.—Ordering Canadian Northern Ry. to keep station waiting rooms at Bruderheim, Lamont, Chipman, Mundare, Lavoy, Ranfurly, Innisfree, Minburn, Manville, Islay, and Kitscoty, Alta., open and when necessary heated and lighted 30 minutes previous to scheduled arriving of passenger trains and to keep same open until departure of such trains, whether on time or not.

26969. Feb. 4.—Amending order 21167, Jan. 5, 1914, re Bell Telephone Co.'s tariffs.

26970. Feb. 6.—Authorizing G.T.R. to build track and siding, across diverted road allowance between Lots 30 and 31, Con. 6, Essa Tp., Ont., and connect with C.P.R. for interswitching, at Utopia.

26971. Feb. 9.—Relieving Toronto, Hamilton & Buffalo Ry. from providing further protection at Canboro Road, second crossing west of Fenwick station, Ont.

26972. Feb. 9.—Ordering Grand Trunk Pacific Ry. not to exceed 12 miles an hour on curves, with its trains from Lobstock Jct., to Chip Lake, Alta.

26973. Feb. 12.—Relieving C.P.R. from providing further protection at Wharf Road, Sand Point.

26974. Feb. 12.—Amending order 26939, Jan. 28, re charges for telephone interchange calls between North Gower, Kemptville and South Mountain, Ont.

26975. Feb. 12.—Approving clearances at coal tipples and works proposed over and adjacent to Grand Trunk Pacific Ry. spur to serve Great West Coal Co., Ltd., in s. e.  $\frac{1}{4}$  7, Tp. 53, Range 23, west 4th meridian, Alta.

26976. Feb. 9.—Approving location and plans of G.T.R. station to replace one at Pinkerton, Ont., destroyed by fire Sept. 1, 1917.

26977. Feb. 11.—Amending order 25914, Mar. 2, 1917, re highway crossing of C.P.R. between Secs. 28 and 33, Tp. 43, Range 11, west 4th meridian, Alta.

26978. Feb. 12.—Approving plan, etc., of work to be done on Dolbear-Gray drain, under G.T.R. in Cons. 2 and 3, Brooke Tp., Ont.

26979. Feb. 12.—Amending order 26908, Jan. 14, re C.P.R. highway crossing at Gwynne, Alta.

26980. Feb. 14.—Authorizing C.P.R. to build spur for Stewart Sheaf Loader Co., Winnipeg.

26981. Feb. 11.—Authorizing G.T.R. to build spur for A. H. Waite, Oro Tp., Ont.

26982. Feb. 11.—Authorizing Saskatchewan Government to make highway crossing over C.P.R. Kelfield Branch, in s. w.  $\frac{1}{4}$  Sec. 34, Tp. 34, Range 19, west 3rd meridian.

26983. Feb. 11.—Authorizing G.T.R. to build spur for D. W. Carter, Port Colborne, Ont.

26984. Amending order 25910, Mar. 2, 1917, re extension of Newlands St. across C.P.R. at Loughheed, Alta.

26985. Feb. 11.—Ordering G.T.R. to restrict operation of its trains over Ottawa Electric Ry. crossing at Booth St., Ottawa, to between 11 p.m. and 6 a.m., daily; except when necessary to make special movements between 6 a.m. and 11 p.m., G.T.R. first to notify O.E.R. of its intention to use crossing, and to protect movement in both directions. Between 11 p.m. and 6 a.m., O.E.R. to stop cars before passing over crossing; and conductor of each car to see tracks are clear, then signal to motorman to proceed.

26986 to 26987. Feb. 12.—Approving agreements between Bell Telephone Co. and Plum Hollow & Elolida Telephone Co., Leeds County, Ont., Mar. 29, 1917; and West Lake Telephone Co., Algoma District, Ont., Jan. 25.

26988. Feb. 11.—Authorizing C.P.R. to build spur for Martin-Senour Co., Vancouver, B.C.

26989. Feb. 15.—Authorizing C.P.R. to remove station agent at Pakowki, Alta.

26990. Feb. 16.—Ordering Kettle Valley Ry. to

erect standard 1-A station building, as required by general order 54, Jan. 6, 1910, at Manning siding, B.C., by May 1.

26991. Feb. 18.—Ordering G.T.R. and C.P.R. to make effective following train service between Ottawa and Montreal: Leaving Ottawa, G.T. 8.15 a.m. C.P. 9.15 a.m.; C.P. 3.30 p.m.; G.T. 4.30 p.m.; leaving Montreal, C.P. 8.15 a.m., G.T. 9.15 a.m.; G.T. 3.30 p.m., C.P. 4.30 p.m.; to commence Feb. 24, until May 1.

General order 218. Feb. 11.—Modifying general order 78 (order 14115), July 14, 1911, prescribing

rules and instructions for inspection and testing of locomotive boilers and their appurtenances, to be adopted by railway companies, subject to board's jurisdiction; same to remain in effect until Dec. 31.

General order 219. Feb. 9.—Amending general orders 95 and 160 to provide that during existence of Canadian Railway Association for National Defence, and continuance of zone divisions under chairmen, said chairmen, instead of railway companies, shall file copies of all embargo notices, with the board, within time limited by said orders.

## Railway Rolling Stock Notes.

The G.T.R., during January, received 4 snow ploughs from Russell Snow Plough Co.

The G.T.R. has ordered 25 switching locomotives to be built at its Montreal shops.

The Essex Terminal Ry. has ordered 2 mogul (2-6-0) locomotives, 106,000 lb., cylinders 19 x 26 in., from the Montreal Locomotive Works.

Chilian State Railways have ordered from Montreal Locomotive Works, 20 Mikado (2-8-2) locomotives, 195,000 lb., cylinders 22 x 28 in.

Rhodesian Railways, South Africa, have ordered from Montreal Locomotive Works, 9 mountain type locomotives, 172,000 lb., cylinders 22 x 24 in.

The Grand Trunk Pacific Ry. has bought 18 all steel Hart-Otis hopper dump cars from the Birds Hill Sand Co. They have been numbered 393700 to 393717.

The Grand Trunk Pacific Ry. has bought 13 express refrigerator cars from Federal Refrigerator Despatch Co. They have been numbered 6050 to 6062.

Canadian Government Railways have received 20 mikado locomotives from Canadian Locomotive Co., and some of them have been loaned to the G.T.R.

Canadian Government Railways have ordered 14 sleeping cars and 7 dining cars from the Pullman Co., to be delivered in May. The cost will, it is said, be about \$850,000.

The C.P.R., between Jan. 15 and Feb. 15, received 146 steel underframe coal cars and 3 decapod locomotives from its Angus shops; and 2 snow ploughs from its Winnipeg shops.

Canadian Government Railways have ordered 6 six-wheel switching locomotives, 251,000 lb. in working order, for the Intercolonial Division, from Canadian Locomotive Co., for delivery in June.

The Timiskaming & Northern Ontario Ry. expected to receive delivery of the 100 steel frame box cars of 40 tons capacity, ordered from Canadian Car & Foundry Co. in June, 1917, towards the end of February.

Canadian Government Railways have ordered 4 ten-wheel locomotives, 162,000 lb. in working order with tender, 3  $\frac{1}{2}$  ft. gauge, for the Prince Edward Island Division, from Canadian Locomotive Co., for delivery in June.

South African Railways have ordered, from Montreal Locomotive Works, 8 Mallet locomotives, 194,000 lb., cylinders 16  $\frac{1}{2}$  and 26 x 24 in.; 10 mountain type locomotives, 200,000 lb., cylinders 22 x 28 in.; and 20 mountain type locomotives, 195,000 lb., cylinders 22 x 26 in.

The Minister of Railways has under consideration the ordering of a large amount of additional rolling stock for Canadian Government Railways and for the Canadian Northern, and as well possibly as soon to be rented to other railways which are short of equipment. The orders of locomotives, passenger and

freight cars will probably aggregate about \$7,000,000 or more.

Contracts for rolling stock placed on this continent by Russian representatives, have, it is reported, been suspended indefinitely, but that there is little danger of their being actually cancelled, the amount involved being virtually guaranteed. The Russian situation seems to be changing almost daily, but it scarcely seems probable under existing circumstances, that any of the Russian rolling stock built on the American continent, and remaining undelivered, will be shipped.

Following are details of the 4 narrow gauge 10-wheel locomotives, which Canadian Government Railways have ordered from Canadian Locomotive Co., for the Prince Edward Island Ry.:

Gauge	3 $\frac{1}{2}$ ft.
Weight on drivers	74,000 lb.
Weight, total	95,000 lb.
Wheel base of engine, rigid	11 ft. 1 in.
Wheel base of engine, total	21 ft. 3 in.
Wheel base, engine and tender	43 ft. 9 in.
Heating surface, firebox	94.5 sq. ft.
Heating surface, tubes	1,054 sq. ft.
Heating surface, total	1,148.5 sq. ft.
Driving wheels, diar.	57 in. over tire
Driving wheel centres	cast steel
Driving journals	7 by 7 in.
Cylinders, diar. and stroke	16 $\frac{1}{2}$ by 22 in.
Boiler, type	extended wagon top
Boiler pressure	175 lb.
Tubes, no. and diar.	184—1 $\frac{3}{4}$ in.
Tubes, length	12 $\frac{1}{2}$ ft.
Brakes	Westinghouse American
Superheater	Locomotive Superheater Co., Schmidt Type A.
Valve gear	Walschaert
Weight of tender loaded	69,700 lb.
Capacity, water	3,000 imp. gall.
Capacity, coal	4 tons
Truck, type	4 wheel
Truck wheel, diar.	31 in.
Wheel, type	Steel centre, steel tired
Journal, diar. and length	4 by 6 $\frac{1}{4}$ in.
Brake beam	Simplex

Following are chief details of the 6 six-wheel switching locomotives which Canadian Government Railways have ordered from Canadian Locomotive Co., for delivery by June:

Weight, total	154,400 lb.
Wheel base	12 ft.
Wheel base, engine and tender	41 ft. 1 $\frac{1}{4}$ in.
Heating surface, firebox	132 sq. ft.
Heating surface, tubes	1,391 sq. ft.
Heating surface, total	1,523 sq. ft.
Driving wheels, diar.	51 in.
Driving wheel centres	cast iron
Driving journals	8 $\frac{1}{2}$ by 11 in.
Cylinders, diar. and stroke	21 by 26 in.
Boilers, type	Radial stay, straight top
Boiler pressure	180 lb.
Tubes, no. and diar.	158—2 in.; 21—5 $\frac{1}{8}$ in.
Tubes, length	12 ft. 5 in.
Brakes	Westinghouse American
Superheater	Locomotive Superheater Co., Schmidt type A.
Reversing gear	Casey-Cavin
Valve gear	Walschaert
Weight of tender loaded	96,600 lb.
Tank capacity	3,800 gall.
Tank, type	sloping back
Coal capacity	6 tons
Truck type	Arch bar
Truck wheel, diar.	34 in.
Wheel, type	Steel centre, steel tired
Journals, length and diar.	8 by 4 $\frac{1}{4}$ in.
Brake beam	Simplex

**Locomotive Men for France.**—The U. S. War Department has asked the Brotherhood of Locomotive Engineers to furnish 1,000 locomotive men, and 50 men for tank services, in France.



## Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Calgary & South Western Ry.**—The Alberta Legislature is being asked to incorporate a company with this title to build a railway from Calgary, southwesterly to the coal fields on Fish Creek, 70 miles. Clarke, Carson, McLeod & Co., Calgary, are solicitors for applicants.

**Capilano Timber Co.**—Since starting work in May, 1917, on its logging railway from east of the Vancouver creosoting works, North Vancouver, B.C., grading has been completed for 7.1 miles to a point opposite the Vancouver city water-works intake, and rails have been laid from the water front northerly for about three miles. The line is carried across the Capilano River by a 200 ft. Howe truss span. It is proposed to extend this line, as the company's logging operations develop, to a point with 5 miles of Howe Sound, 6 miles from Britannia and 13 miles from Squamish, on a gradient not exceeding  $1\frac{1}{2}\%$ . A suggestion was made in Vancouver recently that this line could be taken over by the Provincial Government, standardized and made part of the Pacific Great Eastern Ry. between North Vancouver and Squamish. G. C. Johnston is General Manager of the C.T. Co. (Sept., 1917, pg. 350.)

**Central Canada Ry.**—A Peace River Crossing, Alta., dispatch, Feb. 18, states that S. C. Hill, who is in charge of the construction of the bridge across the Peace River at that point, expects to have pier 8, the last of the deep water piers, completed by the end of March. At the beginning of the winter all the piers, pedestals and abutments had been completed, with the exception of piers 6, 7 and 8, the three deep water piers, for which the underwater parts had been built. Pier 6 is completed, and pier 7 is practically finished, while all the preparatory work is ready for pier 8. Each of these piers is located in 40 ft. of water, and is carried to rock foundations, while they rise to 33 ft. above low water. All the work done on the piers has been done within frame buildings erected on the ice over the site of the pier. These buildings are kept heated day and night so that all the concrete mixing and other work can be carried on under favorable conditions. The piers are protected from the pressure of ice by breakwaters on the upper side, each of which requires 500 tons of concrete in addition to large quantities of rock. It is expected that the steel work on the bridge will be erected during the summer. (Jan., pg. 12.)

**Edmonton, Dunvegan & British Columbia Ry.**—The Dominion Parliament is being asked to authorize the extension of the railway from Tp. 71, Range 7, west of the 6th Meridian, northwesterly to the boundary line between Alberta and British Columbia, passing the southerly end of Swan Lake, 65 miles.

**Grand Trunk Pacific Ry.**—Press reports from Prince Rupert, B.C., state that the company proposes to start construction on a brick passenger station there, to cost \$250,000. It is also proposed to build a locomotive house and machine shop at Cameron Cove, together with a wharf 1,000 ft. long, as a part of its Pacific terminal development. W. P. Hinton, Vice President and General Manager, has just returned to Winnipeg from a trip of inspection over the line. (Feb., pg. 57.)

**Great Northern Ry.**—The Vancouver, Victoria & Eastern Ry. & Navigation Co. is asking the Dominion Parliament to

ratify an agreement between the company and the Northern Pacific Ry. respecting the equal joint possession and use of the company's tracks from the International Boundary at Sumas, to Vancouver, B.C.

Plans for the construction of a large shed on the company's dock at Vancouver, have been deposited with the city's building inspector. The new shed will be 200 x 100 ft., and is estimated to cost \$30,000. (Feb., pg. 57.)

**Greater Winnipeg Water District Ry.**—A press report states that it is proposed to build a spur on Dawson Road, St. Boniface, and some additional siding accommodation during this year. (Jan., pg. 12.)

**Hudson Bay Ry.**—It was reported in Winnipeg, Feb. 21, that the Canadian Railway Association for National Defence had recommended the taking up of 300 miles of rails on this railway for use on other Canadian lines. (Jan., pg. 12.)

**Intercolonial Ry.**—Tenders are under consideration for the building of a frame mail, baggage and express building at Sackville, N.B., and for a frame station at St. Octave, Que.

A press report states that it is proposed to extend and improve the Richmond yards, Halifax, N.S., at an estimated cost of \$6,000. We are officially advised that this not the case.

**Kettle Valley Ry.**—A press report states that the contract for the building of the branch line from Princeton to the Copper Mountain Mines, B.C., will not be let for some time yet. The last date for receiving tenders was originally Jan. 21, but the absence in the east of J. J. Warren, President, is said to have delayed matters. (Feb., pg. 57.)

**Kettle Valley Ry.**—The Dominion Parliament is being asked to extend the time for the building of the following lines:—From near Summer Creek, on One Mile Creek, to the Copper Mountain and Voight Mining Camps, 15 miles; from Princeton; from Vernon, southerly or southeasterly, by Kelowna to Princeton; from near Tulameen, westerly along the Tulameen River, for 50 miles; from near Princeton to the International Boundary, at Osoyoos Lake; from Otter Summit, to the Aspengrove district, 30 miles. Authority is also asked to issue bonds for \$70,000 a mile in respect of the first of the above mentioned lines. (Feb., pg. 57.)

**Magdalen River Ry.**—The Quebec Legislature has extended the time for the building of this projected railway along the Magdalen River valley to Little Falls, and authorizing the building from that point southerly and westerly to connect with the Atlantic, Quebec and Western Ry., and the Canada and Gulf Terminal Ry. at Gaspé, or any other point on either or both railways, also the power if the railway is built to Gaspé, to build wharves, docks and other deep water terminals. F. Murphy, New Carlisle, Que., is Secretary of the company. (Jan., pg. 12.)

**Pacific Great Eastern Ry.**—A proposition is being considered by the business men of North Vancouver for the electrification of the section of the line from North Vancouver to Whytecliffe, 13 miles. As soon as the details have been completed locally, the matter will be taken up with the Provincial Government. No grading has been done between Whytecliffe and Squamish, the ocean terminal.

The line has been completed from Squamish to Clinton, 167.7 miles, and a train service was in operation until the severe weather at the beginning of January. One train was run as far as D'Arcy, mileage 86, Jan. 26, but subsequently all traffic was closed down, and operations of every kind suspended. Grading has been nearly completed through to Prince George, some track has been laid beyond Clinton, and some bridge work done, but everything in the way of operation and construction was stopped by B.C. Government orders, Feb. 13.

It is held that upon a settlement of matters with the contractors, and the assurance of a Dominion subsidy, the B.C. Government will complete the line to Prince George, and provide for its operation. The question of the projected extension from Prince George to meet the Edmonton, Dunvegan and British Columbia Ry. in the Peace River Valley will, it is said, also be taken up. (Feb., pg. 57.)

**Quebec & Atlantic Ry.**—The Quebec Legislature has incorporated a company with this title to build a railway from Quebec to Chicoutimi, thence to the provincial boundary near Cape St. Charles, with branch lines northerly and southerly from the main line, and to make connection in Quebec City with the National Transcontinental Ry. L. Caron, Quebec, is interested in the company. (Dec., 1917, pg., 471.)

**Rouge River Ry.**—The Quebec Legislature has incorporated a company with this title to build a railway from near Grenville, Que., northerly along the valley of the Rouge River, and on to the National Transcontinental Ry.

**Toronto, Hamilton & Buffalo Ry.**—The Hamilton, Ont., City Council has approved the draft lease to the company of a part of the Mountain Park property for yard extension purposes. The rental is fixed at \$933 a year, with an annual payment of \$300 for damage to trees. The company and the Board of Railway Commissioners have yet to approve of the lease.

The Dominion Parliament is being asked to authorize the company to build an extension of its present line from its northwesterly terminus at Hamilton to Toronto, and to authorize it to enter into any agreements with the C.P.R. and the G.T.R. for a term exceeding 21 years, authorized by sec. 364 of the Railway Act. This section covers agreements for operation, right of way and other matters connected with the operation of a railway, all of which to be made subject to the Board of Railway Commissioners' approval.

**Whitby, Ont.**—We are advised that the Dominion Military Hospitals Commission is building, with its own material and labor, some railway tracks on the Provincial Asylum premises at Whitby, Ont., over which it is intended to operate a small locomotive and passenger car for carrying invalided soldiers between the hospital and the G.T.R. main line station. The commission will use a portion of the G.T.R. freight siding which at present serves the hospital buildings.

The Military Hospitals Commission, we are officially advised, has entered into an agreement with the G.T.R. under which the company permits the commission to operate a donkey locomotive and street car over its siding from the Whitby Jct. station, on the main line, to the Military Convalescent Hospital, 0.75 of a mile.



The only track laid by the commission is a siding at the north end, on to which the locomotive and car will be run to leave the G.T.R. siding free for switching purposes. At the south end of the siding a small siding has been laid, running for a few hundred yards over to the hospital. This action was taken owing to the impassable condition of the roads in the locality during the late autumn, winter and early spring, making it practically impossible for motor vehicles to transport invalid soldiers to and from the station. (Feb., pg. 77.)

### Freight and Passenger Traffic Notes.

The Prince Edward Island Ry. cut off four trains Feb. 4 owing to shortage of locomotive power.

The C.P.R. ticket office in Ottawa, it is said, will be moved, May 1, from the corner of Spark and Elgin Sts., to 85 Spark St.

The C.P.R. steamship from Vancouver, B.C., for Seattle, Wash., started on Feb. 22 to leave Vancouver at 11 p.m. instead of 11.30 p.m.

The C.P.R. has started operating a daily train service on its Okanagan Valley line from Sicamore, B.C., in place of the tri-weekly service operated hitherto.

The White Pass & Yukon Ry., for the first time in its history, had to use a rotary snow plough on its White Horse-Cariboo section in January, according to a Vancouver report.

Railway companies generally are urging shippers to load cars to their full capacity and to load and unload them as speedily as possible, for the purpose of conserving rolling stock, and expediting traffic.

The Salisbury & Albert Ry.'s first train from Salisbury through to Albert, N.B., for nearly six weeks, was run Feb. 8, the section from Salisbury to Hillsboro having been opened about two weeks previously.

The C.P.R., it is reported, does not intend to run any special trains out of Winnipeg to the beaches on Lake Winnipeg next summer. An adequate schedule of regular trains will be provided to take care of the traffic.

The Canadian Government Railways car ferry between Borden, P.E.I., and Cape Tormentine, N.B., during the first three months of its operation, carried 885 loaded cars from the mainland to the island; 780 loaded and 175 empty cars from the island to the mainland.

A Winnipeg press report, Feb. 13, states that in the curtailment of passenger traffic throughout the west, under the direction of the Canadian Railway Association for National Defence, there will be no reduction in the service on branch lines where there is only one train a day operated.

The Board of Railway Commissioners has ordered the following passenger train service between Montreal and Ottawa from Feb. 24 to May 1:—Leaving Montreal, C.P.R., 8.15 a.m.; G.T.R., 9.15 a.m.; G.T.R., 3.30 p.m.; C.P.R., 4.30 p.m. Leaving Ottawa, G.T.R., 8.15 a.m.; C.P.R., 9.15 a.m.; C.P.R., 3.30 p.m.; G.T.R., 4.30 p.m.

The Alberta & Great Waterways Ry. put on a train service from Edmonton to the rail head 17 miles from McMurray, Alta., Jan. 28. The train runs over the Edmonton, Dunvegan & British Columbia Ry. to Carbondale, 14 miles, thence over its own tracks. The regular train service has hitherto been operated as far as Lac

la Biche, mileage 113 from Carbondale; the new terminus is at mileage 274.

Upon compliance with the Immigration Department's requirements, persons returning to Canada from temporary stays in the U.S. may obtain refund of head tax, in cases where it was collected from them and held on deposit during the time they were visiting in the U.S. The certificates must be returned to the U.S. immigration officer issuing them, who will authorize the payment of the tax deposited with the agent at the point where the ticket was issued.

The Great Northern Ry. is applying to the Board of Railway Commissioners to authorize the discontinuance of its train service between Cloverdale, Haselmer and Melrose, B.C. Appended to the application is a statement showing that the cost of operating the 7.8 miles between these points was \$305.58, while the receipts were \$120. This is a piece of line connecting the New Westminster Southern Ry., with its branch to Port Junction; and the Canadian Northern Pacific Ry. near Rosedale, and operated as part of the Vancouver, Victoria & Eastern Ry.

**Dominion Government Purchases.**—An order in council passed at Ottawa, Feb. 6, provides that the order in council of May 8, 1915, establishing the War Purchasing Commission, and the orders amending the same, shall apply to all purchases to be made by the different government departments, of any materials, supplies, stores, goods or articles of any kind. The War Purchasing Commission is directed to take into consideration, among other things, the existing arrangements for the purchase of supplies for the Canadian Government Railways, and any other purchases in respect to which it may be difficult, without detriment to the public interest, to enforce the order. Pending such consideration and report, the commission may, in respect of such purchases, modify the order to such an extent as may be deemed necessary or desirable in the public interest.

**Heating of Waiting Rooms.**—A circular issued by the Board of Railway Commissioners, on Feb. 11, requires railway companies to show cause, within 30 days of the receipt of the circular, why an order should not issue, requiring all companies, at agency stations where there is no night staff, to open station waiting rooms and, when necessary, provide heat and light, at least 30 minutes prior to the scheduled arriving time of all passenger trains, and to keep the waiting rooms open until the departure thereof, irrespective of whether the trains are on schedule time or not.

**Flagging Rules for Impassable Track.**—The Board of Railway Commissioners passed general order 216, Jan. 24, amending general order 188, of April 23, 1917, prescribing regulations for the uniform maintenance of way flagging rules for impassable track, by adding after the words "Frequent service shall mean 9 or more trains per diem," near the end of the order, the words "Fast train service shall mean a service at a speed of 35 miles or more per hour." General order 188 was published in full in Canadian Railway and Marine World for July, 1917, pg. 277.

**Right of Way Taxation.**—Judgment was given, on Feb. 4, in a British Columbia court, declaring that the land secured in the cities of Vernon and Armstrong, B.C., for right of way for a C.N.R. branch through those places was not taxable, but that all other land purchased by the company was taxable.

### A Loan Company's Unfortunate Railway Investment.

The Dominion Permanent Loan Co., Toronto, is being wound up under an order of an Ontario court. The company has been in existence for a number of years, F. M. Holland being its General Manager. It came forward in the railway financing field in 1901, at which time the late Hon. J. J. Stratton, M.L.A., of Peterborough, was its President, and the late T. P. Coffee, a Toronto lawyer, was largely interested. At that time Tracy W. Holland became interested in the charter of the Spokane & British Columbia Ry., incorporated in the State of Washington, and the D.P.L. Co. was the source from which it was financed. The S. & B.C. Ry., in the name of J. R. Stratton, T. P. Coffee, T. W. Holland and others, secured the incorporation of the Kettle Valley Ry. for the purpose of building the Canadian end of its projected railway. This line was surveyed from Grand Forks, southerly to the International Boundary, about three miles, which, with the extension to Republic in Washington, was opened for traffic in 1903. The company subsequently acquired, after considerable litigation with the Great Northern Ry. over some Indian reserve property, a right of way from Republic to Spokane, but has never done any construction. The company secured power from the Dominion Parliament for the building of lines east and west and north from Grand Forks, but nothing was done in the way of construction until the C.P.R. became interested, and took over practically the whole of the company's Canadian interests.

The same interests as were associated with the K.V. Ry. subsequently became interested in the old Musquodoboit Valley Ry. in Nova Scotia, and projected in connection with it the Halifax North Eastern Ry., together with a bridge across the strait to Cape Breton Island. After futile attempts to float bonds in England, the project was abandoned, and the line has been built by the Dominion Government as an Intercolonial Ry. branch.

The Dominion Permanent Loan Co.'s assets are reported to consist largely of the 30 miles of the Spokane & B.C. Ry., in the State of Washington, with the right of way from Republic to Spokane; some rolling stock; an interest in a land company, and some claims against the C.P.R. in respect of the Kettle Valley Ry. The S. & B.C. Ry. was carried by the loan company as an asset valued at \$4,000,000.

**Shipment of Silver Spruce Prohibited.** Under the War Measures Act, 1914, the Dominion Government has made regulations by which no railway or other transportation company shall accept any shipment of silver spruce, unless the bill of lading is accompanied by a certificate that such shipment contains no silver spruce suitable for the manufacturing of aeroplanes. This regulation applies to all silver spruce offered for shipment to any consignee except the Imperial Munitions Board. The penalty for infraction of the regulation is \$500.

**Vancouver Transportation Club.**—Following are the officers for the current year:—President, R. Greenhalgh; First Vice President, E. Farr; Second Vice President, C. H. Daniels; Directors: H. S. Durkee, J. A. Jewett, A. B. Coulet, R. Hay, R. M. McLean, W. G. Connolly, E. G. Gordon. The honorary officers are: President, R. Marpole; First Vice President, D. E. Brown; Second Vice President, H. Swinford.



# Mainly About Railway People Throughout Canada.

Lady Mann has taken a house on Westmount Boulevard, Montreal, and will spend some time there with her son.

**J. E. Quick**, General Baggage Agent, G.T.R., will it is said, retire on June 30 next under the company's pension rules.

**C. N. Mousarrat**, Chairman, Quebec Bridge Commission, has been elected a director of Canada Foundries & Forgings, Ltd., Welland, Ont.

**J. H. D. Munson**, K.C., of Winnipeg, for many years Chief Counsel there for the Canadian Northern Ry. and the Winnipeg Electric Ry., died on Feb. 8, aged 59.

**L. Mulkern**, Division Freight Agent, C.P.R., St. John, N.B., was in London, Ont., Feb. 13, to attend the funeral of his father, M. Mulkern, who died there aged 84.

**Sir John Wolfe Barry**, who made the plans for the projected bridge across the second narrows of Burrard Inlet, Vancouver, B.C., died in London, Eng., recently, aged 82.

**G. H. Ham**, of the C.P.R. headquarters staff, Montreal, was one of the principal speakers at the recent annual meeting of the Texas Passenger and Ticket Agents, at Dallas, Texas.

**E. O. Parent**, G.T.R. agent at Pembroke, Ont., is reported to have been given a permanent pass on all the company's eastern lines, in recognition of 15 years efficient service.

**W. J. Harmer**, formerly C.P.R. telegraph operator at Banff, Alta., and latterly Deputy Minister of Railways and Telephones for Alberta, has been appointed to the Dominion Senate.

**F. L. McPherson**, District Engineer, British Columbia Public Works Department, Nelson, is reported to have been appointed Assistant to the Provincial Engineer of Public Works, Victoria.

**D. T. Main**, Works Manager, C.P.R., Winnipeg, has been elected a member of the Canadian Society of Civil Engineers, and not an associate member, as incorrectly stated in our February issue.

**Norman L. Hardy** is reported to have been appointed acting Deputy Minister of Railways and Telephones for Saskatchewan, ex-Deputy Minister W. J. Harmer having been appointed a Senator.

**J. E. Proctor**, District Passenger Agent, C.P.R., Regina, Sask., was presented with some silverware by the local staff, Jan. 30, on leaving for Calgary, Alta., where he has been appointed to a similar position.

**E. O. Grundy**, who retired recently from the position of General Freight and Passenger Agent, Quebec Central Ry., Sherbrooke, Que., and who has been seriously ill, was reported out of danger early in February.

**John Molloy**, of Winnipeg, who died in St. Boniface Hospital, Feb. 18, aged 81, went to Winnipeg in 1872, and was on C.P.R. construction service for some time, afterwards engaging in Dominion land surveying.

**Mrs. Anna S. Lund Hertzberg**, widow of the late Col. P. H. Hertzberg, Royal Engineers, and mother of A. L. Hertzberg, M.Can.Soc.C.E., Engineer, Ontario District, C.P.R., Toronto, died at Christiania, Norway, recently.

**F. P. Brady**, General Manager, Western Lines, Canadian Government Railways, who spent a short time in Victoria Hospital, Montreal, at the end of January,

for treatment, returned to duty at Winnipeg early in February.

**J. P. McNaughton**, General Sales Manager, Dominion Iron & Steel Co., Montreal, was married in London, Eng., recently, to Nursing Sister Lida Duff, C.A.M.C., daughter of the late John Duff and Mrs. Duff, of Sydney, N.S.

**W. P. Hinton**, Vice-President and General Manager, Grand Trunk Pacific Ry., and C. H. Nicholson, Manager Grand Trunk Pacific Coast Steamship Service, were the principal guests at a luncheon given by the Transportation Club of Vancouver, B.C., Feb. 8.

**C. C. Rosenberg**, Secretary of the Railway Signal Association since 1906, died at Bethlehem, Pa., Feb. 2, aged 63. He entered Lehigh Valley Rd. service in 1875, and held various positions, including those of Supervisor of Bridges and Buildings, and Signal Engineer.

**Jas. A. Wilson**, travelling auditor, Canadian Northern Ry., while boarding a train at Flanders, Ont., recently, slipped and fell beneath the wheels, being killed instantly. His home was in Winnipeg, where he is survived by his widow, four sons and a daughter.

**Mr. Justice R. E. Harris**, of the Nova Scotia Supreme Court, formerly President, Nova Scotia Steel & Coal Co., and now acting as one of the arbitrators of the value of Canadian Northern Ry. common stock, has been appointed Chief Justice of Nova Scotia.

**J. J. Beck**, Superintendent, Union Station, Toronto, who has been in railway service for 46 years, is stated in press reports as likely to retire in the near future. It is probable, however, that he will remain in office at least until the completion of the new union station.

**W. R. Smith**, M.Can.Soc.C.E., Chief Engineer and General Manager, Edmonton, Dunvegan & British Columbia Ry., Alberta & Great Waterways Ry. and Central Canada Ry., has returned to Edmonton, Alta., after a successful operation for appendicitis at Rochester, Minn.

**S. Newmarch**, who died suddenly at Beaconsfield, B.C., Feb. 3, was born in Montreal, and was engaged for several years in railway construction in the west. He acted as superintendent of a party of construction men sent from Canada in connection with the construction of a railway at Kola Bay, Russia.

**L. K. Silcox**, who has been appointed Master Car Builder, Chicago, Milwaukee & St. Paul Ry., Milwaukee, Wis., was, from 1909 to 1912, shop engineer, Canadian Car & Foundry Co., Montreal; 1912 to 1916, Mechanical Engineer, Canadian Northern Ry., Toronto, and since 1916, Mechanical Engineer in charge of car work, Illinois Central Rd., Chicago, Ill.

**John Try Harwood Ferguson**, Purchasing Agent, C.P.R., Vancouver, B.C., died at Calgary, Alta., Jan. 25, from tumor on the brain. He was born in Sept., 1880, and entered the C.P.R. Purchasing Department at Montreal, in July, 1896, since when he was, to Jan. 1, 1913, junior clerk; Jan. 1 to Nov. 23, 1913, chief clerk; Nov. 23, 1913, to Mar. 1, 1917, Assistant Purchasing Agent, Calgary, Alta.; Mar. 1 to June 1, 1917, Assistant Purchasing Agent, Vancouver, B.C., and from that date, Purchasing Agent there.

**G. D. Wadsworth**, who was appointed General Freight and Passenger Agent, Quebec Central Ry., Sherbrooke, Que., re-

cently, was born there, July 15, 1884, and entered Q.C.R. service in Nov., 1899, since when he has been, to Nov., 1900, messenger boy; Nov., 1900, to Oct., 1904, clerk in car record office, and stenographer to Superintendent; Oct., 1904, to Jan., 1906, clerk and stenographer, General Freight and Passenger Department; Jan., 1906, to Mar., 1916, chief clerk, same department; Mar., 1916, to Jan., 1918, Assistant General Freight and Passenger Agent, all at Sherbrooke, Que.

**Walter U. Appleton**, who has been appointed Superintendent of Motive Power, Canadian Government Railways, Moncton, N.B., was born there, Jan. 29, 1878, and entered Intercolonial Ry. service, Oct. 13, 1890, since when he has been, to Sept., 1895, junior clerk; Sept., 1895, to May, 1899, machinist apprentice; 1899 to 1909, clerk; 1900 to 1901, machinist; 1903 to 1909, chief clerk to Superintendent of Motive Power; 1909 to 1913, Assistant to Superintendent of Motive Power; 1913 to Feb., 1918, General Master Mechanic, I.R. Co., and latterly Canadian Government Railways, all at Moncton, N.B.

**Sir William D. Reid**, a director, and formerly President, Reid Newfoundland Co., who was arrested at St. John's, Nfld., recently, on a charge of criminally libelling a member of the Colonial Government, appeared before the local magistrate there, Feb. 18, when the case was dismissed, the magistrate being reported as stating that the complainant failed to produce evidence of others or himself to deny the inuendo complained of, that he was in collusion for the purpose of promoting confederation, or that the expenses of the trip to Canada and the U. S., were defrayed by the Reid Newfoundland Co.

**G. R. Joughins**, Superintendent Rolling Stock, Canadian Government Railways, Moncton, N.B., who, as announced in our last issue, has retired under the pension rules, was presented with a fitted club bag, a gold watch chain, and an address by the railways shops' staffs, Jan. 26. He was born at Dublin, Ireland, May 17, 1885, and entered Canadian Government Railways service, May 1, 1898, since when he has been, to Aug. 31, 1901, Mechanical Superintendent; Apr. 15, 1904 to Oct. 1, 1915, Superintendent of Motive Power; Oct. 1, 1915, to his retirement, Superintendent Rolling Stock, all at Moncton, N.B.

**John Gray**, who died at Toronto, Jan. 30, from cancer of the stomach, was born at River Beaudette, Que., Sept. 28, 1865, and entered G.T.R. service, Oct., 1880, since when he was to 1883, assistant at Parkhill, Ont.; 1883 to 1889, operator and ticket clerk at various points; 1889 to Jan., 1913, agent at Milverton, Southampton, Hespeler, Ingersoll, St. Catharines, Ont., Buffalo, N.Y., and Hamilton, Ont., successively; from Jan. to Feb. 1913, General Agent, Toronto, and from Feb. 13 to the time of his death, Freight Agent there. The funeral at Toronto, Feb. 1, was attended by a large number of G.T.R. and other transportation officials of Toronto and district.

**Edward Fitzgerald**, who was made a Commander of the Order of the British Empire, recently, was born at Ottawa, Nov. 9, 1874, and educated at the Model School there. He entered C.P.R. service in July, 1892, as junior clerk in the Purchasing Department, and was appointed Commissary Agent Oct., 1898; Assistant to Purchasing Agent, May, 1905; Assist-



ant General Purchasing Agent, Mar., 1910; and assigned to British Government service as officer in charge of the War Office Purchasing Agency in Canada, May, 1915; Purchasing Agent, Imperial Munitions Board, Dec., 1915, and Assistant to Chairman, Imperial Munitions Board, June, 1916.

**Ejnar L. Landorph**, who has been appointed Resident Engineer, C.P.R., Kenora, Ont., was born at Copenhagen, Denmark, Sept. 9, 1888, and during the summer of 1910 acted as assistant teacher of surveying, etc., at the University of Copenhagen. In Jan., 1911, he graduated from that university as a civil engineer. He entered C.P.R. service June 24, 1912, as draftsman at Winnipeg, and from Nov. 7, 1912, to Apr. 30, 1913, was transitman, Brandon, Man.; May 1, 1913, to Nov., 1915, Resident Engineer, Brandon, Man.; Nov., 1915, to Apr. 1, 1916, Resident Engineer, Kenora, Ont.; Apr. 1, 1916, to Feb. 1, 1918, Engineer of Water Service, Winnipeg.

**John Leslie**, Comptroller, C.P.R., Montreal, who has been placed in entire charge of the accounting department, was born at Toronto, and entered railway service with the Toronto, Grey & Bruce Ry., as assistant cashier, and was subsequently cashier, accountant and auditor, successively. On the absorption of the railway by the C.P.R. in 1893, he was placed in charge of the accounts on the Ontario lines, at Toronto, until March, 1895, and until 1897 was at Montreal. From 1897 to Oct. 2, 1899, he was chief clerk to Auditor; Oct. 2, 1899, to Dec. 1, 1908, Auditor of Disbursements; Dec. 1, 1908, to Oct. 1, 1914, Assistant Comptroller, at which latter date he was appointed Comptroller.

**J. W. N. Johnstone**, who has resigned the position of General Passenger Agent, Reid Newfoundland Co., St. John's, Nfld., was born at Campobello, N.B., Oct. 4, 1878, and entered transportation service in the General Freight Department, C.P.R., St. John, N.B., serving in various capacities in that department from junior clerk to assistant to the chief clerk, until Feb., 1902, when he entered Reid Newfoundland Co.'s service as chief clerk to the General Freight Agent, St. John's, Nfld., was appointed General Passenger Agent, Aug. 21, 1906, and for a short time at the end of 1917, was also Assistant to the President (Sir William D. Reid). It is reported that he has been appointed private secretary to Sir William Reid, who has not been President since the last annual meeting.

**George Edward Smart**, who has been appointed Superintendent of Car Department, Canadian Government Railways, Moncton, N.B., was born at Edinburgh, Scotland, Dec. 23, 1873. From 1892 to 1897 he was in various positions in car shop, G.T.R., Montreal; 1897 to 1904, car inspector, G.T.R., Montreal; 1904 to 1906, General Inspector Heating and Lighting, Eastern Lines, C.P.R., Montreal; 1906 to 1909, General Car Inspector, Eastern Lines, C.P.R., Montreal; 1906 to 1909, General Car Inspector, Eastern Lines, C.P.R., Montreal; 1909 to Oct. 1, 1913, Divisional Car Foreman, in charge of passenger and freight car work, Eastern Division, C.P.R., Montreal; Oct. 1, 1913, to Feb., 1918, Master Car Builder, Intercolonial Ry., and latterly Canadian Government Railways, Moncton, N.B.

**John Alexander Dunbar Vickers**, Vice President and General Manager, Western Lines, American Express Co., Chicago, Ill., died there Feb. 16, after a long illness. He was born at Toronto, May 22, 1858, and educated at Upper Canada College. He entered express service at To-

ronto in 1879, and was, to 1889, Superintendent, Vickers Express, and Vickers Express Co., Ltd., of which his father was the founder; 1889 to 1891, Superintendent, Canadian Lines, American Ex. Co., Buffalo, N.Y.; 1891 to 1914, Superintendent, and afterwards General Manager, National Ex. Co., Chicago, Ill.; 1914 to the date of his death, Vice President and General Manager, Western Lines, American Ex. Co., Chicago, Ill. The funeral took place at Toronto, Feb. 20, and was attended by a number of express and transportation officials. V. G. R. Vickers, Vice President, The Holden Co., Ltd., Montreal, and formerly General Superintendent, Foreign and Money Order Department, Dominion Ex. Co., is a brother.

**Ralph Budd**, who has been appointed Executive Vice President, Great Northern Ry., St. Paul, Minn., was born at Waterloo, Ia., Aug. 20, 1877, and entered railway service in 1899, since when he has been, to 1902, consecutively draftsman, rodman, levelman, instrument man and Assistant Engineer, Chicago Great Western Ry.; 1902 to 1905, successively Roadmaster, General Superintendent of Construction, and Division Engineer, St. Louis Division, same road; 1905, Division Engineer, same road, Chicago, Ill.; 1906 to 1909, Chief Engineer, Panama Rd., Colon, Panama; 1909 to 1910, Chief Engineer, Oregon Trunk Ry.; 1910 to May 1, 1914, also Chief Engineer, Spokane, Portland & Seattle Ry.; 1911 to Jan. 1, 1913, also Chief Engineer, Spokane & Inland Empire Ry., and Spokane Traction Co.; Jan. 1 to Feb. 15, 1913, Assistant to President, Great Northern Ry., St. Paul, Minn.; Feb. 15, 1913, to May 1, 1914, Chief Engineer, same road; May 1, 1914, to his present appointment, Assistant to President, same road.

**William P. Kenney**, who has been appointed President, Great Northern Ry., St. Paul, Minn., was born at Watertown, Wis., Jan. 10, 1870, and entered railway service in Nov., 1888, since when he has been, to 1889, telegraph operator, Chicago Great Western Ry.; 1889 to Sept. 1, 1890, yard clerk and clerk in local freight office, same road, Minneapolis, Minn.; Sept. 1, 1890, to May, 1892, clerk and stenographer to General Agent, same road, Minneapolis, Minn.; 1892 to 1899, Contracting Agent, same road; 1899, Contracting Agent, Empire Line; 1900 to Sept. 15, 1902, chief clerk, General Freight Department, St. Paul & Duluth Ry., absorbed by the Northern Pacific Ry.; Sept. 15, 1902, to Apr. 1, 1903, chief clerk, General Freight Department, Great Northern Ry.; Apr. 1, 1903, to Jan., 1905, Assistant General Freight Agent, same road; Jan., 1905, to May, 1908, Assistant to Fourth Vice President, same road; May, 1908, to Sept., 1911, Assistant Traffic Manager, same road; Sept., 1911, to Oct., 1912, General Traffic Manager, same road; Oct., 1912, to date of his present appointment, Vice President in charge of traffic.

**Sir Percy Girouard**, K.C.M.G., D.S.O., is the subject of a unique distinction, in the petition of a mass meeting of residents of British East Africa, to the British Government, that he be appointed Military Governor of the Protectorate, with full powers to organize the local efforts for the further prosecution of the war, and especially to provide for the immediate requirements of the armies in Palestine and Mesopotamia. Sir Percy was born in Montreal, and gained railway engineering experience on the C.P.R. staff. He entered the British Army in 1888, and served in all parts of Africa during the several wars there of recent

years, his knowledge of railway work being especially utilized. He was Governor and Commander-in-Chief of the British East Africa Protectorate from 1909 to 1912, when he joined the board of directors of Sir W. G. Armstrong, Whitworth & Co., Elswick, Eng. During the present war, his services were taken advantage of for some time on the continent, but it was considered that there was more to be gained by having him in England, and he returned to his former position.

**A. R. Macgowan**, A.M.Can.Soc.C.E., who has resigned as Superintendent, District 5, Intercolonial Division, Canadian Government Railways, Edmundston, N.B., to enter the Delaware & Hudson Co.'s service at Carbondale, Pa., was presented by the local staff, Feb. 8, with a fitted leather club bag, with a cut glass jewel case and cameo necklace, for Mrs. and Miss Macgowan, respectively. He was born at Moncton, N.B., Jan. 16, 1883, and entered railway service in 1899, since when he has been, to June, 1902, clerk in Accountant and Treasurer's office, Intercolonial Ry., Moncton, N.B., June, 1902, to Mar., 1905, rodman and transit man, I.R.C., Moncton, N.B., Mar., 1905, to Jan., 1906, contractor's engineer, North Maine Seaport Ry., Bangor, Me.; Jan. to Nov., 1906, Resident Engineer, Somerset Ry., Moosehead, Me.; Nov., 1906, to May, 1915, Assistant Engineer, I.R.C., Moncton, N.B.; May, 1915, to Jan., 1916, Division Engineer, I.R.C. & Prince Edward Ry., Moncton, N.B.; Jan. to July, 1916, Principal Assistant Engineer, Canadian Government Railways, Moncton, N.B.; July, 1916, to Feb., 1918, Superintendent, District 5, Intercolonial Division, C.G.R., Edmundston, N.B.

**Temperance Act Infractions.**—John Gossip, a Canadian Northern Ry. forwarding agent at Ottawa, was fined \$304 in the Ottawa Police Court, Feb. 1, for two breaches of the Ontario Temperance Act. The first charge was of shipping by public conveyance a package containing intoxicating liquor addressed other than to the actual consignee, and the second was for having liquor in a public place.

**Trespassing on Railway Tracks.**—A Victoria, B.C., magistrate, on Feb. 6, fined a shipyard employe \$5 for trespassing on the Esquimalt & Nanaimo Ry. in making a short cut to his work. The company desires to prevent walking across, or along, its tracks, with a view to lessening accidents, and the case was brought before the courts as an example.

**Fire Extinguishers on Electric Railway Cars.**—The Board of Railway Commissioners issued a circular Feb. 25 stating it was considering the advisability of requiring electric railways to provide fire extinguishing apparatus on passenger carrying cars, including therein, combination cars, if any, and directing electric railway companies to show cause, within 30 days of the receipt of the circular, why such requirements should not be made effective.

**Toronto Ry. Track Assessment.**—The Ontario Railway and Municipal Board on Feb. 20 dismissed the company's appeal against the city's assessment of \$118,950 on its poles, ties and rails. It was contended for the company that this was the first time that the city had assessed the structures and fixtures, and that the company could only be assessed for the rails on the streets. For the city, it was urged that there was a right to levy the assessment, the fact that it had not previously been levied being no reason why it should not have been.



## Canadian Pacific Railway Western Lines, Construction, Betterments, Etc.

Grant Hall, Vice President and General Manager, Western Lines, C.P.R., was in Montreal, recently, arranging for the appropriations for work for 1918. We are officially advised that the following are the principal works to be undertaken:—

Approximately 500 miles of track will be rebalasted and a large amount of ditching, cleaning cuts, riprapping, and widening of embankments will be undertaken.

Some 400,000 new tie plates and 205,000 new rail anchors will be bought and installed.

Eleven reinforced concrete bridges will be built, as follows:—Manitoba District, Nos. 27.6, 29.5 and 33.8, Carberry Subdivision; No. 92.5, Glenboro Subdivision; No. 61.6, Emerson Subdivision; No. 27.3, Minnedosa Subdivision; No. 2.7, Larivière Subdivision. Saskatchewan District:—No. 118.23, Neudorf Subdivision; No. 69.8, Outlook Subdivision; Nos. 13.6 and 42.9, Lanigan Subdivision.

Two bridges will be filled, viz.: No. 14.6, Cardston Subdivision, and No. 70.7, Wetaskiwin Subdivision, Alberta District.

A considerable amount will be expended in repairing and renewing bridges, including the rebuilding of No. 62.8, Lanigan Subdivision, and No. 130.5, Hardisty Subdivision, Saskatchewan District.

Fifteen new stations will be built, as follows:—Oakbank, Man.; Tramping Lake, Pimate, Battiam, Lanier, Bideford, Shackleton, Sask.; Ames, Hayter, Whitla, Raymond, Magrath, Travers, Cowper, and Kirriemuir, Alta.

Thirty new section houses will be built. Additional yard tracks will be built at Swift Current, Sask., and at Ogden, Camrose and Coronation, Alta.

Large stockyards will be built at Swift Current and Moose Jaw, Sask., and small ones at 12 other points.

Icehouses will be built at Regina and Moose Jaw, Sask., Alyth and Kamloops, B.C.

The machine shop and boiler room at Weyburn, Sask.; the boiler house at Swift Current, Sask., and the car shops at Moose Jaw, Sask., will be extended; the passenger car shop at Vancouver will be extended and repaired; mastic floor will be laid in the Winnipeg locomotive shops, and boiler washing plants will be built at Kenora, Ont., and Moose Jaw, Sask.

The outward freight sheds at Regina, Sask., will be extended.

Coaling plants will be built at Broadview, Man.; Moose Jaw, Sask., and Lethbridge, Alta.

A new water supply will be installed at Gull Lake, Sask., and 12 existing pipe lines at various points will be relaid.

Automatic protection signals will be installed at Rosser, Poplar, Bradbury, Winnipeg Beach and Whytefold, Man.

Approximately 1,600 ft. of the Connaught tunnel will be lined.

A new transfer slip will be built at Vancouver.

It is said that the various betterments on the western lines this year will cost about \$6,000,000.

**Manitoba District.**—Tenders are under consideration for the erection of 13 no. 4 section houses at various points on the Manitoba District, and 1 standard station building at Oakbank, Man.

**Alberta District.**—A press report states that arrangements are being made to continue construction of the line from near Manyberries, Alta., easterly to Alta-

wan, on the Saskatchewan-Alberta boundary, 32 miles. This is the only unconstructed section of what has been spoken of for years as the Weyburn-Lethbridge line.

The transfer track connecting the C.P.R. at Stettler, Alta., with the Canadian Northern Ry., was reported completed Jan. 31.

**British Columbia District.**—The Vancouver City Engineer, in a report to the Mayor, Feb. 20, said: "If the C.P.R. should prove its right to maintain a bridge at Kitsilano, Vancouver, when they obtained this right, the question is did it carry with it the proviso that it must meet in the future the requirements of navigation as at present existing." The Kitsilano bridge is provided with a swing span, and as the Dominion Government has provided a 21 ft. channel from the bridge, it is desired to complete the channel under the bridge, and the question is who is to meet the cost. If the C.P.R. was to take care of navigation as it developed, the city claims the C.P.R. has to put in a new swing span sufficient to meet the present needs of navigation.

### Canadian Northern Railway Construction, Betterments, Etc.

A press dispatch states that one of the first pieces of construction work which the Dominion Government will undertake in connection with the C.N.R., will be to establish a connection between this line and the National Transcontinental Ry. This connection would start from Longue Lac, at 673 miles from Toronto, and extend to the National Transcontinental Ry. at Kowkash, 871 miles from Quebec.

The new station at Fort William, Ont., was opened Feb. 20. It is built of brick, with Tyndall stone trimmings and concrete foundations. The main portion, 41 x 57 ft., is two stories high with basement. The balance of the building is 30 x 80½ ft., and one story high. This portion is taken up by the baggage and express departments. On the ground floor of the main portion are a large general waiting room, women's waiting room, ticket office, men's and women's lavatories, a hall and stairway and a vestibule between the street entrance and general waiting room. The first floor contains office accommodation and agent's quarters. The floors throughout are of maple and the finish of oak. The building is steam heated and electric lighted.

The St. Boniface City Council special bridge committee has approved of the changes proposed to be made to the C.N.R. Provencher St. bridge. The new structure will be 14½ ft. higher than the level of the traffic approach. It is expected that the work will be completed by July 1.

A Munson, Alta., press dispatch, states that the company purposes to lay out at an early date a terminal yard, and to erect divisional buildings, and that tenders for the erection of a 4-stall locomotive house are under consideration. Munson is at mileage 303 on the line from Saskatoon to Calgary, near the junction with the line from Vegreville to Calgary. Surveys are reported to have been made for laying of a second track between Munson and Wayne, 19 miles, to provide sufficient track accommodation for the development of the colliery traffic from the Drumheller mining area. The present

track, it is stated, is to be relaid with 85 lb. rails. The running of about 30 freight trains a day is stated to be necessary in order to take care of the present traffic, and with the opening up of additional collieries between Munson and Wayne, this traffic is expected to increase considerably.

The Board of Railway Commissioners has authorized the building of a spur line to the Northwest Biscuit Co.'s factory at Edmonton, Alta.

Officers of the company in Vancouver, B.C., are reported to have stated that satisfactory progress is being made with the completion of the terminal station on False Creek flats. It is expected that trains will be operated into the station early in the spring.

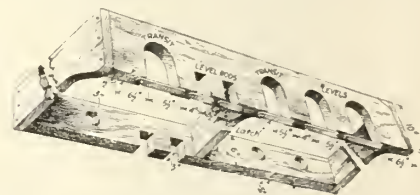
It was expected that the freight sheds at False Creek, Vancouver, would be completed by Feb. 28. The connecting tracks from the Great Northern Ry. over the fill, to the C.N.P. Ry. sheds is reported as about finished.

The filling on the reclaimed area of the False Creek flats, Vancouver, is being rapidly gone on with, and is now almost up to the permanent grade for at least half the distance from the south end of the bridge to what was the former shore of the upper False Creek basin.

The bascule bridge over the Selkirk Water, Victoria, connecting with the terminal areas being developed on the old Songhees Reserve, was reported completed Feb. 7. The bridge, when open, gives a clear span of 70 ft. (Feb., pg. 57.)

### Stand for Engineering Instruments.

All the trouble and waste of time in removing surveying instruments from their tripods and placing them in their boxes at the end of the day's work can be avoided if an office is provided with an instrument stand such as is shown in the accompanying illustration. This inexpensive expedient has been used by the



writer on several jobs, and has been found satisfactory in every case. The construction is very simple. Slots cut into a 1½ x 10-in. plank provide recesses into which the tripods and levels may be set. The tripods are then held in the slots by metal latches hinged at one side and fitting over a nail at the other. The feet of the tripods and the lower ends of level rods fit into holes cut in another plank set lower.—G. W. McAlpin, Junior Engineer, N.S., Engineers' Field Office, Mayville, Ky., in Engineering News-Record.

**Canadian Government Railway Employes Killed.**—The latest information available shows that in the Halifax, N.S., explosion disaster of Dec. 6, 58 employes of the Canadian Government Railways were killed, and also 15 ex-employes who had retired on pension. Details of the non fatal casualties among the employes, which were numerous, are not available.

G. J. Desbarats, C.M.G., Deputy Minister of Naval Service, is announced to have been appointed a member of an international board to settle outstanding questions between Canada and the U.S. in connection with fisheries.



# The Work of the Canadian Railway Association for National Defence.

A. E. Warren, Chief Operating Officer, Railways Department, Ottawa, has been added to the association's administrative committee.

## Canadian Transportation Conditions and the War.

The following is the association's first bulletin:—Every traveller and every shipper affects, one way or another, the two main problems of the Canadian railways: fuel consumption and freight car economy. In asking the support of the public for its work, the association offers the following summary of conditions leading to and arising out of its formation: The crisis in the American coal situation had made it necessary to assure the United States that coal supplied to Canada was being used for necessary purposes only. To reduce Canadian coal consumption, the railways had been asked to coordinate their services so as to prevent any overlapping or duplication of service which still might exist in Canada. The formation of the association resulted, in Oct., 1917. To that date the Dominion's domestic traffic had been kept moving expeditiously, despite war conditions, with the exception of one brief period due to an unprecedented period of cold weather and heavy snowstorms in the winter of 1916-17. The international freight train traffic had been satisfactory up to the time when certain organizations outside of Canada broke down owing to the special difficulties under which they were operating.

Meantime Canadian railways had made progress as follows, in meeting war conditions in their own sphere before the formation of the association. They had carried 400,000 troops from recruiting points to concentrating centres and from concentration centres to training grounds, and training grounds to ports of embarkation. These men had been fed and "slept" better than were the troops of any other belligerent nation mobilizing over such an extended area. Over 70,000 laborers for Europe had been carried across the continent. These also had been fed and "slept" under railway management. The colossal new burden of coal carrying, due to the taking of coal vessels from the St. Lawrence and the lakes for ocean service, had been assumed. The reduction of staffs to furnish army recruits had been met, in part, by adapting women to certain forms of work and leaving some in abeyance—a step which has contributed largely to the present urgent need for extra labor for the season's work on the railways. The sudden shiftings and reversals in the tides of traffic—in their general direction and character—had been dealt with successfully. First, the onset of a northbound movement of raw materials inbound for Canadian munition factories; second, the development of inter munition plant traffic in partly finished shells; third, the increased volume of food stuffs for export; fourth, the hundreds upon hundreds of cars of remounts; fifth, the sudden task of focusing all this traffic in two Canadian ports, in such a way as to meet Admiralty requirements; and, sixth, the cessation of northbound traffic due to the reduction in munitions trade, and the flow of Canadian raw materials, some of them never before exported from Canada into the United States. Meantime, the passenger train service had been reduced to the extent of 10,000,000 passenger train miles a year, a yearly saving of some 500,000 tons of coal. The volume

of grain handled out of Western Canada in the autumn of 1917 was 12.1% higher than the volume for the same period in 1916. This was the record up to Oct., 1917, when this association was formed.

The chief reason for creating the association was the necessity for conserving fuel during the winter. The desirability of embodying in concrete form the co-operative spirit which up to this time had been casual and informal among the Canadian railways, was secondary. In both respects the association has made progress. First, as to fuel; the speed of all trains has been so regulated as to give the maximum of tractive effort from a given amount of coal. Passenger train service has been reduced still further, so as to effect a saving of another 2,000,000 passenger train miles a year, making the total Canadian economy in this respect such that the U. S. railways, to equal it, would have to cut off proportionately 110,000,000 passenger train miles, instead of the 20,000,000 which, at the time of writing, is their record in reductions. The Canadian reduction means a saving of approximately 100 pounds of coal per mile, or on 12,000,000 miles—600,000 tons per annum. Further reductions are under way.

Second: As to further co-ordination of railway service, the association took charge, in a supervising way, of all traffic difficulties and worked out the speediest relief of any congestion or shortage that threatened. Potato cars were loaned from one road to meet the shortage on another road in the Maritime Provinces. Calls for refrigerator cars, apple cars, locomotives, box cars—all kinds of equipment—were met through the association's direction. Weather conditions on the line leading from some of the Western coal fields caused temporary embarrassment which was energetically dealt with by the co-operation of all roads through the association. A special officer was sent to supervise coal handling at the Niagara frontier, with excellent results. Meantime, a campaign for economy in the ordering of cars and in using their space has been promoted. The surplus of Canadian freight cars in the U. S. is being steadily reduced through pressure applied.

Up to Jan. 15, the association has succeeded in having 5,300 empty and overdue Canadian box cars started back for Canada. Of these already 2,893 were received empty and 1,300 came in loaded with anthracite to relieve the coal shortage in this country. Others are being released by the U. S. and being received at frontier points every day. These numbers are in addition to the normal reciprocal exchange in Canadian and U. S. cars, which goes on very much as usual at the various points of interchange.

These are first things accomplished by the Canadian railways working through their association. Other matters, even more important, remain to be dealt with. The car shortage, which has been ameliorated, will it is hoped, be entirely relieved by persuading shippers to load cars to their maximum capacity instead of to less than half their capacity as has been the practice in the past. Steps will be taken also to impress upon shippers and consignees the seriousness of holding cars longer than necessary. In all these things, and in future work which cannot now be anticipated, the sympathetic co-operation of the Canadian people—shippers, consignees and the travelling public—is a prime necessity. The association

asks for public support for a work vital alike to the individual Canadian and the safety and triumph of nation and empire in the world war.

Although it is true that Canadian railways are organized as nation-wide enterprises, and so have escaped the difficulties experienced by the U. S. lines; that they are large and yet few in number and so are able to work together successfully under the association; that Canadian freight in Canada is moving constantly by the most direct routes; and that surpluses of equipment on any one road are being used to make up any shortage on other Canadian roads: nevertheless—congestion on lines outside of Canada, labor shortage and extreme weather conditions, coupled with abnormal traffic demands, make it necessary to remind Canadian shippers and consigners to load cars to full capacity; to load them promptly and quickly; and in the case of consignees, to release cars at the earliest possible moment.

## How Canadian Shippers are Helping Canada.

The following is the association's second bulletin:—If one steel rail in a transcontinental line could be allowed to move out of place just because its share of the responsibility seemed trivial in comparison with the whole line, then the Canadian shipper, using even so few as two freight cars or one freight car a year, might be justified in supposing that the way he handled his shipments could make no difference to the tremendous problem of car shortage in Canada. But that one rail would wreck a train: and that one shipper, failing to understand his share in smoothing out the traffic problems of Canada, reduces the efficiency of the entire transportation system of the Dominion.

The average freight car, carrying your goods, Mr. Canadian Shipper, goes only half-filled—this is a fact. Government statistics show that Canadian cars are loaded to an average capacity of only 46% of their weight-carrying capacity. You may perhaps be loading a little better than that average. You may think it is nobody's "funeral" but your own, since you pay the railways the legal rate and should be allowed to waste space if you like. But the fact is that all Canada is vitally concerned with your treatment of the freight car. The waste of car space is not your "funeral" but the country's "funeral." The point is: There are fewer freight cars in Canada than are needed every day. Munitions shipments, shipments of most essential materials such as food, coal, raw materials, are being held up for lack of cars. Yet if you would see to it that your shipping department filled its cars to full cubic or weight carrying capacity, you could release at least half the cars you now require. You would be helping to double the freight car equipment of Canada at a time when cars are almost priceless. Furthermore: with our Canadian winter comes the danger of snow blockades, reduced locomotive efficiency due to cold weather; congestion at frontier points owing to possible interchange difficulties with foreign lines, a shortage of labor for clearing the right-of-way or terminals. With your assistance these dangers are reduced to a minimum. Full filled cars mean shorter trains. Shorter trains mean faster handling. Faster handling means better business for all concerned. Please have a personal



interview with the men who handle your shipping. They will remind you, of course, of the convenience of loading one order to a car. They may say there is additional labor cost for packing a car beyond a certain point. They may indicate that your shipping methods would thus have to be altered, or that your customer's convenience would not be as suitably met. Possibly not. But since orders for freight cars cannot always be filled; since munitions of war are often held up for want of cars; and since your prosperity depends upon the prosperity of the whole country and our successful conduct of the war—you will surely see the importance of making your allotment do maximum service in minimum time.

By an appeal for heavier loading the Director of Overseas Transport has succeeded in making 1,000 cars do the work of 1,200 which had previously been considered full cars. One implement concern in Canada found that by a skilful packing of parts and the building of a rough deck in each car, it was able to save 12 cars on a shipment of 800 waggons; 32 cars on a shipment of 3,000 riding ploughs; 52 cars on a shipment of 1,200 binders! A flour shipper told us he could not afford to load cars to full capacity because of the high labor cost involved. On investigation it was found that he had been trying to load each row of bags to the top of the car while the loaders were still working from ordinary floor level. Naturally the lift was heavy and awkward. When his shippers were shown the simple little trick of laying the bags in steps, running down from the ends of the car to the door the difficulty was solved. Instead of completing the end rows first, these rows were piled only about half or two-thirds the height of the car. Then the men laid a few bags in the next row and by standing on these bags were easily able to place the top layers on the end row. They now built up the second row to half or two-thirds the full height, until, with a few bags started on the third row it was easy to finish the second. And so on.

Like a body, this country of ours has nerves and arteries. Unlike a body, it has not one brain, but many brain centres: not one heart, but many thousands of hearts. Your plant, Mr. Canadian shipper, is a "heart." The railways are the veins and arteries, leading to that heart and away from it. Through these channels comes the stream of traffic vital to you, just as you are vital to the railways. As the heart takes in one thing and pumps out another, so your plant takes in one material and ships out another. Day and night, night and day, the thousands of "hearts" in Canada, keep pumping the vital stream of traffic over the great steel arteries of trade. Now if your body—like your nation—were engaged in some tremendous feat of strength—if there was a maximum of strain on your powers, would not that be a poor time for your heart to slow up, or your arteries to develop disease? Of course! For you would want your heart to handle his load with quiet, steady efficiency: and your arteries to carry his pulses smoothly and with speed. Canada's "arteries" became congested last year, owing to the severity of the winter, the heavy snow-fall, the scarcity of labor to meet emergency loads, the blockade of the frontiers due to the foreign congestion. It hurt you. It hurt the railways. It hurt Canada! This winter we are determined to keep Canada's traffic rolling smoothly and with speed, even though last year's conditions repeat themselves—giving and taking the current of commercial life from the "hearts" of Canadian

business—feeding and being fed at the same time. But without you "hearts" our preparations are useless. You must help the "arteries" and yourselves and the body politic, in this time of great strain by beating quicker and steadier than ever. On your behalf Canada's Railway War Board is watching the car supply, speeding up repairs, conserving traction power, perfecting the road beds, co-ordinating staffs. On the country's behalf, as well as on your own, when a car—like a pulse in the nation's veins—arrives on your siding, unload it quickly: when an empty arrives to be packed—pack it promptly and pack it full. You have heard of men with leaky valves in their hearts? . . . Well, the leaky valve in a nation's "heart" is a half-filled freight car—a weak "pulse." Make it a big pulse, a strong pulse, a full freight car!

#### Indirect Routing on Canadian Railways.

Much is written in Canadian newspapers about the necessity of making all Canadian traffic move by the shortest possible routes. This obviously is a most important point in times such as the present. Nevertheless this observation by Canadian newspaper writers is not quite as pertinent to the Canadian railway situation as might at first appear. Indirect routing was an evil with which the U. S. and British Governments were compelled to deal vigorously. As a matter of fact it is practically non-existent in the Dominion. Anyone who will study the railway maps of Canada, the U. S. and Great Britain will be impressed at once with the fact that the great majority of Canadian towns and cities are linked together by lines running east and west. He will be sure to observe how few north and south connections there are. This, as any one knows, is due to the peculiar geography of our country. The British Isles and the U. S. are comparatively square countries. They have depth as well as breadth. Their cities are often linked together by railway companies whose lines form right-angles, or broken circles. Although Canada has a great many miles of railway in proportion to her population, they are widely spread. With one or two possible exceptions there are not, in Canada, those areas of closely-packed population and keenly-competitive railway organizations that exist in England and in the United States.

Canadian companies have not had to fight so bitterly, and to carry goods by roundabout lines merely in order to capture trade from rivals. As a matter of fact, the volume of trade offering to Canadian roads since the war began has been so great as to make each road content to carry the goods which it could naturally carry the best, without trying to take from its competitor traffic lying naturally in the sphere of that competitor. It may be of general interest to the Canadian public to know, however, some examples of the way in which their railways, through the association, are exchanging traffic in the interests of efficiency.

In one case the C.P.R. diverted by way of the "Soo" line 1,000 cars of freight so as to relieve the company's main line along the north shore of Lake Superior. These cars passed south from Winnipeg to Minneapolis and by way of Sault Ste. Marie into Ontario. They consisted chiefly of grain for domestic consumption in Canada. One hundred cars of freight a day are being diverted from the C.P.R. at Quebec and travelling by the National Transcontinental to Halifax. While there is no saving in mileage, this, in the interest of the country, relieves the C.P.R.

main line to St. John for classes of export freight more urgently required there. In Toronto an arrangement was successfully carried out whereby 120 cars of freight eastbound for Montreal were turned over from the C.P.R. to the C.N.R. every day. The Grand Trunk during the winter has been diverting 150 cars of coal a day to the C.P.R. and T.H. & B., in order to lessen the congestion on the G.T.R. from the Niagara frontier to Toronto and other points. The Grand Trunk has also diverted 50 a day to the C.N.R. at Toronto. In Western Canada the Canadian Northern has on several occasions transferred surplus traffic to the sister railways in the west. These are not examples in which indirect routing is involved. They are cited as illustrating the operation of the association and the spirit actuating the Canadian railways.

#### Surplus of Canadian Cars in the United States.

The association directed attention recently to the fact that on Jan. 1 there were 61,124 Canadian cars on U. S. railways, and 41,766 U. S. cars on Canadian railways, a balance due Canada of 19,358 cars. On Jan. 15 there were 63,083 Canadian cars on U. S. railways, and 42,424 U. S. cars on Canadian railways, a balance due Canada of 20,659 cars. The adverse balance against Canada increased in the two weeks by 1,301 cars. In view of this, the association issued the following notice to Canadian railways:—"The demand for cars for movement of foodstuffs and other war supplies to Canadian ports is increasing and will become greater during the remainder of the winter season. Continued decrease in the supply of Canadian owned cars would result in serious interference with the transportation of both war supplies and necessary domestic traffic. Therefore, it is imperative that Canadian owned box cars be retained exclusively in service between points on Canadian lines until such time as the return movement of cars from foreign lines increases. Please issue instructions to all concerned accordingly and make such arrangements as will ensure compliance therewith."

On Feb. 15 there were 61,083 Canadian cars in the U. S., and 44,879 U. S. in Canada, a balance of 16,204 cars due Canada.

#### Full Loading of Box Cars.

The following circular has been issued to all railways:—"The continued shortage of box cars and the growing demand for equipment for the movement of foodstuffs and other supplies for overseas make it more imperative than ever that waste of cars through light loading be avoided. It has been drawn to the association's attention that many box cars having a carrying capacity of 94,000 lb. are arriving at the seaboard with shipments of export flour weighing much less than the car is capable of carrying. It has been demonstrated at several flour shipping points that cars can easily be loaded to capacity with export flour, and some shippers are following that practice. In the circumstances, it is felt that all shippers of export flour should arrange for capacity loading of cars. We are advised that export flour is shipped principally in sacks of three sizes, namely, 220, 140 and 80 lb., and tests which have been made show that 40 ton cars can be loaded as follows:—

220 lb. sacks	400 sacks	88,000 lb.
140 lb. sacks	671 sacks	93,940 lb.
80 lb. sacks	1175 sacks	94,000 lb.

It is urged that railways serving shippers who are forwarding export flour call upon such shippers to load all 30 ton box



cars to full carrying capacity, namely, 66,000 lb., and 40 ton box cars in accordance with foregoing statement. The car situation is so acute that it may become necessary for the railways to place an embargo on the acceptance of cars of export flour except when they are loaded to full capacity as above.

#### The Location of Cars.

The association has issued the following circular, referring to supplement 1 to general order C.S. 1 of the Commission on Car Service of the American Railway Association, dated Nov. 28, 1917, reading as follows:—"Inasmuch as cars are now being successfully relocated in accordance with regulation 6, regulation 4 of general order C.S. 1, which reads: 'An empty car at junction point with the home road must be delivered to the home road at such point, either loaded or empty' is hereby cancelled. It must be understood that this in no way abrogates the requirements specified in emergency rule 1, or regulation 2 of general order C.S. 1."

As the box car pooling arrangements of the American Railway Association do not apply in Canada, and present traffic conditions in this country are such as to render the above regulation undesirable, members of the Canadian association are notified that the above quoted ruling is not effective on railways operating in Canada, and member lines are directed that until further notice an empty car at junction point with the home road must be delivered to the home road at such point, unless special arrangements made otherwise between duly authorized officers of the interested roads.

#### Shipments of Seeds, Fertilizers, Animals, Food, etc.

The association has issued the following circular:—"Prompt and current movement of all shipments of field and garden seeds, fertilizer, food for animals, including corn from U. S., agricultural implements, required for spring planting, and commodities used in the preparation of disinfectants for spraying trees or plants, is essential in order that the Dominion and provincial governments' campaign for increased food production during 1918 may be wholly effective. It is desirable, therefore, that any railway having in effect an embargo issued by it, curtailing the movement of the above mentioned commodities, immediately modify such embargo to permit of the free acceptance of such shipments originating at or destined to a point in Canada. Similar exceptions should be made to any further embargoes that may be issued by Canadian railways during the period of movement of the above mentioned commodities. All concerned should be notified of the importance of avoiding delay in transit to all such shipments."

#### Sailing Days for Shipments.

The association has issued the following circular:—"As an indication of the saving in number of cars used in the handling of less than carload freight, through the adoption of the 'sailing day' system of forwarding shipments, or similar methods, the following figures are taken from summary of reports furnished by member lines:—

	Number of cars l.c.l. freight loaded	Average load per car.
Nov., 1917 .....	45,829	11,442
Dec., 1917 .....	29,647	12,407
Number of cars that would have been required in December had average load per car been same as November, 3,214.		
Number cars saved through increased loading, 2,502.		

On U. S. railways during Oct., 1917, average load per car of l.c.l. freight was

14,821 lb., compared with 12,402 lb. during Oct., 1916. On one Canadian railway, the average load per car of l.c.l. freight during Dec., 1917, was 15,826 lb., compared with an average of 11,069 lb. during Nov., 1917, the increase of load per car thus obtained being generally attributable to the inauguration of the system of holding cars for second or third day forwardance. In view of the great opportunity for saving cars through revision of l.c.l. freight handling methods recommended by this association, and at the same time improving the handling of the freight, it is urged that all member lines continue to give the matter close attention.

#### Capacity Loading of Cars With Export Freight.

The association has issued the following circular:—"This will confirm telegram of Feb. 8, reading as follows:—"In view continued acute car shortage and urgent necessity saving coal in every way possible, Canadian railways are requested to notify all shippers of export freight routing via ports served by Canadian railways that, effective Feb. 12, export freight for overseas will not be accepted unless cars loaded to full weight carrying or cubical capacity."

Circular 46, concerning capacity loading of cars with export flour, specifies 671 140 lb. sacks for a 40-ton car. While it has been demonstrated that this number of sacks of the dimensions mentioned can be placed in the larger cars of 94,000 lb. weight carrying capacity, subsequent tests indicate that more economical practice calls for the loading of 650 140 lb. sacks in a car of 94,000 lb. capacity, and the latter, therefore, may be accepted as capacity carload.

#### Loading of Cars to Axle Carrying Capacity.

##### To Railways Operating in Canada:

In order to fully utilize freight car equipment, instructions limiting the loading of cars to 10% over marked capacity should be amended to permit of loading to axle carrying capacity all freight cars of forty tons stencilled capacity and over. A number of railways have already altered their loading instructions to conform to the foregoing, and in order that the full benefit may be derived from the arrangement, it is desirable that member lines which have not already done so amend their regulations to permit of the loading, and acceptance of cars loaded to axle carrying capacity in accordance with M.C.B. Association rules, when such cars have a marked capacity of 40 tons or over, and conditions other than the carrying capacity of the car will permit. Axle carrying capacity is arrived at from the following basis:—

Marked Capacity.	Size of axle.	Total weight car & loading.	Limit load.
80,600 lb.	5 x 9	132,000 lb.	132,000 lb. less light weight of car
100,000 lb.	5½ x 10	161,000 lb.	161,000 lb. less light weight of car
140,000 lb.	6 x 11	210,000 lb.	210,000 lb. less light weight of car

Cars of less than 40 tons capacity may be loaded to 10% in excess of their marked capacity. The Official Railway Equipment Register continues to bear notation. "limit of load allowed to pass over this system in excess of marked capacity, 10%, in the case of a number of the roads. This notation should be amended to conform to new regulations."

**Canadian Transfer Co.**—The following have been re-elected directors for this year:—C. Cassils, Hugh Paton, G. R. Starke, F. W. Molson and Sir H. Montagu Allan. F. M. McRobie was re-elected General Manager and Secretary.

#### Railway Finance, Meetings, Etc.

**Canadian Pacific Ry.**—Dividends have been declared payable Apr. 1 as follows: for the half year ended Dec. 31, 1917, on the preference stock 2%; and for the quarter ended Dec. 31, 1917, on the common stock 2½%, being at the rate of 7% per annum from revenue and 3% per annum from special income account.

**Guelph Junction Ry.**—The report for 1917, presented at the annual meeting of directors at Guelph, Ont., Feb. 6, shows that the earnings were \$45,544.40, an increase of \$2,583.20 over 1916. Payments were made to the city during the year, amounting to 25½% of the stock owned by the city, or \$43,380, in addition to \$904.25 for taxes, and \$250 as a subscription to the Patriotic Fund. A dividend of 7¼% was declared. The line is operated by the C.F.R. under lease.

**Salisbury & Albert Ry.**—At a public meeting in Hillsboro, N.B., Feb. 15, the member representing the district in the Dominion Parliament is reported to have said that the government had fixed the price to be paid for this railway, that the transfer would be arranged during the year, and that the line would be operated as an Intercolonial Ry. branch.

**Timiskaming & Northern Ontario Ry.** Passenger receipts for December, \$54,374.86; freight receipts, \$110,142.03; total receipts, \$164,516.89, against \$64,407.08 passenger receipts; \$111,494 freight receipts; \$175,901.08, for Dec., 1916.

**White Pass & Yukon Route.**—Gross earnings from Jan. 1 to Oct. 14, 1917, \$1,791,585, against \$1,779,406 for same period 1916.

**Change in British Railway Officials.**—W. F. Jackson, General Manager, North British Ry., has retired, and has been succeeded by Jas. Calder, heretofore Assistant General Manager. Jno. Walker, heretofore District Traffic Superintendent at Edinburgh, has been appointed Assistant General Manager. Wm. Andrew, Chief Goods Manager, has retired under the age limit and has been succeeded by Jno. Wilkinson, heretofore Assistant District Goods Manager. J. C. Christie, heretofore District Superintendent at Glasgow, has been appointed Assistant Chief Goods Manager, and M. S. Strang, heretofore Superintendent, Fife District, has been appointed District Superintendent at Glasgow.

**Grain Shipment via Vancouver.**—A Vancouver dispatch says that the first bulk shipment of grain from there has arrived safely at a British port. A steamship which was loaded at the Dominion Government elevator at Vancouver early in November with 100,000 bush. of wheat from the prairies, made the journey to Great Britain via the Panama Canal, and word is awaited anxiously as to the condition in which the grain in this test shipment reached its destination. The shipment was accompanied by A. W. Alcock, an official of the Board of Grain Commissioners at Winnipeg, to observe the condition of the grain at all stages of the voyage.

**Halifax Disaster Information.**—The very complete information published in Canadian Railway and Marine World, about damage done by the Halifax explosion, on Dec. 6, to the Canadian Government Railways and the Nova Scotia Tramways & Power Co.'s properties, has attracted considerable attention. The Director of the Halifax Disaster Records Office has written that the articles referred to have been of very great value to him.



## Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We would be glad to be favored in this respect.

### Canadian Railway Troops' Activities.

A recent report to the Militia Department at Ottawa says:—"Two companies of Canadian railway troops had a novel and exciting experience when the train on which they were returning to camp was cut off, in the vicinity of Gouzeaucourt, by advanced parties of the enemy, armed with machine guns. The locomotive man and fireman were killed, and as the track was broken by shell fire, the train had to be stopped and abandoned. Several of the men became casualties, through enemy machine gun fire. The battalion in question offered its services to the army commander for pioneer work and the offer was accepted. Eight platoons, under the commanding officer in person, actually served in the front line area for 36 hours."

The report states that during last December several units of Canadian railway troops were employed in the northern sector of the British front. A great deal of the work undertaken was in a country very badly broken up with shell holes, which were full of water. Units were also engaged on the light railway lines, which were built immediately subsequent to the Cambrai offensive. During these operations they were subjected to unusually heavy shelling and several encampments had to be abandoned. The work done on these railways elicited the warm approval of the army commander.

In the Ypres area two battalions were engaged in standard gauge work and a new trestle bridge was completed. Some standard gauge work was also done in the Cambrai region, and it was necessary during these operations to fill one shell crater 20 ft. deep by 50 ft. in diameter. Heavy shelling in the Ypres area made some of the railway work very difficult.

The Dominion Express Co.'s Good Cheer Club at Winnipeg, is continuing its task of sending a monthly parcel of good and useful things to each of the company's employees who are serving in France, and monthly cheques to those who may be in England. Before the employee leaves Canada, the club presents him with a silver wrist watch. The club's officers at present are: W. A. McDonald, President; H. C. Hooley, Vice-President; A. Henderson, Secretary; Miss S. F. Fraser, Treasurer; A. E. Marchant, Purchaser.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, up to Oct. 31, 1917, contributed \$16,754.10 to the Canadian Red Cross; \$20,257.13 to the Canadian Patriotic Fund, and \$13,765.16 direct to enlisted employees.

### PERSONAL NOTES.

H. P. Barker, formerly timekeeper, British Columbia Electric Ry., at New Westminster, B.C., is spending a furlough in Ireland, after being in the overseas forces for two years. He is reported to have been on board two vessels that were torpedoed, and to have had several close calls on land.

Temporary Lt.-Col. P. E. Bent, V.C., D.S.O., a recent addition to those granted the posthumous V.C., was a son of F. P. Bent, Superintendent Railway Mail Services, Halifax, N.S. The official record states, in regard to his action: "The coolness and magnificent example shown to all ranks by him, resulted in securing a portion of the line which was of essential importance for subsequent operations. This very gallant officer was killed whilst leading a charge, which he inspired with the call of 'Come on the Tigers.'"

Lieut. H. D. Brydone-Jack, who received the Military Cross recently, while attached to the headquarters staff, 31st Brigade, as reconnoitring officer, was formerly in the Surveying Department, C. P.R.

Major G. A. E. Bury, son of Sir George Bury, Vice President, C.P.R., who held a staff appointment in London, Eng., has returned to Canada owing to ill health. He had only returned recently to England to resume his work, after leave at home on the same ground.

Flight Lieut. J. F. Chisholm, R.N.A.S., son of G. C. Chisholm, General Solicitor, G.T.R., Montreal, has been awarded the Distinguished Service Cross.

Capt. W. M. Everall, A.M.Can.Soc.C.E., who has had two years' service in France, and was formerly Dominion Government Engineer, Port Arthur, Ont., is reported to have been appointed Assistant Engineer, British Columbia Public Works Department, Victoria.

Lieut. J. S. Galbraith, B.A.Sc., S.Can.Soc.C.E., of the Canadian Engineers, son of the late John Galbraith, formerly Dean of Applied Science Faculty, Toronto University, was given the Military Cross, by the King, at Buckingham Palace recently.

Ingolf Hanson, foreman steel car shops, Canadian Government Railways, Transcona, Man., has enlisted in the Railway Construction Corps, for service overseas.

Sir Arthur Harris, Director of Overseas Transport, Montreal, who was created a Knight Commander of the Order of the British Empire recently, for services in Canada in connection with ocean transport during the war, was presented to the King, Feb. 13.

Lt. Col. T. C. Irving, D.S.O., of Toronto, commanding 4th Canadian Divisional Engineers, who was killed in his dugout at the front by a shell on Oct. 29, 1917, left an estate of \$428, which goes to his wife.

Brig.-Gen. A. D. McRae, of Vancouver, of Davidson & McRae, formerly land commissioners, Canadian Northern Ry., who was, with the rank of colonel, in charge of transport and supplies for the Canadian overseas forces at London, General, is reported as having been given an appointment in the Imperial services.

E. Pope, Superintendent, Dominion Government Telegraphs, Quebec, Que., had three sons in the Canadian Expeditionary Force, all of whom were killed in action during 1917.

Capt. Maurice Pope, awarded the Military Cross recently for gallantly in action, was formerly in C.P.R. service at Montreal.

Col. G. S. Rennie, C.M.G., of the Canadian Army Medical Corps, formerly Chief Surgeon, Dominion Power & Transmission Co., and Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., and Lt.-Col. B.

R. Hepburn, formerly President Ontario & Quebec Navigation Co., have, according to a London cablegram of Feb. 13, been gazetted, or brought to the War Secretary's notice, for valuable services.

Lieut. Percy Roberts, Canadian Engineers, mentioned in dispatches recently by Field Marshall Sir Douglas Haig, was formerly on the Montreal Harbor Commissioners' staff.

Brigadier-General H. N. Ruttan, M.Can.Soc.C.E., formerly City Engineer, Winnipeg, has been retired from the command of Military District 10 there, owing to ill health.

Lt.-Col. Geo. A. Walker, R.E., formerly of Kingston, Ont., is reported to have been placed in charge of all British railway construction in Palestine. He is a graduate of McGill University, Montreal, and spent some years in civil engineering in British Columbia.

## Amendment of Rules for Inspection and Testing of Locomotive Boilers.

The Board of Railway Commissioners passed general order 218, Feb. 11, as follows:—Re general order No. 78, July 14, 1911, as amended by general order 106, June 27, 1913, and order 24803, Mar. 16, 1916, prescribing rules and instructions for inspection and testing of locomotive boilers and their appurtenances, to be adopted by railway companies. Upon the report and recommendation of the board's Technical Expert, concurred in by its Chief Operating Officer; and upon reading the submissions filed, it is ordered that general order No. 78 (order 14115), July 14, 1911, be modified as follows:—

Rule 5. Flues to be removed.—All flues of boilers in service, except as otherwise provided, shall be removed at least once in every four years, and a thorough examination shall be made of the entire interior of the boiler. After flues are taken out, the inside of the boiler must have the scale removed and be thoroughly cleaned.

Rule 11. Lagging to be removed.—The date for the removal of lagging for the purpose of inspecting the exterior of locomotive boilers, as provided by rule 11, except where indications of leaks exist, shall be advanced until Dec., 1918.

Rules 16 and 17.—Each time a hydrostatic test is applied, the hammer test required by rules 16 and 17 shall be made while the boiler is under hydrostatic pressure not less than the allowed working pressure, and proper notation of such test made on form 1.

Rule 18. Method of testing flexible staybolts with caps.—All flexible staybolts having caps over the outer ends shall have the caps removed at least once every two years, and also whenever the board's inspector or the railway company's inspector considers the removal desirable, in order thoroughly to inspect the staybolts. The fire box sheets should be examined carefully at least once a month, to detect any bulging or indications of broken staybolts.

The modifications herein provided for shall remain in effect until Dec., 1918.

The Canadian Society of Civil Engineers is applying to the Dominion Parliament for an act to amend its charter, by changing the name of the society to The Engineering Institute of Canada, and by replacing, wherever necessary, the word "society," in the charter, by the word "institute."



## Traffic Orders by Board of Railway Commissioners.

### Standard Passenger Tariffs Approved.

General order 214C. Reg. 25. Re application of the undermentioned railway companies for approval of their standard passenger tariffs of maximum mileage tolls. The said tariffs, issued to take effect Mar. 15, 1918, having been filed on the basis permitted by the board in general order 213, Dec. 26, 1917, it is ordered that, subject to the provisions of order in council P.C. 229, Jan. 30, 1918, and such other order in council as may be issued, the following standard tariffs of maximum mileage tolls for the carriage of passengers be approved; the said tariffs, together with a reference to this order, to be published in at least two consecutive weekly issues of the Canada Gazette: Elgin & Havelock Ry., C.R.C. 5; Northern Pacific Ry., C.R.C. 317.

### Standard Freight Tariffs Approved.

General order 215-B. Feb. 25. Re application of the undermentioned railway companies for approval of their standard freight tariffs of maximum mileage tolls. The said tariffs, issued to take effect Mar. 15, 1918, having been filed on the basis permitted by the board in general order 213, Dec. 26, 1917, it is ordered that, subject to the provisions of order in council P.C. 229, Jan. 30, 1918, and such other order in council as may be issued, the following standard freight tariffs of maximum mileage tolls be approved, together with a reference to this order, to be published in at least two consecutive weekly issues of the Canada Gazette: Elgin & Havelock Ry., C.R.C. 5; Essex Terminal Ry., C.R.C. 457; Northern Pacific Ry., C.R.C. 376.

### Minimum Weights On Peddler Car Traffic.

General order 217. Jan. 28. Re complaints of Canadian Manufacturers' Association and Toronto Board of Trade against proposal of railway companies, by schedules filed to become effective Oct. 15, 1917 (Michigan Central, Nov. 1, 1917), to increase aggregate minimum weight of less than carload shipments of fresh meat, dressed poultry, packing-house products, butter, and eggs, when loaded in refrigerator cars on private sidings in Eastern Canada, from 9,000 to 15,000 lb. a car, the said schedules having been suspended by the order 26634, Oct. 13, 1917, it is ordered that railway companies in Eastern Canada be granted leave to increase the aggregate minimum weight of less than carload shipments of fresh meat, dressed poultry, packing-house products, butter and eggs, when loaded in refrigerator cars on private sidings, from 9,000 to 12,000 lb. a car.

### Embargos Against Traffic.

General order 219. Feb. 9. Re general orders 95 and 160, dated respectively Nov. 2, 1912, and Feb. 24, 1916, requiring railway companies, whenever any such company issues an embargo against any traffic, to file with the board a copy of such embargo within 48 hours thereafter. Whereas the American Railway Association and the Canadian Railway Association for National Defence have adopted general regulations to expedite the transmission and handling of embargoes. Upon reading the said regulations; and upon the report and recommendation of the board's Chief Operating Officer, it is ordered that general orders 95 and 160 be amended to provide that during the existence of the Canadian Railway Association for National Defence and the continuance of the zone divisions under chairmen, as

provided by the said regulations, the zone chairmen shall file copies of all embargo notices to the board's secretary, within the time limited by the said general orders; and that the railway companies be relieved from filing such notices, as required by the said general orders. And it is further ordered that this order shall be and remain effective for the period the Canadian Railway Association for National Defence continues in existence and the regulations covered by the American Railway Association's general order, C.S. 17, and the circular of the Canadian Railway Association for National Defence, dated Jan. 20, 1918, are operative.

### Car Demurrage Code Rule.

General order 220. Feb. 11. Re applications of J. Coughlan & Sons, Vancouver, and the Canadian Retail Coal Association (Ontario), for a ruling in connection with rule 3, Car Demurrage Code. Upon the report and recommendation of the board's Chief Traffic Officer, and reading what is filed, it is ordered that the following clause be added to the said rule:—

"(d) Delays beyond free periods allowed for any two or more purposes under this rule shall be aggregated and charged for in accordance with rule 9; unless reconignment effects actual transfer of ownership of the goods, in which case the charge against the new consignee for delay beyond the free unloading period shall begin with the lowest toll."

### Time for Unloading Grain.

26907. Jan. 14. Re complaint of Montreal Board of Trade's Transportation Bureau, et al, against the proposed limitation by C.P.R. of free time allowed for unloading carloads of grain and grain products at St. John or West St. John, N.B., for delivery to the Seely Line, from 10 days, including Sundays and holidays, to five days, excluding Sundays and holidays. Upon hearing the complaint at Ottawa, Nov. 20, 1917, in the presence of representatives of complainant and the C.P.R., and upon the report of the board's Chief Traffic Officer, it is ordered that the complaint be dismissed.

### Release Re Travelling in Non-Passenger Cars.

26927. Jan. 23. Re applications of Canadian Pacific, Canadian Northern, Grand Trunk, and Grand Trunk Pacific Rys., under sec. 340 of the Railway Act, for approval of a standard form, being a release to be signed by persons who, for special reasons, desire to travel in cars which are not intended to carry passengers, it is ordered that the following form of release of liability in respect of travelling in non-passenger cars, for use by the said railways be approved, namely, as follows:—

"RAILWAY COMPANY.  
RELEASE OF LIABILITY IN RESPECT OF  
TRAVELLING IN NON-PASSENGER CARS.

In consideration of the ..... Railway Company permitting me, at my request, to travel between ..... and ..... or for part of this distance, in a car not intended to carry passengers, which I am not entitled by law to do, I do hereby release and discharge the said company of and from all claims and demands of whatsoever nature which I may now or at any time hereafter have or could maintain by reason or on account of any loss, damage, or injury, to person or property which I may sustain or suffer in getting to or from, on or off any such car, or while travelling in any such car, or in any manner in connection with or as a consequence of the journey so made, whether any such loss, damage or injury be caused by negligence or otherwise.

"Dated at ..... this ..... day of ..... A.D. 19....  
Witness: .....

And it is further ordered that orders 25025, 24789 and 24917, dated respectively May 31, 1916, March 6, 1916, and April 22,

1916, made herein, be rescinded.

Order 27028, Feb. 25, approved a precisely similar form for the Toronto, Hamilton & Buffalo Ry., and rescinded order 24887, April 11, 1916.

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
Dec.	3,273,200	3,207,900	65,300	758,500
	\$21,856,800	\$18,521,200	\$3,335,100	\$2,961,000
Incr	\$ 225,300	\$2,735,700		
Decr			\$2,961,000	

Approximate earnings for January, \$2,715,300, and for three weeks ended Feb. 21, \$1,975,400, against \$2,832,600 and \$1,694,300 for same periods 1917.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084,276.76	7,098,227.96	1,986,048.80	x308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,180,541.98	4,174,977.62	441,241.66
May.	14,355,149.63	9,803,426.84	4,551,719.79	179,436.88
June	13,556,979.69	9,641,073.49	3,915,906.20	226,278.09
July	13,377,850.55	9,617,853.33	3,760,007.22	x257,084.51
Aug.	12,414,537.25	8,596,998.76	3,817,538.49	x1,650,248.86
Sept.	12,244,341.69	8,497,190.83	3,747,150.86	x1,382,608.30
Oct.	14,733,774.02	9,679,072.25	5,054,601.77	x 620,037.60
Nov.	15,191,162.91	9,933,270.27	5,257,892.64	x 306,067.50
Dec.	13,070,882.01	9,159,603.27	3,911,278.74	x1,110,149.87
	\$152,389,334.95	\$105,843,316.50	\$46,546,018.45	x\$3,930,480.73
Incr.	\$12,659,647.69	\$16,500,128.42		
Decr.			\$ 3,930,480.73	

xDecrease.  
Approximate earnings for January, \$10,570,000, and for two weeks ended Feb. 14, \$4,402,000, against \$9,941,000 and \$4,070,000 for same periods 1917.

## Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan. 1 to Dec. 31:

	1917	1916	Increase
G.T.R. . . . .	\$52,205,158	\$47,826,799	\$4,378,359
G.T.W.R. . . . .	9,795,440	9,191,107	604,333
D.G.H. & M.R.	3,400,551	3,283,992	116,559

Totals . . . . \$65,401,149 \$60,301,898 \$5,099,251  
Approximate earnings for January, \$4,083,362, and for two weeks ended Feb. 14, \$1,427,976, against \$4,677,388 and \$1,754,133 for same periods 1917.

## Grand Trunk Pacific Ry. Earnings.

Approximate earnings of the Prairie Section, 916 miles, for January, \$440,209, against \$330,108 for Jan., 1917.

The claim of John Mackay, accountant, Toronto, against the City of Toronto, for \$42,000 in connection with a report on the Toronto Ry. and the Toronto Electric Light Co., when the question of acquiring the companies' properties, was to the fore about three years ago, has again been before the courts on claimant's appeal to set aside a verdict dismissing his claim. It had been previously decided that a good claim could not be made out against the city, as the work was not authorized by the city, and it was suggested as an alternative, that should the city accept a certain responsibility in the matter, \$7,500 would be a reasonable amount. Mr. Mackay's counsel stated that he was prepared to advise his client to accept an offer of \$7,500, leaving the question of liability to the court, but he did not consider that amount was a reasonable one.



# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—G. R. JOUGHINS, Superintendent of Rolling Stock, Moncton, N.B., has retired under the pension rules.

W. U. APPLETON, heretofore General Master Mechanic, has been appointed Superintendent of Motive Power. Office, Moncton, N.B.

G. E. SMART, heretofore Master Car Builder, has been appointed Superintendent of Car Department. Office, Moncton, N.B.

W. E. BARNES, heretofore Master Mechanic, Moncton, has been appointed General Master Mechanic, vice W. U. Appleton, promoted. Office, Moncton, N.B.

T. W. McBEATH, heretofore traveling fireman, Moncton, N.B., has been appointed Master Mechanic, District 3, Moncton, N.B.

C. D. BOVARD, heretofore acting Assistant Superintendent, District 2, Intercolonial Division, Campbellton, N.B., has been appointed acting Assistant Superintendent, District 5, Intercolonial Division. Office, Moncton, N.B.

J. H. WILSON has been appointed acting Assistant Superintendent, District 2, Intercolonial Division, vice C. D. Bovard, transferred. Office, Campbellton, N.B.

E. L. DESJARDINS, heretofore Assistant Superintendent, District 1, Levis, Que., has been appointed acting Superintendent, District 5, Eastern Lines, vice A. R. MacGowan, resigned to enter Delaware & Hudson Co.'s service. Office, Edmundston, N.B.

R. P. DOCKETT, heretofore blacksmith, has been appointed Foreman of Steel Car Shops, Transcona, Man., vice I. Hanson, enlisted for military service.

**Canadian Northern Ry.**—A. HECTOR has been appointed Travelling Freight and Passenger Agent, Halifax, N.S., vice A. T. Smith.

C. J. PIPER has been appointed Commercial Agent, Minneapolis, Minn., vice J. T. Whitlaw, resigned, as reported in our last issue.

**Canadian Pacific Ry.**—The following statement by the President has been given out:—"In order to relieve I. G. OGDEN, Vice President, from some of his onerous duties and to enable him to give his entire time to the company's financial department, JOHN LESLIE, Comptroller, has, by resolution of the directors, been placed in entire charge of the company's accounting department in all its branches, effective Mar. 1. Thereafter the officers of the department will report to him."

M. J. BUCKLEY, heretofore Locomotive Foreman, Glen Yard, Montreal, has been appointed Locomotive Foreman, Quebec, Que., vice J. Prendergast, transferred.

J. PRENDERGAST, heretofore Locomotive Foreman, Quebec, Que., has been appointed Locomotive Foreman, Hochelaga, Que., vice J. Miller, transferred.

J. MILLER, heretofore Locomotive Foreman, Hochelaga, Que., has been appointed Locomotive Foreman, Glen Yard, Montreal, vice M. J. Buckley, transferred.

R. C. CHAMBERS has been appointed electrician at Fort William, Ont., vice F. Totten, transferred.

E. L. LANDORPH, heretofore Engineer of Water Service, Winnipeg, has been ap-

pointed Resident Engineer, Kenora, Ont., vice H. H. Tripp, transferred.

T. LEES, heretofore Resident Engineer, Calgary, Alta., has been appointed Engineer of Water Service, Winnipeg, vice E. L. Landorph, transferred.

R. DAWSON, heretofore District Passenger Agent, Calgary, Alta., has been appointed District Passenger Agent, Brandon, Man., vice J. A. McDonald, transferred.

J. A. McDONALD, heretofore District Passenger Agent, Brandon, Man., has been appointed District Passenger Agent, Regina, Sask., vice J. E. Proctor, transferred.

S. T. LEWIS, heretofore transit man, Edmonton, Alta., has been appointed Resident Engineer, Medicine Hat, Alta., vice C. G. Washbon, resigned.

J. E. PROCTOR, heretofore District Passenger Agent, Regina, Sask., has been appointed District Passenger Agent, Calgary, Alta., vice R. Dawson, transferred.

W. H. HARRIS, heretofore Resident Engineer, Calgary, Alta., vice T. Lees, transferred.

F. TOTTEN, heretofore electrician, Fort William, Ont., has been appointed electrician at Calgary, Alta.

H. H. TRIPP, heretofore Resident Engineer, Kenora, Ont., has been appointed Resident Engineer, Edmonton, Alta., vice W. H. Harris, transferred.

**Canadian Pacific Ocean Services, Ltd.**—W. R. SERGENT, who has been associated with the Allan and C.P.R. steamship lines, and C.P.O.S., Ltd., for about 18 years, is reported to have retired from active duties of Chief Superintendent Engineer, but as continuing as an official in a consultative capacity.

KENNETH McKENZIE, Superintendent Engineer in England, is reported to have been appointed Chief Superintendent Engineer of all the company's fleets, vice W. R. Sergent, retired. Office, Liverpool, Eng.

**Delaware & Hudson Co.**—A. R. MacGOWAN, heretofore Superintendent, District 5, Eastern Lines, Canadian Government Railways, Edmundston, N.B., has been appointed Superintendent, Pennsylvania Division, D. & H. Co., vice C. A. Morgan. Office, Carbondale, Pa.

**Grand Trunk Ry.**—F. RUTHERFORD, heretofore Trainmaster, Battle Creek, Mich., is reported to have been appointed Superintendent of Transportation, Montreal.

A. M. ADAMS, heretofore agent, Hamilton, Ont., has been appointed Freight Agent, Toronto, vice John Gray, deceased.

T. J. WRENNICK, heretofore General Yardmaster, Hamilton, Ont., is reported to have been appointed Terminal Superintendent for the district covering the International bridge, Fort Erie and Bridgeburg yards, and also Black Rock, and River St. yard, Buffalo, N.Y., vice T. W. Saunders.

J. A. CLANCY has been appointed Trainmaster, Districts 27 and 28, Detroit Division, Western Lines, vice F. A. Rutherford, promoted. Office, Durand, Mich.

The following station agents have been appointed:—St. Jacobs, Ont., J. G. Buchanan; Shakespeare, Ont., R. Middleton; Thedford, Ont., W. A. McGregor; Owen Sound, Ont., G. S. Cline.

**Grand Trunk Pacific Ry.**—The following station agents have been appointed:—Venn, Sask., F. Hues; Lawson, Sask., H. Moe; Tofield, Alta., G. S. Gee; Smithers,

B.C., J. G. Stephens; Pacific, B.C., M. C. Newkirk.

**Grand Trunk Pacific Coast Steamship Co.**—R. BEAUMONT, heretofore Assistant to Manager, Vancouver, B.C., has been appointed Superintendent in charge of operation, and his former position has been abolished. Office, Prince Rupert, B. C.

**Great Northern Ry.**—W. P. KENNEY, heretofore Vice President in charge of Traffic, has been elected President, in place of L. W. HILL, who was also Chairman of the Board, and continues in that position. Offices, St. Paul, Minn.

R. BUDD, formerly Assistant to President, has been elected Executive Vice President. Office, St. Paul, Minn.

**Kettle Valley Ry.**—W. H. LITTLEJOHNS has been appointed Car Foreman, South Penticton, B.C., vice C. Mitchell, who has left the service.

**New York Central Rd.**—L. C. ANDERSON has been appointed Superintendent Passenger Transportation, lines west of Buffalo, N.Y., vice F. M. Smith, transferred. Office, Cleveland, Ohio.

**Railways Department.**—GORDON GRANT, M.Can.Soc.C.E., Chief Engineer, Quebec & Saguenay Ry., who was mentioned in Canadian Railway and Marine World for February, as having been appointed expert adviser to the Railways Department, has been given the title of Consulting Engineer to the Railways and Canals Department, with such duties as may be assigned to him by the Minister. He will continue to act as Chief Engineer. Q. & S.R., until it has been completed and handed over to the Canadian Government Railways operating department. Office, Ottawa.

**Reid Newfoundland Co.**—F. E. PITTMAN, heretofore Assistant Treasurer, has been appointed Passenger Agent, vice J. W. N. Johnstone, resigned. Office, St. John's, Nfld.

The American Railway Engineering Association's annual meetings will be held at Chicago, Ill., Mar. 19 to 21.

The Great Northern Ry., through J. J. Toomey, has foreclosed a mortgage of \$200,000 on the World building, Vancouver, B.C., under an order of a British Columbia court.

**Theft of Tickets.**—Alfred Housego, a C.P.R. employe at Moose Jaw, Sask., was convicted Feb. 3, of stealing two railway tickets from Moose Jaw to Vancouver, valued at \$78; and the two men who received the tickets were convicted of receiving stolen property.

**Canadian Northern Ry. Taxation in New Westminster.**—Up to the end of 1917, the C.N.P. Ry. owed New Westminster, B.C., \$124,000 odd for taxes, \$68,000 having been paid during the year on account. An agreement was reached for the payment of \$34,897 during Feb., 1918.

**Railway Lands Patented.**—Letters patent were issued during January, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acre.
Alberta & Great Waterways Ry. ....	47.47
Calgary & Edmonton Ry. ....	955.07
Canadian Northern Ry. ....	4,154.60
Edmonton, Dunvegan & British Columbia Ry. ....	129.69
Grand Trunk Pacific Ry. ....	1.50
Grand Trunk Pacific Branch Lines Co. ...	68.34
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. ....	2,789.00
<b>Total . . . . .</b>	<b>8,145.67</b>



# Canadian Railway AND Marine World

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NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.

ADVERTISING COPY must reach the publishers by  
the 10th of the month preceding the date of publication.

TORONTO, CANADA, MARCH, 1918.

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## The Dominion Government's General Railway Policy.

There is a great deal of speculation as to the policy which will be decided on by the Dominion Government in regard to the general railway situation, and a large amount of matter on the subject has been published in daily papers. The greater portion, if not all of it, has probably little, if any, foundation and is largely speculative. The Ottawa Evening Journal, which prior to the formation of the Union Government was the Conservative organ there, and the proprietor of which is closely in touch with Sir Robert Borden, had the following in its issue of Feb. 23, which may perhaps be more reliable than what has appeared in a number of papers:

"The sub-committee of the cabinet which for the past month has been studying the railway problem has completed its investigations and submitted its report to the Privy Council. It is now being considered by the cabinet as a whole. While nothing official has been given out, it is understood that in the main the recommendations are as follows:

"That the C.P.R. be not now nationalized, but retained as a privately owned and operated system.

"That the Grand Trunk Pacific and G. T.R. be nationalized.

"That negotiations be opened up with the G.T.R. stockholders in England in regard to terms for the disposal of their stock.

"That the G.T.R., Grand Trunk Pacific, Canadian Northern and Intercolonial be operated as one state-owned system.

"That the railway rates be increased as a war measure, with a provision for the taxation of abnormal profits in order to prevent undue earnings from the increase.

"The sub-committee considered from every possible standpoint the possibility of nationalization of all Canadian railways, including the C.P.R. The question of nationalizing the C.P.R. was rejected chiefly for two reasons, viz.: because of the financial burden it would entail at a time of financial stress, and because of a disposition not to hastily interfere with the gigantic and most efficient organization which the C.P.R. has built. Even the most ardent advocates of public ownership in Western Ontario and the prairie provinces hesitated at such an experiment in operation by the state.

"In regard to the G.T.R., it can be stated definitely that the government never had and has not now any intention of taking over the G.T. Pacific and leaving the G.T.R. They will deal with it as one enterprise. The taking over of the G.T.R., however, is a much more difficult proposition than most people appear to think. In the first place there is the difficulty involved in the fact that approximately 2,000 miles of this system are in the United States; and in the second place there is the still greater problem that over 100,000 of the stockholders live in England. It is very easy to talk, as the Hydro Electric Radial Ry. deputation from Ontario talked recently, of taking over this road, as if that could be done by the stroke of a pen, but the truth is that the government will reward handsomely any genius who is prepared to demonstrate to it how such a thing can be done other than by the process it proposes to follow: viz., negotiation and agreement. The truth is that the G.T.R. stock held in England cannot legally be expropriated, and, therefore, it must follow that any sensible or useful arrangement must be

based upon agreement between the stockholders and the government. Of course it is quite true that the government could go ahead and expropriate the physical assets of the system, but such a proceeding is not seriously proposed in any responsible quarter. On the contrary, the Prime Minister made it quite clear in the course of his remarks to the Hydro Electric Radial Ry. deputation that the government was disposed to give the English stockholders just consideration. In a word, the situation in regard to the G.T.R. can be summed up as follows: The sub-committee of the cabinet favors the taking over of the system; the Prime Minister and the cabinet are practically in accord with the proposal; but, owing to the fact that the majority of the stock is held in England, the matter cannot be dealt with hastily, but only after thorough consideration, negotiation and agreement.

"Freight and passenger rate increases are now practically certain to be allowed. The government is convinced that owing to advances in the cost of rolling stock and necessary improvement and maintenance, an increase in rates is absolutely necessary to maintain transportation efficiency. It is probable, however, that the increases will be temporary, granted purely as a war measure to meet extra normal conditions imposed by the war. The advances granted by the Board of Railway Commissioners were more of a permanent character. Taxation of war profits, as already stated, will be devised to look after the possibility of the increase in rates bringing extra normal profits to the C.P.R. It is probable that the Canadian Railway Association for National Defence will be retained in any event. It has achieved splendid results and would undoubtedly render good service under any new conditions that might arise."

## Objectionable Solicitation of Advertising.

The Associated Business Papers, of which Canadian Railway and Marine World is a member, unanimously adopted the following resolution recently.

"Whereas certain associations of business men permit the name and influence of their associations to be used in the solicitation of advertising for their association publications, in a manner that is frequently highly objectionable, it is resolved that the Associated Business Papers in convention assembled in Chicago, on Oct. 13, 1917, hereby condemn such solicitations as an undignified and improper perversion of association influence, far removed from the original purpose of any business organization and equally removed from the methods that should govern the sale of legitimate advertising."

Freight rates advanced.—In general order 215-A passed by the Board of Railway Commissioners Jan. 24, the Quebec Railway, Light & Power Co.'s standard freight tariff of maximum mileage tolls, C.R.C. 103, was approved. It is an advance of 15% on the previous tariff. The board did not approve the company's application for a similar advance in passenger rates.



# Electric Railway Department

## The Montreal Tramways Company's New Franchise.

The Quebec Legislature, early in 1917, appointed a commission to draw up a new franchise agreement between the City of Montreal and the Montreal Tramways Co., the Commissioners being Senator J. P. B. Casgrain, Montreal; Senator C. P. Beaubien, Outremont, and F. J. Cockburn, of the Bank of Montreal. Mr. Cockburn resigned, as his engagements did not permit him to act, and A. W. Stevenson, accountant, Montreal, was appointed in his place. After considerable investigation and negotiation an agreement for a new franchise was prepared and was executed on Jan. 28, 1918, being signed by the commissioners, by representatives of the city, and by E. A. Robert, President, and Patrick Dubee, Secretary, Montreal Tramways Co. It was also signed on behalf of the National Trust Co., Toronto, and the Harris Trust & Savings Co., of Chicago. The agreement has been ratified by the Quebec Legislature in one of the clauses of the act to amend the city's charter passed recently, and is appended to the act as a schedule. As many of the features are unique and a departure from the usual form of franchise, its provisions are given as fully as possible as follows.

The original bill before the house was in French, and the following translation was made hurriedly and is subject to revision:—

An administrative commission is created which shall be known as the Montreal Tramways Commission and shall exercise the powers and perform the duties assigned to it by the contract. The Commission shall consist of three members who shall be appointed by the Lieutenant-Governor in council immediately after the coming into force of the contract. The president and acting president of the commission shall be similarly appointed.

The members of the Commission shall reside in the territory under the control of the commission. Every member of the commission shall be appointed for 10 years and shall retain office during good behavior; but he may, at any time, be dismissed for cause by the Lieutenant-Governor in council. The city and the company shall have the right to apply, by writ of quo warranto, to the Superior Court for the dismissal of any member of the commission, for fraud, bribery, refusal or neglect to bona fide carry out the powers or perform the duties assigned to him by this contract, or if he becomes incapable. The members of the commission shall not form part of any body charged with the government or administration of the city's affairs or of any other municipal corporation interested, nor be in the employ in any capacity of any of the parties or other municipal corporation interested, nor be shareholders nor bondholders nor holders of the company's bonds or debentures, nor have, directly or indirectly any contract or interest in any contract, with one of the parties or with any other municipal corporation interested, nor in any inventions, apparatus, machinery, processes or patented articles employed or which may be employed by the company, nor be shareholders in any company having a contract or being interested in a contract with one of the parties or with any other municipal corporation interested, nor be members of the Legislative Assembly or Legislative Council of Quebec Province. The quorum for meetings of the commission shall be two and each member shall have but one vote. In the absence of the president, the acting president shall preside at the meeting. Every decision of the commission must be voted for by two members. The remuneration of the members of the commission shall be fixed by the Lieutenant-Governor in council and shall be payable monthly by the company. The commission shall draw up rules for its government and for the disposal of matters brought before it. Such rules shall be obligatory, when approved, after notice given to the city, to the other municipal corporations interested and the company by the Quebec Public Utilities Commission which is authorized to do so. Such rules may be amended from time to time, subject to such approval. Every decision susceptible of appeal, given by the commission shall be notified without delay upon the city, the company and any other party to the case. The commission shall not give any decision before having called upon all parties interested to be heard. The commission

shall hear and decide all complaints or applications made to it verbally or in writing, by any person whomsoever.

Any party to the case, the company, the city or any municipal corporation interested may appeal to the Quebec Public Utilities Commission from any decision of the commission on any question of law or competence relating to the contract, as well as from any decision given by the commission in the cases mentioned in certain articles of the contract which are enumerated. This appeal shall be final except as regards questions of law and shall on pain of nullity, be taken within 15 days from the service of a copy of the decision, by the commission upon the interested parties. Such appeal shall be taken by means of an inscription deposited in the Public Utilities Commission's office, and notice thereof shall be served upon the other parties to the case or upon their attorney. In deciding such appeal, the Quebec Utilities Commission may confirm, reverse or amend the decision of the commission and give such decision as should, in its opinion, be given by the commission. The Quebec Public Utilities Commission shall proceed on such appeal brought before it under this contract as if the case or matter had originated before it.

The commission shall have the right to engage a secretary and such employees as it may need, to fix their salaries, to obtain the advice of experts, and advocates and pay such experts and advocates, to provide itself with offices and whatever it may need to enable it to perform its duties. All necessary expenses incurred by the commission in and for the performance of its duties, including the remuneration of its members and the salaries of its employees, shall be paid by the company and form part of its working expenses. The company shall pay such expenses at the request of the commission. The company may, if necessary, by proceeding as in the case of an ordinary appeal, have these expenses revised by the Quebec Public Utilities Commission.

To enable it to exercise all its powers and perform all the duties assigned to it, the commission has the right, at any time to examine any of the company's files or other documents, and to inspect the company's property, but, for the purpose of auditing the company's accounts, the commission shall employ a chartered accountant, if it does not do so itself. The commission shall make a report to the city, every year, on the state of the company's capital account and other accounts in connection with maintenance and renewals, as well as the reserve accounts and those connected with the lowering of tariffs.

The powers conferred by the contract on the commission shall not have the effect of removing the company from the jurisdiction of the Quebec Public Utilities Commission, but, in order to avoid all conflict of jurisdiction, it is agreed that any demand or complaint regarding the commission's jurisdiction and which might be taken before the Quebec Public Utilities Commission against the company, shall be initiated before the commission. In the event of an appeal not being allowed under this contract or of an appeal not being lodged when allowed, if the company neglects or refuses to comply with the commission's decision, the latter must report to the Quebec Public Utilities Commission, which shall take such measure and give such order as it may deem necessary for carrying out the commission's decision in the same manner and with the same effect as if such decision had been given by it. When the Quebec Public Utilities Commission decides upon an appeal from a decision of the commission, its decision shall be carried out by it as if it had decided in the first instance.

**Franchise Rights.**—The object of the contracting parties is to assure to the population by the contract a rapid and efficacious system of transport and means of communication. In execution of the laws 1 George V, (2nd session), chap. 77, secs. 14 and 15, and 7 George V, chap. 60, sec. 28, the city grants to the company, on the conditions mentioned in the contract, the privilege of constructing, equipping, maintaining and operating, from the putting into force of the present contract until March 24, 1953, a system of surface cars in the city, such as now exists and such as will later be augmented, and the company obliges itself to construct, equip, maintain, keep up and operate at its costs, the said system of tramways, in accordance with the limitations and during the term of the present contract. Consequently, from the coming in force of the present contract, the privileges, rights and franchises which the company now possesses in the city for the above purposes, and which are the results of the law, of contracts, bylaws, resolutions or other acts, are annulled; and the privileges, rights and franchises which it possesses or will possess in other territories for the same purposes will be annulled by the act alone of the annexation of these territories to the city, which territories will then be subject to the present contract. The company shall not, directly or indirect-

ly, sell, cede, transport or lease, in whole or in part, its system of tramways situated in the city or outside of it, nor the rights conferred upon it by the present contract, nor the rights which it possesses or will possess in virtue of contracts, bylaws or resolutions agreed to or to be agreed to in its favor by the city or by other municipal corporations. The company may, however, enter into new trust deed conditions for the purpose of enabling it to renew or replace the hypothecary obligations created by the trust deed agreements in force on June 30, 1917, and the debentures for \$1,500,000 falling due in May, 1922. The company guarantees the city against all claims that may be made against it and to indemnify it against claims which may be pronounced against it in connection with the construction, existence, the upkeep, the repairs and operation of the system of tramways. The company shall not, either in the city or outside of it, undertake any industrial or commercial operation other than that which is the object of the present contract or which relates thereto. The company shall not circulate or allow the circulation upon its lines in the city or outside of it, of the cars of any other company, nor connect its lines with those of another company without the consent of the commission. This does not affect the arrangement entered into between the company and the Montreal & Southern Counties Ry., relative to that part of the company's road on McGill St. between Youville and Commune Sts. Subject to the provisions of another article, the company's cars in the city and outside of it shall be operated by electricity or by any other motive power other than steam, approved by the commission, and the company will continue, for the present, to use the system known as trolley system. The company's lines and all its accessories, the rolling stock and everything used in operating the said system, both in the city and outside of it, shall be of the best and most modern production, constructed of first class material and in accordance with the latest designs and improvements known to art. The company must always keep its system of tramways, including everything pertaining to it and to its operation, both in the city and outside of it, in a good condition of maintenance and repair, so as to give a rapid, sure and efficacious service in accordance with the intention of the present contract. The corporation must keep account in its operations, of all the ameliorations and improvements to any part whatever of its system, both in the city and outside of it, including the rolling stock, which proves of recognized advantage, and it must effect the same when so ordered by the commission and within the delay fixed by it.

**Extension of Lines.**—The company must construct and operate the following double tracks on or before Nov. 1, 1918:—

On St. Patrick St., from Church St. to Monk Boulevard, and on Monk Boulevard from St. Patrick St. to Allard St., these lines to be connected with those of Church St.

From Westmount Ave. on the company's property and on the Cote des Neiges Road to Queen Mary Road, with connections both east and west to the tracks already on this last mentioned road.

On Park Ave., from Atlantic Ave. to Beaumont St., on Beaumont St., from Park Ave. to Bickerdike St., and on Bickerdike St. to Ball St.

On Kelly St., in Bordeaux Ward, from the Ahuntsic railway station to Tolhurst St., on Tolhurst St. from Kelly St. to Daze St., on Daze St. from Tolhurst St. to Meilleur St., on Meilleur St. from Daze St. to McDuff St., on McDuff St. from Meilleur St. to Poincarre St., on Poincarre St. from McDuff St. to Boulevard Gouin, with the necessary connections to connect this line with that leading to the Bas du Sault. The commission may suspend the construction of this line until the city shall have acquired the necessary right of way. The commission may also change the course of this line if the company can acquire the right of way elsewhere at a lesser cost. Seeing that the municipal underground works have not yet been done under this proposed line, the commission may order the construction of a single line, but it must be replaced by a double one when the works in question have been completed.

On DeFleurimont St. from Christophe Colomb St. to Papineau St., with connections to the existing lines on DeFleurimont St. and with connections to the lines on Christophe Colomb St. and Papineau St. to the north; on Rosemont Boulevard from Papineau St. to Boulevard Pie IX, with connections to the lines on Papineau St. and on Boulevard Pie IX, to the south; on Boulevard Pie IX from Rosemont Boulevard to the present double track of Boulevard Pie IX; on Bellechasse St. from Henri Julien St. to St. Denis St., with connections to the lines on St. Denis St., in both north and south directions; the construction of these lines thus forming a continuous line from St. Lawrence St. to Pius IX Boulevard inclusively, by way of Bellechasse, St. Denis, DeFleurimont



and Papineau St. and Rosemont and Pius IX Boulevards.

On Iberville St. from Masson St. to Belanger St., with connections with the present lines on Iberville and Masson Sts., and with connections with the lines to be constructed on Rosemont Boulevard, both east and west.

In the cases mentioned, apart from the exceptions contained in it, work must be commenced on or before June 1, 1918, and diligently continued. The commission is, however, authorized to prolong the time for the execution of these works if the company establishes before it,—the city having been heard—that it is impossible to complete them within the given time.

The company must construct and operate, both in the city and outside of it, all other new lines asked by it or by the city, or by any other municipal corporation, if, in the opinion of the commission, they are justified by the needs of the population and of traffic and if general financial conditions permit. If in the opinion of the commission the needs of the population and of traffic justify it and the general financial conditions permit it, the company must construct and operate in the city or outside of it all new lines ordered by the commission, even if these lines are not asked by the city, by another municipal corporation or by the company. In each case the commission must fix the delay within which the work must be done or completed. Nothing herein contained will have for effect to deprive municipalities outside the city of the right to exact the routes and frequency of service to which they are entitled by their contracts with the company. No new line shall be constructed by the company within the city or outside of it without the previous authorization of the commission. Outside of the territory where the uniform tariff prevails, the cost of construction of any new line or of the prolongation of any existing line or of their operation, should not be a charge on the revenues of the company, so that the revenues of such new lines should be sufficient to avoid unjustly affecting the passenger and freight tariff on the other parts of the company's system.

No tramway lines shall be constructed in the public parks of the city except on Victoria and Viger Squares, and on these only when it will be absolutely necessary to do so to meet the pressing needs of traffic. The company, on the order and within the delay fixed by the commission, must make modifications, additions, reconstruction, alterations or necessary repairs to its lines, the pavings for which it is responsible, its rolling stock or to anything else pertaining to its system, either in the city or outside of it.

The company must, on the order of and within the delay fixed by the commission, remove at its own cost, all lines or parts of lines, whether situated in the city or outside of it, which the city may judge to have become useless, as well as the poles, wires or cables belonging to the same, and must also replace the paving whence such removals have been made to make it correspond with the rest of the street and of the sidewalks. If the company neglects to do this work within the given delay, the city or the municipal corporation interested, as the case may be, may do it at the cost of the company, with the consent of the commission.

The company, in constructing its lines must keep to the level of the different streets as furnished by the City Engineer, and must make no change in the same. In constructing or reconstructing its lines the company, after having made the excavations and fixed the rails and other apparatus, must remove the surplus earth and other materials taken from the excavations and must reconstruct at its own expense that part of the street excavated by it, so as to leave it in the same condition as it was before the excavation was made, and in so doing it must employ the material which the city may decide upon, provided that it is of the same quality as that employed on the street prior to the excavation having been made. But if the city takes advantage of the work of excavation to substitute another and more expensive paving than that hitherto employed on the said street, the company will then have the right to recover from the city the excess of the cost. The city may itself, however, construct a new pavement of another kind, but it can only charge the company the cost of the work which it could properly be required to do to place the street in the same position in which it found it.

If at any time a new level is established by the city in a street where the company's rails are placed, or if a new permanent pavement including one with an asphalted macadam base is ordered and laid by the city on the street, the company must, at its own cost, do the necessary work to remove its rails to the new level and to renew the paving between the rails and for 18 in. on each side of its track to correspond with the paving ordered by the city.

When the city make a new permanent pavement, including one with a base of asphalted macadam on any street where the company uses T rails, the latter must, within the delay fixed by the commission, and in a reasonable time, so as not to delay the city's works, replace at its own cost, these T rails by grooved rails or by any other model approved by the commission, and to do all the necessary work upon its tracks to make them correspond with the projected paving. This paving will be done by the city and at its cost.

If the city widens a street, the company, on the

commission's order, must remove its poles and its tracks, if there is space to do so, and replace them in the locality fixed by the commission, at the city's cost. When it becomes necessary to renew a wooden pole the company must substitute an iron one. In the construction of all new tracks the company must use in the city only iron poles.

The company must keep at its own cost in the city free and in a good state of repair the portions of the street and of the paving between the rails and 18 in. each side of them and also between the tracks in the streets where there are double tracks. In default of so doing, the city may do the work at the company's cost with the commission's consent.

When the company does work in the streets it must proceed diligently and without interruption, leaving free space for traffic and so arranging its materials as to interfere with it as little as possible. If in order to permit the city to do any work whatever, either itself or through any other person, upon any street whereon the company has tracks, it is necessary in the commission's opinion to remove and replace the tracks, this work, including the repaving between the tracks, between the rails and 18 in. on each side of the rails will be done by the city at its cost. If the city exacts it, the company must remake the part of the track removed at the city's cost, but the company cannot claim any damages from the city which may result from the interruption of its traffic or from any other cause.

Except in the cases above mentioned, and when it is otherwise provided in the contract, whenever the company makes trenches or openings in the paved streets or sidewalks, the city will remake itself the paving or the sidewalk at the company's cost, and in such case the company must abide by the municipal bylaws.

The company must provide for the drainage of its tracks according to the system approved by the Chief Engineer of the City and no connection with the city drains may be made by it without permit from the city.

Excepting in the case of minor repairs, the company, before doing any work in the streets or public places, whether in the way of constructing or repairing its tracks, poles, conduits, etc., which may affect in any manner the paving, sidewalks or other municipal works, must obtain a permit from the city.

The company cannot change, modify or displace any drain, water course or other subterranean construction belonging to the city, without the consent of the latter, and if such change, etc., is necessary it must be made by the city at the company's cost.

The company must, both in the city and outside of it, use grooved rails or such other model as may be approved by the commission, in permanently paved streets, including those with an asphalted macadam base, but it may use T rails on other streets.

In the city or outside of it, the width of the space between the tracks, the width of the tracks, the radius of the curves at the street curves, the projection of the sleepers outside the rails, the width of the rolling stock, the model of the cars and of their accessories, the type and the placing of the poles, the locating of the tracks on the streets, the weight and type of rails, the indicators signalling the regular stopping places of the cars, the lighting and heating of the passenger cars, the weight of the passenger cars as well as the freight cars and their maximum loads, the numbering of the cars, the maximum number of cars of which train shall be composed will be subject to the commission's approval.

Service.—The commission must determine, both in and out of the city, the speed of the cars, the stopping and transfer points, and the service and frequency thereof on each route or circuit by day as well as by night. It is within the commission's power to permit a greater speed than that allowed by law.

The company, both within and without the city must maintain its tramway service on the lines or circuits mentioned in schedule B to the contract, and must regularly maintain on each line or circuit the actual frequency of service indicated in the schedule until it may be otherwise ordered by the commission. The routes or circuits established by this schedule may be modified or changed from time to time by the commission, but no change can be made by the company without the commission's consent.

The company must station an agent at every transfer point that the commission may indicate, whether within or without the city. This agent must perform all the duties that he commission may determine.

The company must not use either within or without the city combination freight and passenger cars without the commission's consent.

It is forbidden both within and without the city to enter or to leave any car unless it has come to a complete stop.

Both within and without the city the conductors and the transfer point officials must speak both languages and announce equally in both languages the names on the routes of the cars.

Both within and without the city each car must be furnished with a gong which will be sounded before the car approaches within 40 ft. of each crossing. Every passenger car must carry in front and on each side a sign approved by the commission, indicating its route and destination in a man-

ner easily read. After sunset these signs will be illuminated. Every passenger car shall be well ventilated and kept always clean.

Both within and without the city the commission will determine the number of passengers that each car may carry. The company must inscribe this number in figures at least 4 in. high on the outside of the car.

Both within and without the city, the company will have the right to run its cars on the rails in preference to all other vehicles, which must leave the road free to them whenever they meet them or when they approach in the same direction, and which must not for any reason obstruct or inconvenience them.

The city will have the right, without any indemnity to the company, to make use of its poles for placing its fire alarm telegraph, patrol or electric lights wires thereon, or for affixing thereto placards conveying information of public interest, in the manner fixed by the commission, provided that no expense is thereby caused to the company and that the city will be responsible for all damages caused to anybody by the use made by it of the said poles.

**Snow Removal.**—The company, in accordance with the city's instructions, must keep its tracks clear of snow and ice, and the city may, if it so desire, remove, as it may decide, from one sidewalk to the other, the whole or a part of the snow or of the ice in any street or part of a street where the cars will be in operation, including the snow falling from the roofs of buildings, thrown or falling in the street, and that removed from the sidewalks and thrown into the streets with the city's consent, and the company will be required to pay half the cost of this work.

The city may open streets in such localities as it may deem proper, and for this purpose may cross the company's lands used as right of way without paying any indemnity to the company for the possession and use of the lands. The cost of the works executed on the part of the streets situated on the company's land and their maintenance will be at the city's cost.

If the city exacts it, the company must wash, water and sweep the streets or parts of the streets upon which it has tracks, and also transport all garbage, rubbish and other waste matter or snow, at a price which must not exceed the cost of the same to the company, plus 10% of profit, provided that in the commission's opinion this work does not impede traffic.

The company must make connections between its main line and all sidings which the city may require for communicating with its yards or other municipal establishments, and must perform all other work in connection with these sidings, which the city may not judge proper to do itself. These works will be done at the city's cost but at cost price.

All the work provided for by this contract and imposed upon the company will be executed under the commissions surveillance.

**Approval of Contracts.**—All contracts involving an expenditure exceeding \$50,000 either for work or for the furnishing of electricity, the purchase of material, the purchase or sale of immovables, made by the company must be submitted to the commission either before being signed or within days of the same. The commission must approve or disapprove of it within the eight following days. There will be an appeal by the company to the Quebec Public Utilities Commission from the commissions decision. If the commission disapproves the contract and no appeal is made, or if there is an appeal and the decision of the Quebec Public Utilities Commission disapproves the contract, then in either case the contract will be null and of no effect. This article will not apply to contracts involving the expenditure of any sum which the company may distribute to its shareholders, or might distribute to them without the restriction hereinafter imposed, concerning the maximum dividend. This article is not to be interpreted as taking from the commission the right of surveillance and of control which it has in virtue of the other articles of this contract.

**Electrolysis.**—The company must employ the necessary means and apparatus to prevent damages being caused by the leakage or discharge of electricity into the soil, to the underground water pipes, conduits, drains or other municipal works. The company will be responsible to the city and to any other interested municipal corporation for all damages which may be caused by the leakage or discharge of electricity into the soil, and the company must guarantee them against it and indemnify them for any condemnation which may be pronounced against them in this connection.

The company's wires may be cut on the order of the Chief of the Fire Department if he believes it to be necessary to permit him to extinguish a fire, and in this case the company will have no right to any claim or indemnity either for damages caused to the wires or for any other cause.

Excepting when otherwise provided by this contract, whenever the city executes works of which the cost is repayable by the company, or whenever the company executes works of which the cost is repayable by the city, these costs will include only the actual expenditure without profit.

**Rates of Fare.**—The tariffs in force at the date of this contract, both within and without the city, which the company is authorized to collect in virtue of the law or of all contracts, bylaws or resolutions will continue in force until they have been modified by the commission. Within 60 days



following the nomination of its members, the commission must, if it is necessary, modify these tariffs so as to give full effect to the present contract, taking into consideration the expenditure upon work done by the company since the coming into force of this contract. The commission must, within the same delay render these tariffs uniform for the territory comprising the city such as it exists at the date of this contract, as well as the towns of Maisonneuve, Westmount, Outremont, Verdun, St. Laurent, Mount Royal, the territory of that part of St. Laurent parish and the territory of that part of the municipality of Cote Saint Luc to the east of the company's track which extends from Snowdon station to Cartierville, including the land occupied by this track. This territory will be known as the uniform tariff territory.

Outside of the uniform tariff territory, the commission may fix different tariffs for the different municipalities, as well for local traffic as for that from one municipality to another, or from a municipality to the uniform tariff territory and vice versa, provided that these tariffs, or any of them do not unjustly weigh upon the rest of the system, and provided further that these different municipalities may, with the commissions consent, agree to pay to the company a part of the cost of their respective services for the purpose of obtaining lower rates.

In the uniform tariff territory, as well as in the other municipalities, the commission may fix different tariffs for all passengers at certain hours of morning or evening, or at certain hours of both morning and evening. It may also fix higher tariffs for night hours from midnight till 5 a.m.

The commission may establish lower tariffs for school children and for apprentices which will only apply to week days. For school children these tariffs will apply only from 8 a.m. to 6 p.m., and for apprentices from 6 a.m. to 7 p.m. Children under five years of age will be carried free. The company must sell passenger tickets of the denomination which will be fixed by the commission, in all its offices and on board its cars.

The commission may, from time to time, as required, modify the tariff which will have been established in virtue of the present article, but in accordance with the provisions of this contract.

No change in the tariffs will come into effect until eight days after a notice published by the commission during two consecutive days, in an English and in a French newspaper published in the city. After the putting in force of a new tariff, passengers will not be able to use tickets previously purchased and which are not in accordance with such new tariff, but the company must redeem these tickets at the price at which they were sold.

**Transfers.**—The rates of passage established by the commission must provide for the issue of transfers, and the following bylaws must be observed: Every passenger in paying the price of his passage will be entitled to a transfer either gratuitously or at the rate fixed by the commission, as the case may be, from one car to another, at the localities where the routes or circuits meet or cross, or at other localities fixed by the commission, in order to enable the passenger to go without interruption from one point to another in the territory covered by the price of passage paid by him.

The payment of the price of passage cannot in any case permit a passenger to return to his starting point. The intention is that the company transport a passenger for a continuous journey over its lines within the limits covered by the price of passage paid, so long as this journey is continued in the same direction. For example, a transfer issued at the west permits a continued journey towards the east, the north or the south. The transfers issued to passengers, indicates the point or the locality of transfer and no transfer is to be utilized except at the locality and within the limit of time indicated by a perforation of the transfer.

It is forbidden to everybody to sell, change or give any transfer; to receive, to offer or to use for a passage on any car a transfer which has not been regularly issued for it; to throw away any transfer without having first destroyed it.

**Free Transportation.**—Save the exceptions provided for in the contract, no person will be transported gratuitously on the company's cars.

The policemen and firemen of the city, or of all other interested municipal corporations, the company's officers and employees, the members and employees of the commission, when they travel in the performance of their functions will be carried gratuitously, provided that they conform to the rules which will be established by the commission.

The company must at the city's demand have special tickets printed, which will only be sold to the city for the use of its employees. These tickets will be sold to the city at the ordinary price. These tickets must be in accordance with a pattern to be furnished by the city.

The company may make any arrangement which the commission believes just, with the Dominion Government for the transfer of letter carriers and mails, and with the Quebec Government for the passage of its officers and for the service of the Bordeaux prison.

**Freight Transportation.** The commission may permit the company to transfer freight in part or in the whole of the city, as it now exists, and as it may be hereafter enlarged, also in a part or in the whole of all territory outside of the city, provided that this transport does not delay or hinder in any manner the transport of passengers nor

the execution of the works nor the transport of garbage, rubbish and other waste matter or snow which the company may be called to do for the city in virtue of the present contract. It will be for the commission to determine, in case it permits the transport of freight, what routes the freight cars will follow and during what hours of the day or the night these freight cars may circulate on the company's lines. The tariff shall be fixed by the commission. The freight tariff must be fair and reasonable and as uniform as possible, so that no person or company shall be favored to the detriment of another, but such tariff must be so fixed as to produce sufficient revenue for the passenger tariff not being affected. The commission may, from time to time, make rules for the transportation of freight, which, when approved by Quebec Public Utilities Commission, shall be binding on the interested parties. The commission shall determine what merchandise or other articles may be transported by the company. The transporting of live animals, carrion, dung or other substance of a nature to diffuse smells or cause nuisances, shall be done only in cars approved by the Superior Board of Health of the province. The company shall have the privilege of transporting as freight all building materials it may use for constructing or repairing its tracks, and also all building materials needed for municipal works by the city or any other municipal corporation where the company has tracks, and any excess quantity taken from excavations made in doing their works. The commission shall not have the right to authorize the company to leave its freight cars standing on the streets for loading or unloading the cars except in the case of work done by the company or by the city or by the said municipal corporations. If the transport of freight is allowed, the commission may order the company to establish loading and unloading stations at various places. This article is subject to the authority of the Board of Railway Commissioners of Canada in cases where such authority may be exercised.

**Workshops.**—The company shall establish and maintain its factories, workshops and principal offices within the city limits. The company shall also build and manufacture within the city limits all parts of its plant which can be manufactured there as advantageously as elsewhere.

**Labor Unions.**—The company shall, neither itself nor through any other persons, prevent its employees from organizing themselves into labor unions authorized by law. Each class or category of employees may form a separate union.

The company's employees shall have the right to one day of rest per week, the same to be fixed by the company's rules.

**Autobus System.**—If, in the commission's opinion, the needs of the population and of traffic justify and financial conditions permit, the company shall establish and put in operation in or outside the city an autobus system on such streets as the commission may designate and on such conditions as it may determine; provided the establishment and operation of such system shall not be a charge upon the company's revenues in the sense that the revenues from such system must be sufficient so as not to injuriously affect the passenger and freight tariffs on the tramways system.

**Guarantee Fund.**—The company, by yearly instalments of not less than \$100,000, and in any case within five years from the coming into force of this contract shall provide out of its own resources, to wit, those beyond the commission's control, a special fund of \$500,000, which shall be used to meet all liabilities and all other debts (except mortgage debts) incurred by the company prior to the coming into force of this contract through the operation of its system, and to provide for the payment in each year of any portion of excess expenditure as hereinafter defined, which shall be found by the commission to have been unnecessary for the payment of penalties imposed on the company and also to guarantee the fulfilment by the company of all obligations assumed by it under this contract. Said fund, when created, shall be maintained by the company at all times at the sum of \$500,000. If shall be deposited by the company in some chartered bank or trust company in such a manner as to remain available at all times. The interest thereon or income therefrom shall be company's property. Upon the termination of this contract the fund shall be the company's property.

**Disposition of Gross Revenues.**—All revenues derived by the company from the operation of its entire system of tramways, as well as from all other sources whatsoever, whether within or without the city's corporate limits, shall, except as herein otherwise provided, constitute the gross revenues, and shall be disposed of for the following purposes and in the following order:

Within 60 days after the coming into force of this contract, the commission shall, for the first year of operation hereunder, allow the company, out of the gross revenues, a sum for each revenue car mile, exclusive of car house and car yard miles, made by cars equipped with motors, except cars operated to carry materials used in the company's construction and repair work, and other sums for each revenue car mile, for trailers, and for freight cars, always exclusive of car house and car yard miles. Such sums shall be known as the operating allowance, and shall be used for the payment of all operating expenses (exclusive of maintenance, renewals and depreciation), and all taxes levied against the company or its property. Such operating expenses shall include among other things, the commission's expenses, and the actual and

necessary expenses incurred by the company during the year for insurance and for the defence and settlement of claims and suits for damages made during the year, and an amount to be held in reserve estimated by the commission to be sufficient to pay all such claims and suits that have not been settled during the year. The company shall so increase the transportation services, under the commission's direction, that the permissible average car mile density, and in so doing, it shall year of operation under this contract shall not be excessive. Within 60 days after the close of the first year of operation under this contract, and annually thereafter, the commission shall redetermine and fix for the ensuing year the amount of the operating allowance and the permissible average car mile density, and in so doing, it shall base its action upon the actual and necessary expenses for operation incurred during the preceding year, with such adjustments as may be foreseen to be necessary on account of modifications of service, changing costs, or any circumstances tending either to increase or to diminish the necessary expenses of operation. If at the end of any year the commission shall find that the company has kept within the operating allowance or shall not have exceeded the same by more than 2½% of its amount, subject to the conditions imposed as to density of traffic being in the judgment of the commission reasonably observed, then the commission shall permit the company to take out of gross revenues, as a charge prior to all other charges, except operating expenses and taxes, as hereinabove defined, a sum to be known as the operating profit, which shall be equivalent to ¼ of 1% on the total average capital value for that year; and such operating profit shall belong to the company. In case the company shall have spent more than the operating allowance, plus the above percentage of 2½% during any year, then the excess over such allowance and percentage shall be known as the excess expenditure, and shall be taken from gross revenues up to an amount not exceeding ¼ of 1% on the average capital value for such year, and the operating profit shall be reduced accordingly; and if the excess expenditure shall exceed ¼ of 1% on average capital value, then the company shall receive no operating profit, but contrary, shall pay out of the guarantee fund, the amount by which such excess expenditure exceeds said ¼ of 1%; provided, that if the company shall during such year, in anticipation of such excess expenditure, or immediately upon the close of such year, submit to the commission a detailed statement and explanation thereof, and if the commission shall find not later than 60 days after the close of such year that the excess expenditure, or any part thereof, was necessary and unavoidable in the rendition of service as required by the commission, then the commission shall permit the company to take out of gross revenues the additional sum required to cover said excess expenditure or such part thereof and shall also award the company the full amount of the operating profit, less any part of such excess expenditure which may be found to have been unnecessary, but if such unnecessary part shall exceed the amount of said profit, the balance shall be paid by the company out of the guarantee fund. The commission in determining the operating allowance for the ensuing year, shall take into consideration the excess expenditure incurred during the preceding year and found to be necessary as above provided. Any portion of the operating allowance which shall not be expended or needed for the expenses of the year, shall at the close of the year, with the approval of the commission, be returned to gross revenues to be disposed of as hereinafter provided.

**Maintenance and Renewals Fund.**—The entire plant and property used and necessary to provide the public transportation service shall at all times be maintained at the highest practicable standard of operating efficiency. For the purpose of maintenance, renewals, replacements and substitution made necessary by wear and tear, age, obsolescence, inadequacy, accidents or other cause, a sum shall be set aside for each revenue car mile, exclusive of car house and car yard miles, made by cars equipped with motors and other sums for each revenue car mile made by trailers and by freight cars, always exclusive of car house and car yard miles. Such sums shall be known as the maintenance allowance and shall be placed in the maintenance and renewals fund. Any items of property contained in the appraisal schedule, or thereafter added to the tramways system, which shall become worn out or which for any other reason shall at any time be deemed no longer useful as a part of such system, shall be disposed of under the commission's direction, subject to the provision of any deed of trust, upon the most advantageous terms obtainable, and the proceeds thereof, with, when required, the consent of any trustee for the company's bondholders, shall be paid into maintenance and renewals fund, or if such consent be not forthwith obtained, then proceeds shall be deducted from capital value. The proceeds from the sale of land and buildings shall not form part of said fund, but shall however be deducted from capital value. Out of said maintenance and renewals fund shall be paid from time to time the actual and necessary expenses of maintenance and renewals, and of replacements and substitutions as hereinafter provided, and any moneys not needed for such purposes during any year shall remain in said fund and be held in reserve until



required for such purposes, or for investment in betterments, additions and extensions as herein-after provided. Whenever any portion of the plant is replaced or other property substituted therefor, the cost of such replacement or substitution up to the full reproduction cost of the unit or article so replaced or substituted for as fixed by the said appraisal, shall be paid out of the maintenance and renewals fund and any cost in excess of said reproduction cost shall be paid out of moneys supplied by the company as hereinafter provided and the amount thereof shall be added to capital value.

(To be concluded in next issue).

### Application for Increased Fares in London.

The London St. Ry. has sent the following letter to the chairman of the city council's No. 1 committee:—"Owing to the enormous increase in the cost of everything entering into the construction and operation of a street railway, the operating and maintenance charges of the London St. Ry. Co. have increased out of all proportion to the gross earnings. This has been due to the abnormal state of affairs throughout the world, which was entirely unforeseeable when the present arrangement between the city and the company was made. Understanding that your committee has charge of street railway bylaw matters, we beg thus formally to bring before you the fact that the company is forced to request, not only in its own interest, but in the interest of the city also, a modification of the present agreement, either by way of increased fares or otherwise. With the best interest of all concerned in view, the company would respectfully request the council to consider the matter, and confer with the company, and, if thought advisable, obtain information and data for the purpose of enabling the matter to be discussed intelligently from its various standpoints by both the city and the company.

"Our records show that the cost of labor has doubled since the date of the present arrangement, and is still advancing, and that the cost of all the materials used in the construction and operation of the road have increased in price from 100% to 300%, while during the entire period the fare per passenger has remained unchanged. In view of the above state of affairs, we feel some modification should be granted, and particularly so as the rate of fare in London is, we believe, lower than in any other place on the American continent. We would respectfully request prompt consideration, and at the same time may state that it is our intention in the meantime, for the purpose of ascertaining the views of the citizens, to point out, through the public press and otherwise, the conditions which make modification of the arrangement necessary at this time."

The company has contracted for advertising space in the local papers to acquaint the public with the facts.

**Toronto Civic Ry.**—At a meeting of the Toronto Board of Control, Feb. 20, the Works Commissioner estimated \$326,124 for maintenance and operation of the civic railway, an increase of \$68,805 over the previous year. He reported that two of the 13 cars on order had been received, and the estimate was for an increased and better service. Since this report another three cars have been received. The mayor stated that maintenance was costing too much, and that the type of cars used was not modern, and suggested that \$8,000 be provided for an experiment with one-man cars, and that a report be made on a new type of car. The operating expense per car mile was given as 18.37c.

## Toronto Railway Co's Annual Report and Meeting.

Following are extracts from the report for the calendar year 1917:—While the gross income has shown an increase, the net income has been adversely affected, owing to increase in wages and to the abnormal war conditions causing the price of all classes of supplies to advance very materially.

Gross earnings .....	\$6,291,759.06
Charges for operating, maintenance, etc. ....	3,815,277.82
Net earnings .....	\$2,476,481.24
Dividends .....	\$960,000.00
Bond interest, etc. ....	146,887.66
	\$1,106,887.66
Payments to city:	
Percentage on earnings ..	\$970,512.41
Pavement charges .....	98,840.80
General taxes .....	117,678.11
	\$1,187,031.32
	\$2,293,918.98

The gross passenger earnings were \$6,202,562.67, an increase of \$321,057.39, over 1916. When one has in mind the large number of citizens who are still engaged in the war overseas, the income from the operation of the system must be recognized as satisfactory.

The operating charges have increased, through the large increase in the wages of conductors, motormen and shop hands; and owing to the fact that in nearly every line of material used in the upkeep of the plant, the price has advanced greatly; in some cases the material used has increased over 200%. The operating and maintenance cost for the year was \$3,815,277.82, an increase of 4.5% over 1916. The payments made to the city were \$1,187,031.32, an increase of \$74,021.57 over 1916.

The company's agreement with its employees, under which they were receiving 27½c. an hour, expired in June, 1917. They demanded a new agreement with a maximum of 40c. an hour, and other onerous conditions. After negotiations, and notwithstanding the company's offer to arbitrate, the men went on strike, which lasted for 2½ days. Upon their return to work an arbitration was held under the Lemieux Act, which resulted in a majority award of 37c. an hour maximum rate. In other respects the previous agreement was substantially confirmed. Owing to the scarcity of labor and war conditions, your directors reluctantly decided that they had no other course than to accept the award, although it meant an increase in operating expenses of about \$600,000 a year. The directors feel that this award was not warranted by the weight of evidence submitted to the board of arbitration; that it was not justified by any comparison with the rates of wages paid for similar work in Canadian or U. S. cities, and was not warranted by the company's earnings; that in fact the award was essentially unjust to the shareholders.

The seventh drawing of the company's currency and sterling bonds, under the terms of the mortgage deed dated Sept. 1, 1892, took place on June 21. Under the terms the company draws annually a certain number of bonds issued, thus reducing, during the 10 years mentioned, the outstanding bonds to 50% of the original issue, and all bonds so drawn are to be redeemed on or after Aug. 31 following the date of drawing, from which date no interest is payable on bonds so drawn. There has been drawn to date a total of \$1,592,519.98. Careful attention has been paid to the maintenance of the plant, rolling stock equipment and other properties. The directors declared, and paid out of the accumulated surplus earnings, four quarterly dividends of 2%.

### INCOME ACCOUNT.

Gross earnings .....	\$6,291,759.06
Operating, maintenance, etc. ....	\$3,815,277.82
Interest on bonds, etc. ....	146,887.66
Percentage on earnings ..	970,512.41
Pavement, taxes .....	264,271.30
	\$5,196,949.19
	\$1,094,809.87

### PROFIT AND LOSS ACCOUNT.

Balance from 1916 .....	\$5,408,873.68
Surplus earnings, after payment of all expenses, interest, taxes, etc. ....	1,094,809.87
	\$6,503,683.55
Dividends, 4 of 2% each, on paid-up capital .....	\$ 960,000.00
Balance from 1916 .....	\$5,408,873.68
Surplus carried forward ..	134,809.87
	\$5,543,683.55
	\$6,503,683.55

It will be noticed that while in the body of the report, under "Payments to City," pavement charges are shown as \$98,840.80 and general taxes as \$117,678.11, a total of \$216,518.91, in the income account "pavement, taxes" are shown as \$264,271.30, a difference of \$47,752.39.

The net earnings for 1917 decreased \$146,022.16 from 1916, the passengers carried were 158,087,984, an increase of 8,558,230, the transfers were 62,301,636, an increase of 958,873, and the percentage of charges, etc., to passenger earnings was 61.5, against 57 in 1916, 57.9 in 1915, 58.4 in 1914, 52.2 in 1913, 53.4 in 1912, 55.2 in 1911, 51.6 in 1910, 51.4 in 1909, 52.9 in 1908, and 53.9 in 1907, an increase in 10 years of 7.6.

The following directors were elected for the current year: Sir William Mackenzie, Sir Henry Pellatt, Senator F. Nicholls, Senator C. P. Beaubien, E. R. Wood, G. H. Smithers and F. W. Ross; Senator Beaubien replacing Sir Rodolphe Forget.

At a special meeting of shareholders, Feb. 26, called to pass a bylaw to increase the board of directors by two, no business was done, owing to the fact that the necessary number of shares were not represented, either by persons or proxies. The total number of shares in the company is 120,000, the number required to be represented being 80,000, and only 76,500 were represented, the directors holding proxies for 64,000. At a subsequent meeting of directors a dividend of 1% for the quarter ended Dec. 31, 1917, was declared, being at the rate of 4% per annum, instead of 8% as hitherto.

**Levis County Ry. Situation.**—The company's directors, including several from Montreal, met in Levis lately, and went over the lines, to consider what could be done to keep the cars operating, and under what agreement this could be accomplished. The company has been operating for some time at a loss, and an increase in the rates of fare has been proposed as one solution of the difficulty. The sale of the property to the municipality has also been spoken of.

**The Ottawa Electric Ry.'s franchise expires in 1923,** and the city's board of control has begun to look into matters connected with it with a view of deciding what action should be taken. The city must give the company a year's notice if it desires to take over the lines. (Feb., pg. 77.)

**The Quebec Ry., Light, Heat & Power Co.** develops 48,000 horsepower and has a surplus of 15,000 h.p. Besides it has about 28,000 h.p. yet unharnessed, and a campaign is about to be begun with a view to inducing western capital to start industries within range of the company's plant at Quebec.



# Cars for Montreal and Southern Counties Railway.

The Montreal & Southern Counties Ry. received recently the first two of three additional motor cars for interurban service, the main features being as follows:

Length over corner posts .....	43 ft. 4 in.
Length over vestibule .....	53 ft. 8 in.
Length over all, about .....	56 ft.
Distance between bolsters .....	30 ft. 8 in.

each two seats.

The car is heated with a hot air heater, located at front end of smoking compartment. There is a toilet lavatory room at front end of main compartment, equipped with standard dry hopper closet, also a 5 gall. water cooler, with faucet in an

and held up with a spring latch when the door is opened. All vestibule doors are equipped with Ottawa Car Mfg. Co. standard hold backs.

The cars are mounted on trucks with steel wheels, and are equipped with a Westinghouse quadruple 306 motor equipment with controls, with train line receptacles at each end for train operator. The cars are equipped with two trolleys on Ohio Brass Co. trolley bases, also O.B. trolley retrievers. The air brakes are Westinghouse type A.M.M., with supplementary reservoirs and governor synchronizing system, arranged for trolley circuit. The cars are also equipped with Westinghouse electro pneumatic signal system, pneumatic sanders, luminous arc headlights, strong locomotive type pilots, also steel snow scrapers; also Tomlinson automatic car and air couplers. The cars are painted green and lettered in gold.

Owing to the limitation in weight due to the Victoria Bridge, over which these cars are to operate, the cars had to be built as light as possible consistent with strength. The weight, completely equipped, is 61,000 lb.

The cars were built by the Ottawa Car Mfg. Co., Ltd., the foregoing information having been furnished by the superintendent of its car department, J. A. Wilson.

The Toronto Ry. and the Queen St. Bridge.—The Toronto Ry. having failed to pay \$80,000, balance of its share of the construction of the Queen St. bridge carrying its tracks over the C.P.R., G.T.



Montreal & Southern Counties Railway Car.

Width over eaves .....	8 ft. 6 in.
Width over side sills .....	8 ft. 1/4 in.
Height of top of rail to top of roof .....	12 ft. 8 1/2 in.
Normal seating capacity .....	60 persons

The car sides are straight and sheeted vertically with poplar sheeting, the roof is of monitor type, with ventilating deck sash operated by M. & S.C.R. standard deck sash fixtures, and glazed with opalescent glass. The side sash are of mahogany, the top sash are stationary and extend over two window openings, and are glazed with opalescent glass, set in lead cathedral design. All body side windows are equipped with wire screens of No. 12 gauge wire. The cars are built on a special light weight, all steel underframe, of through platform type. The side sills are of 5 in. x 3 1/4 in. at 11.6 lb. The centre sills are of 10 in. channel at 20 lb., continuous from bumper to bumper, the knees and bumpers are of 6 in. channel, the headstocks are built up of plates and angles, the bolsters are built steel castings; the body is strengthened up of pressed steel sections, plates, and with both top and bottom truss rods, and is also stiffened laterally by diagonal bracing in the underframe. There is also an antilumber spring buffer at each end of car to take any small collisions. The floors are of Georgia pine, laid double with heavy felt between. The body side framing is of light and strong construction.

The interior of the car is finished in Mexican mahogany, full finish. All metal trimmings are of Ottawa Car Mfg. Co. standard reversible type, upholstered in lacquered. The seats are M. & S.C.R. standard reversible type, upholstered in green pegamoid. The side windows are equipped with national single cam sash locks and national compression cam anti-rattlers; also rational spring plug rollers and nantasote curtains. Twelve polished bronze parcel racks are placed between



Montreal & Southern Counties Railway Car. Interior.

alcove reached from main aisle of car. The headlining is agasote painted green, the lights are in 6 circuits, arranged in clusters, along the upped deck, also along each deck rail, cross-over seats. Each vestibule door is equipped with a steel trapdoor to cover step opening when the door is closed. These trapdoors are hinged to the bottom of the vestibule door

R., C.N.R. and Don River, as ordered by the Board of Railway Commissioners, the City of Toronto obtained an execution against the company recently. The company applied for a stay of execution pending an appeal on the question of the Board's jurisdiction, but this appeal was dismissed Feb. 16, and subsequently it was announced that the amount was paid.



## London Street Railway Annual Report and Meeting.

Following are extracts from the report for the calendar year 1917 presented at the annual meeting in London, Ont., recently:—

Earnings—		
	1917.	1916.
Passenger . . . . .	\$413,241.58	\$420,704.92
Miscellaneous . . . . .	4,620.78	5,609.85
Gross earnings . . . . .	\$417,862.36	\$426,314.77
Expenses—		
Maintenance way and structures . . . . .	\$ 55,411.47	\$ 51,567.22
Maintenance equipment . . . . .	46,713.80	32,410.21
Power . . . . .	37,101.88	37,994.08
Car service . . . . .	155,396.55	138,653.55
General . . . . .	36,470.65	31,775.89
Total operating expenses . . . . .	\$331,094.35	\$292,400.95
Net earnings . . . . .	\$ 86,768.01	\$133,913.82
Deductions from net earnings—		
Interest on bonds . . . . .	\$ 29,647.97	\$ 32,138.29
Interest . . . . .	1,760.00	922.85
Taxes . . . . .	7,661.84	7,241.91
Miscellaneous . . . . .	221.00	.....
Total deductions . . . . .	\$ 39,290.81	\$ 40,303.05
Net income . . . . .	\$ 47,477.20	\$ 93,610.77
Construction and Equipment Expenditures.		
Track and roadway construction . . . . .	\$43,771.33	.....
Electric line . . . . .	463.04	.....
Buildings and fixtures . . . . .	671.70	.....
Cars . . . . .	180.80	.....
Motor line truck . . . . .	1,588.35	.....
Real estate (in trust) ex. 1916 suspense . . . . .	5,900.97	.....
	\$52,576.19	.....
Net proceeds, sale of scrap . . . . .	5,883.21	.....
Total . . . . .	\$46,692.98	.....

tracks was done in 1917, the tracks being relaid with new ties and new rail in concrete foundations, and paved with brick.

The directors, therefore, considered it inadvisable to declare a dividend for the 6 months ending Dec. 31, 1917, on account of the large decrease in the net income for 1917 and of the conditions as outlined in the foregoing statements.

Following are comparative statistics:—

	1917.	1916.
Passengers carried . . . . .	11,374,396	11,518,428
Expenses, per cent. of earnings . . . . .	79.24	68.6
Car earnings, per revenue passenger . . . . .	3.63c	3.67c
Transfers . . . . .	1,703,344	1,792,579
Total passengers . . . . .	13,188,803	13,311,006
Car earnings, per passenger . . . . .	3.13c	3.08c
Car mileage . . . . .	1,933,557	1,938,492
Gross earnings, per car mile . . . . .	21.61c	21.99c
Operating expenses, per car mile . . . . .	17.12c	15.08c
Net earnings, per car mile . . . . .	4.49c	6.91c
Miles of track . . . . .	36.10	36.02
Gross earnings, per mile of track . . . . .	\$11,575.13	\$11,835.46

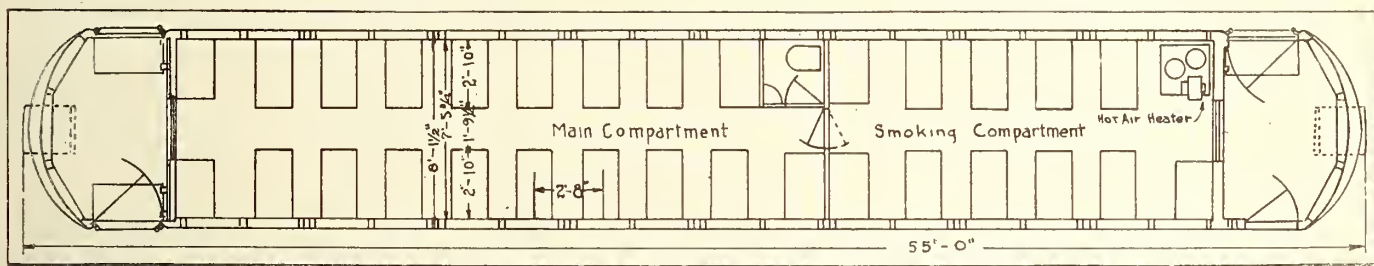
The officers were re-elected as follows: President, C. Currie, Akron, Ohio; Vice President, T. H. Smallman, London; other directors, P. W. D. Broderick, Toronto; Sir Herbert Holt, Montreal; R. R. Alexander, Cleveland, Ohio; W. M. Spencer and C. H. Ivey, London; Manager, C. B. King; Secretary-Treasurer, L. Tait.

## Electric Railway Traffic in Regina.

In the matter under the above heading, published in Canadian Railway and

## Women Conductors Not Likely for Montreal.

J. E. Hutcheson, General Manager, Montreal Tramways Co., in an interview recently expressed himself as opposed to the employment of women as conductors, giving the following reasons: "It would be extremely hard on a woman to have to tramp through the snow on freezing cold mornings, with a strong blizzard blowing, in order to be at the car yards at 4 o'clock. Nearly all our conductors are French; because most of the French population speak English, but not many English Canadians are conversant with French. This would debar many of the English speaking women of the city from replacing men in this capacity. The crowds at the rush hours are more than many men can handle and would be a most unpleasant, extremely difficult, if not wholly impossible, job for a woman to tackle. There are many aspects of the question of which the general public is ignorant. For instance, when we start a man we start him as a tripper. That means that we just put him on for a few trips morning and evening at the rush hours when we run extra, and we pay him by the hour. It is a couple of years before he takes a regular job. I would not like to see women conductors on in the rush hours. The situation is quite different and much easier to cope with in England. There, the cars are each one al-



Montreal & Southern Counties Railway Car. Floor plan.

Included in 1917 maintenance of equipment is \$10,627.33 for rebuilding cars, compared with \$1,978.33 in 1916. Five new p.a.y.e. cars were contracted for early in 1917, but delivery has been delayed, with the result that they will not be in service until the spring of 1918.

### General Review.

	Jan. 1, 1915.	Dec. 31, 1917.
Road and equipment . . . . .	\$1,326,785.73	\$1,466,328.44
Bonds and capital stock . . . . .	1,133,000.00	1,232,480.00

Difference in investment \$ 193,785.73 \$ 233,848.44

On Mar. 8, 1915, under the terms of the mortgage, the company commenced the redemption of its bonds at the rate of \$35,000 a year, bonds redeemed to date totalling \$105,000. While the company has improved its road and equipment on an average of \$46,514.25 a year, it has not been able to correspondingly increase its bonds and capital stock, with the result that on Dec. 31, 1917, there was invested in the road and equipment \$233,848.44 more than the total outstanding bonds and capital stock. With a surplus of only \$194,541.81 available, the financial operation becomes difficult.

While the gross earnings decreased in 1917, as compared with 1916, this was due in a measure to the large number of soldiers in training camp in the city in 1916, thereby causing an abnormal increase in 1916. The operating expenses show a large increase both in materials and labor, the total operating expenses being 79.24% of gross earnings, compared with 68.6% for 1916. Much reconstruction of

Marine World for February, there were two mistakes, "cash fares" being referred to instead of "cash and ticket receipts," and the word "specials" being used in the tabular statement instead of "transfers." The article is repeated correctly as follows:

A statement prepared by Regina Municipal Ry. officials shows that the traffic is about 65% greater in winter than in summer. Two days were selected for the test, viz., Monday, Sept. 10, and Monday, Dec. 10, both of which happened to be fine days, and typical of the season. The cash and ticket fares received on Sept. 10 were \$474.82, and on Dec. 10, \$795.56. The traffic figures for the two days on the various lines were:

	Sept. 10	Dec. 10	Per cent. increase
Red . . . . .	3,179	5,867	84.6
White . . . . .	2,109	4,013	90.3
Blue . . . . .	3,016	5,196	72.3
Green-red . . . . .	3,038	4,012	32.6
	11,342	19,088	68.3
Transfers . . . . .	1,574	2,212	40.5
	12,916	21,300	65.0

Fares Raised in Brandon.—The Brandon, Man., City Council, on Feb. 19, directed that a straight 5c fare be collected from passengers on the Brandon Municipal Ry., starting Feb. 20. Outstanding 6 for 25c tickets will be redeemed; workmen's tickets are now 6 for 25c, instead of 8 for 25c, and good only from 6 to 8 a.m. and 5 to 6.30 p.m.

lowed to contain only a stated number of passengers; they creep along with no confusion and everything runs smoothly and in orderly fashion. We are very short of men now, owing to the fact that very many are engaged in munition work. However, we have not yet taken into consideration New York's or England's solution of the problem. Before we do that we shall try replacing our men who have always had to be between 20 and 40 years of age, with men of from 40 to 60. We think a man over 40 will be quite capable of filling the position of conductor. The reason we did not accept them formerly was that we have a mutual insurance scheme by which the men pay certain sums of money to us and we pay them at any time that they are ill for a week or two. So, for our own protection we took men under 40."

Electrolysis in Winnipeg.—A press dispatch says that the long continued dispute between the Winnipeg Electric Ry. and the city over damage to the water mains by electrolysis will be settled, by the company paying the claim in return for an assurance that jitneys will be abolished.

The Hamilton Radial Ry., as a result of the heavy snowstorm at the beginning of the year, only cleared its double track as far as the canal, and one track across Burlington Beach. It was estimated it would have cost \$2,000 to clear the snow off the balance of the track.



## The Winnipeg Electric Railway and Jitney Competition.

In a statement issued Feb. 5, A. W. McLimont, General Manager, Winnipeg Electric Ry., said:—"The time has arrived when the public will have to decide as between the jitneys and the street railway company. In order to furnish the public with better transportation facilities the jitneys must be abolished. The continuation of both systems means inefficient service. Due to the effect of the jitney competition upon its revenues, the company is not in a position to make improvements, but upon the abolition of this competition, the company will be placed in a position where improvements can at once proceed that will provide Winnipeg with a much more adequate system of transportation.

"The company's idea of adequate transportation is to carry all passengers with the greatest degree of safety to the passengers and the public on the street; with the maximum of speed consistent with such safety, and with the maximum degree of regularity and certainty of schedule, with reasonable comfort to the passengers and over the shortest route to serve the maximum number of people.

"Towards accomplishing this, alterations will be made in the present rolling stock which will lower the car body, provide the cars with folding steps, proper front exits, better and easier loading and unloading facilities, improved heating conditions, a double floor, free from the present trap-doors, with a layer of felt between the boarding, suitable doors separating the body of the car from the platforms, the latest type of car lighting and improved route signs, making the rolling stock on the streets of Winnipeg equal in comfort and design to the modern type of cars used in larger cities in America; the remodelled car will also be fitted with every appliance to facilitate both motormen and conductors in the performance of their duties in the most effective manner. By the adoption of this type of rolling stock the elimination of many unnecessary stops and the accurate designation of stopping points by the white pole system, the company will be enabled to supply a much more rapid and regular service.

"The company proposes to make a special study of the loading and unloading of cars at congested points with a view to moving traffic as quickly as possible and removing any defects that may now exist. It must be borne in mind that there are certain physical conditions existing in Winnipeg which partly account for some of the defects at present existing in the service. For instance, single track bridges cause congestion and irregularity, and at times climatic conditions in winter make regular and continuous operation exceedingly difficult to maintain and tend to cause temporary interruptions. A study is being made of the entire transportation problem, including the unfavorable conditions enumerated above, with a view to supplying the public with adequate transportation.

"If the jitneys are not eliminated, the company will be faced with the alternative of a deteriorated service or applying for a revision of its charter so as to find some means to increase its revenues. If the jitneys are to continue, the two systems must be put upon an equal footing, and the street railway company will have to be relieved of its obligation to pay a percentage of gross earnings, and will have to be put in a position of being al-

lowed to charge the same fares as the jitneys, doing away with all transfers, and will have to be relieved of its pavement obligations and other burdens imposed upon it under its contract with the city."

This statement came up for consideration at a public meeting held on Feb. 8, to discuss transportation matters. One of the speakers was E. Anderson, K.C., representing the Winnipeg Electric Ry., who stated that the success of the city and the success of the company go together. If the one goes to the wall, the other will be seriously affected. If the company goes into liquidation, it will be a black eye for the city, from which it will be very hard to recover. He continued:—"We want to lay before you exactly our position. We are losing \$400,000 yearly by reason of competition and other causes. Our operating expenses have grown very rapidly from \$1,369,000 in 1913, to \$1,762,000 in 1917. There will be a deficit of approximately \$70,000 this year, and therefore not a cent of dividend. The lifting of the competition will remedy the situation. We propose to take the money we would get as a result of the elimination of the competition and put it into the improvement of the service. I want to give you a clear conception of our financial position. The company was nearly going into liquidation on Jan. 15 last, when \$750,000 notes, secured in New York, half of a total of \$1,500,000, had to be met."

Mr. Anderson went on to tell of the refusal to renew the notes when the company's statement was presented. The company had to go to the bankers, and it was only upon the personal guarantee of some of the directors that the bank finally advanced the amount required. Many complaints have been voiced regarding the service. Has it occurred to these people that they are making the strongest argument they can in favor of the abolition of the jitneys? The position that exists as regard my clients, is principally due to the existence of the jitney. In view of our present situation, if the jitneys are allowed to continue on the streets, we have got to adopt some radical policy. We shall not be in a position to give the service that is demanded. We shall, maybe, be forced to either let the service run down to such a point that it will be absolutely inadequate, or ask for a revision of our contract, so that we shall be forced to ask nickel fares and discontinue the transfers. If the jitneys are eliminated then we will not ask for any change in fares."

He contended that the company had a franchise for an exclusive right of transportation on the streets of Winnipeg, with the exception of that provided by animal drawn vehicles. It was his personal view that if the company was permitted to charge a 5c straight fare, and was not obliged to give transfers, it need not fear jitney competition.

A. W. McLimont, the company's General Manager, also spoke. He stated that the local conditions of transportation must be dealt with as they were found. The company could not control the labor and could not control the operating expenses. The cost of supplies had increased by 247%. The payroll could not be paid by tearing up a mile of track or taking down a building. It has to be earned in hard cash. He stated that with

the revenue that is taken away from the company at present by competition, it could inaugurate improvements that would very materially remove the congestion existing.

R. B. Graham, counsel for the jitney men, said until the company has stated the minimum it would accept, or the maximum it would offer, the jitney men would not enter into any negotiations.

There was a good deal of rambling discussion, and nothing definite seems to have been done, the meeting adjourning to a day to be named by the city council's transportation committee.

The object of the committee in calling the meeting seems to have been to bring before the public all the information possible, and to obtain from the public expressions of opinion on the whole question, so that the committee would be in a better position to arrive at a solution of the jitney question.

## The City of Toronto and the Toronto Railway.

The City of Toronto is applying to the Ontario Legislature for the passing of an Act to provide that in default of the Toronto Ry. complying with the provisions of the Ontario Railway and Municipal Board's order set forth as schedule "G" to the act passed in the 7th year of His Majesty's reign, chap. 92, and validated by sec. 17 of said act, the company shall pay the city a penalty of \$500 a day from Jan. 1, 1918, for each car supplied by the company less than the number fixed by the order, and that such penalty shall continue in force from day to day until the full number of cars called for by the order has been supplied and placed in operation by the company.

The City of Toronto is also applying to the Ontario Legislature to pass an act to direct the Ontario Railway and Municipal Board to enter upon and take possession of the Toronto Ry., and to assume and take over all or any of the powers, duties, rights and functions of the directors and officers of the company, and supervise and direct the management of the company and its railway, under the provisions of the Ontario Railway Act, sec. 260.

**Toronto Suburban Ry. Express Service.** An express service has been started on the T. S. R., on the old line to Woodbridge and on the new extension to Guelph. Arrangements have been made to pick up and deliver in Toronto and Guelph by the company's own auto truck, and in Georgetown by a hired carter. There have been many enquiries from traders as to rates and service, and a fair amount of shipment is already offering. In the country districts farmers are pressing strongly for facilities for taking their milk, as the service will save them hours every day, the line passing through a good farming district. At present the milk has to be carted some miles to the steam railways.

**The Ottawa Electric Railway's Report** for the calendar year 1917, presented at the annual meeting on Feb. 4, is published in full on page 82 of this issue. The number of passengers carried increased from 27,033,798 to 29,347,692, and the net earnings from operation increased \$50,724.71, the most satisfactory feature being the reduction in operating expenses, which were the lowest in the company's history, being 56.8% against 58% in 1916. The directors and officers were re-elected.



## Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—We are officially advised, in connection with recent press reports, that while the Brantford Railway Commission intends to build more track, there is very little chance that anything will be done this year. The difficulty of getting construction supplies and labor stand in the way. (May, 1917, pg. 203.)

**Calgary Municipal Ry.**—It is proposed to build a short section of line in Calgary, Alta., which will have the effect of saving 2,207 ft. on the Ogden line. The cut-off will start near the stockyards and run across the Pearce-Beattie-Walker syndicate's land to near the Canada Malting Co.'s elevator, then alongside the public right of way to the Ogden bridge. Plans for this work have been submitted to the city council by Commissioner Graves. (Oct., 1917, pg. 407.)

**Edmonton Radial Ry.**—We are officially advised in connection with the press report referred to in our last issue, that the extension is along 106th Ave., from 97th to 101st St., and is about 925 ft. long. It consists of a temporary track to connect the two streets named to facilitate the operation of one-man cars. It is desired that the cars may belt around if necessary. (Feb., pg. 77.)

**Hydro-Electric Power Commission of Ontario.**—The Board of Railway Commissioners has authorized the Hydro-Electric Power Commission of Ontario, subject to the terms of an agreement, to build a power development canal and construction railway, under the Michigan Central Rd. on lot 57, Stamford Tp., Welland County, and during the period of construction, to divert the M.C.R. tracks; plans for the work to be approved by the Board of Railway Commissioners' engineer.

**London & Port Stanley Ry.**—The London, Ont., City Council is asking the Ontario Legislature to authorize it to pass a bylaw, without obtaining the ratepayers' consent, to issue debentures for \$138,000 to enable the London Railway Commission to pay for the construction of the switch and bridge to Beatty Bros.' industrial premises, and other works necessary to cope with increasing traffic on the L. & P.S. Ry. (Sept., 1917, pg. 368.)

**Sandwich, Windsor & Amherstburg Ry.**—Complaints were made of the condition of the company's tracks at the Walkerville town council meeting, Feb. 12. The mayor is reported as having said, "These conditions will be remedied this spring, if the town has to do it for them and then send them the bill of costs." (Feb., pg. 77.)

**Toronto Suburban Ry.** has built a barn at the intersection of Bay and Dundas Sts., Guelph, to hold one radial car. It is necessary to house a car overnight and for certain hours during the day time at the Guelph end of the line. The building is 20 ft. x 15 ft., and besides having room for the car, contains a passenger waiting room and a freight platform. The building is 20 ft. high. Provision is made for heating the waiting room, and the lighting is taken from the city system.

The City of Toronto is applying to the Ontario Legislature to validate an agreement made between the city and the company, Oct. 16, 1917, extending the time within which the company may build and put in operation its railway upon the portion of Davenport Road lying east of Bathurst St. to the northern limits of the city as the same existed in 1899. (Jan., pg. 32.)

## Mainly About Electric Railway People.

E. H. Derricott has been appointed Accountant, Lethbridge Municipal Ry., vice D. Donald, resigned.

T. J. Stewart, M.P., of Hamilton, Ont., has been elected a director of the Quebec Ry., Light, Heat & Power Co.

A. H. Foster, Manager Guelph Radial Ry., was granted an increase of \$200 in salary, Feb. 14, making it \$1,300 a year. He has been appointed Fuel Commissioner for the City of Guelph, Ont.

Duncan McDonald, formerly General Manager, Montreal Tramways Co., was reported, Feb. 28, to be seriously ill with pneumonia.

R. W. Shaw, M.D., has been appointed a member of the London Railway Commission, London, Ont., vice M. D. Fraser, K.C., deceased.

H. C. Nickle, Superintendent and Purchasing Agent, Kingston, Portsmouth & Cataraqui Electric Ry., has been appointed fuel controller for Kingston, Ont.

Lloyd Harris, who has been associated with the British War Mission in Washington, on behalf of the Canadian Government, for several months, and who, among his other activities, is Secretary-Treasurer, Lake Erie & Northern Ry., has been appointed Chairman of the Canadian War Mission to the United States, with office in Washington, D.C.

Lord Beaverbrook, who has been appointed Chancellor of the Duchy of Lancaster, under the British Government, and who is undertaking general propaganda work relating to the allied nations' position regarding the war, is a director of the British Columbia Electric Ry. In accordance with the general custom, he will have to resign this position.

Claude C. Curtis, who has been appointed Manager, Cape Breton Electric Co., Sydney, N.S., was born at Battle Creek, Mich., Mar. 27, 1883, and graduated B.S. in mechanical engineering from the University of Michigan, in 1907. He entered the Stone & Webster Engineering Corporation service in July, 1907, and has been, to Nov., 1907, inspector on construction of power station, Lowell, Mass.; Nov. to Dec., 1907, in similar capacity at Pawtucket, R.I.; Dec., 1907, to Mar., 1912, Assistant Lighting Superintendent, Lighting Superintendent, and Manager, successively, Ponce Ry. & Light Co., Ponce, Porto Rico; Mar., 1912, to Aug., 1913, secretary to R. Robb and H. G. Bradlee, Stone & Webster Co., Boston, Mass.; Aug., 1913, to July, 1915, Superintendent, Houghton County Electric Light Co., Houghton, Mich.; July, 1915, to Feb., 1918, Superintendent Light and Power, El Paso Electric Ry., El Paso, Texas.

The Toronto Civic Transportation Commission, which was appointed some time ago to carry out preparatory work consequent on the probable taking over of the Toronto Ry. by the city on the expiry of the company's franchise in 1921, held a meeting, Feb. 5, to consider the situation following the vote given by the ratepayers, Jan. 1, in favor of the city taking over and operating the railway. The commission is reported to have decided to make arrangements for the preparation of plans and specifications for a car building plant for the building of cars for use on the civic lines, and also to prepare for the purchase of 250 cars for delivery by Sept., 1921.

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry. and allied companies:**—

	Dec. 1917	Dec. 1916	6 months to Dec. 31, 1917	6 months to Dec. 31, 1916
Gross	\$555,000	\$496,959	\$2,923,660	\$2,665,385
Expenses	388,222	360,593	2,323,863	2,125,679
Net	166,778	136,366	599,797	539,706

The working expenses for Dec., 1917, as shown, do not include any charge in respect of the cost of repairing damage caused by blizzard; this being estimated at \$150,000, is being charged against the reserve fund.

**Guelph Radial Ry.**—The directors, on Feb. 14, declared a dividend of 3½% on the capital stock, which is owned by the City of Guelph, Ont. This dividend, which will absorb \$6,000, was rendered possible because the city's light and heat commission had refunded the G.R.R. \$2,000 on account of overcharges for power in previous years.

**Hamilton St. Ry.**—The receipts for the fourth quarter, 1917, were \$201,748.21, of which the city's share on mileage and percentage was \$18,019.81. The total for mileage and percentage received by the city for 1917 was \$68,796.47 against \$64,062.97 in 1916.

**London & Port Stanley Ry.**—The City Treasurer reported to the London, Ont., city board of control, Feb. 15, that the amount advanced by the city to the London Railway Commission on account of debentures to date was \$994,905.48; the amount paid from the revenue funds of the L. & P.S.R. to June 30, as shown by the auditors' report, was \$167,189.83, a total of \$1,162,095.31. This expenditure is to be met as follows: Authorized debenture issue of \$1,000,000; further debenture issue asked for by the London Railway Commission, \$131,079.76; surplus earnings, 1915-1917, \$45,055.62, a total of \$1,176,135.38, leaving a balance of \$14,040.07 to meet unfinished work.

**London St. Ry.**—In accordance with the terms of the mortgage trust deed of Sept. 8, 1896, 35 debenture bonds of \$1,000 each were drawn for redemption recently, and are payable Mar. 8, after which they will cease to bear interest.

**Regina Municipal Railway.**—Approximate passenger receipts for Jan., \$21,500. Approximate increase over Jan., 1917, \$1,500.

**Toronto Ry.**—Receipts for January, \$562,707; city percentage \$84,406, against \$510,053 receipts and \$76,508 city percentage for Jan., 1917.

**Winnipeg Electric Ry.**—The Winnipeg Free Press of Feb. 9 said:—"The Winnipeg Electric Ry. has failed, for the first time in its history, to meet its financial obligations to the city on the date fixed under its charter. The company, under its franchise, must pay annually to the city exchequer 5% of its gross earnings. To this end it must, under its agreement, submit to the city treasurer on or before Jan. 15, its financial statement for the year ending Dec. 31, showing the amount of its revenue due to the city, and it must pay over to the city before Feb. 1 the amount represented by 5% of its gross earnings. The financial statement was submitted this year as usual, but the company has failed, so far, to pay over the amount due, which for last year is approximately \$99,000. Financial inability to meet this charge is the only reason the company offers for its failure to pay up. The board of control has instructed the city treasurer to draw the company's attention to the amount owing."



## Electric Railway Notes.

The Nipissing Central Ry. service between Haileybury, Cobalt, and Liskeard, was badly interfered with by snow storms in February.

Guelph Radial Ry. employees asked an increase of 3c an hour in their pay recently. The directors granted 1½c an hour war bonus, at their meeting Feb. 14.

The Nova Scotia Tramways & Power Co.'s conductors and motormen in Halifax, N.S., were stated in a press dispatch of Feb. 23 to have gone on strike.

The Edmonton City Council is asking the Alberta Legislature for authority "to collect street railway fares according to distance travelled, or on a zone system."

Regina, Sask., commercial travellers have asked the city council to direct the putting on of a special car on the Regina Municipal Ry., to meet late trains at the union station.

The Winnipeg City Council completed taking a census of traffic on the Winnipeg Electric Ry., Feb. 11. It is being tabulated and is expected to be presented to the city council early in March.

The Toronto Civic Ry. has received 5 car bodies from Preston Car & Coach Co., out of an order for 13, placed about a year ago. The equipment is being installed in the railway's own barns.

The British Columbia Electric Ry. succeeded in restoring the service on its Fraser Valley line, through to Chilliwack on Feb. 4. The line was badly damaged by a storm at the beginning of January.

The Chatham, Wallaceburg & Lake Erie Ry. was reopened for traffic Feb. 12, after being closed down for some weeks owing to severe snow storms. The branch to Erie Beach, is not yet reported cleared.

Some 200 Montreal Tramways Co.'s employees are stated, in a press dispatch, to have formed a local union, in affiliation with the Amalgamated Association of Street and Electric Employees of America.

Edmonton, Alta., citizens have complained to the commissioners, among other things, about "the very unsatisfactory handling of passengers transferring from the Calder St. car," on the Edmonton Radial Ry.

The Halifax, N.S., Board of Control has recommended to the city council a number of new traffic regulations for adoption in handling street traffic. Among these is one providing that all traffic shall keep to the right, instead of the left as hitherto.

It is stated in Ottawa, that owing to the adoption of liquor prohibition regulations in Quebec, the electric railway traffic between Ottawa and Hull has largely decreased. One paper says most of the cars carry three, four and five passengers, whereas they formerly had standing room only.

The Manitoba Legislature has before it a bill respecting electrolysis, for the purpose of providing a definite recourse for the city of Winnipeg in connection with injury to its water mains alleged to have been caused by the Winnipeg Electric Ry.'s conduit wires, etc. This matter has been the source of considerable controversy between the Winnipeg City Council and the company for some years.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., and representatives of the Chicago, Milwaukee & St. Paul Ry. gave a categorical denial, Feb. 15, to a report that the latter company intended taking over any part of the B.C.E. Ry. The C., M. & St. P. Ry.

has an arrangement with the B.C.E. Ry. regarding the hauling of freight into Vancouver.

Several Hamilton St. Ry. conductors were charged with stealing fares and tickets from fareboxes in Dec., 1917. Conductor Rodney was found guilty, but Judge Monk stated a case for the superior courts in which certain questions as to court procedure were submitted for consideration. These matters were argued Feb. 20, and the court reserved judgment. All the other cases were adjourned pending the settlement of the Rodney case.

Vancouver City Council representatives had a lengthy conference with British Columbia Electric Ry. officials, Feb. 12, upon matters connected with the improvement of the service in the city. W. G. Murrin, Assistant General Manager, informed the city's representatives that a new schedule was being operated, and that 10 additional cars had been put on the lines the previous day. It was shown that many of the points raised had been met by the new schedule, and consideration of the others was promised.

The Edmonton, Alta., City Council and its Public Utilities Committee met representatives of the union and non-union street railwaymen Feb. 6. The men did not ask for an increase of wages, but for a revision of the rules governing employment. After discussion it was agreed that a committee of the council and a committee of the men should each draft a set of rules and regulations, and then meet to discuss them, and attempt to agree upon rules for the approval of the council and the men as a whole.

The Toronto & York Radial Ry. car barn on the Metropolitan Division, Yonge St., Toronto, was burned, Feb. 7, about two-thirds of the building proper being a complete loss. Three large type inter-urban cars were totally destroyed, and 1 freight car and 3 other cars had the vestibules burned, while a further 4 cars were blistered. The company is securing information as to what cars are available for immediate service to replace those destroyed, it being considered necessary to use a similar type. The company's car barn on the Scarboro Division, at Kingston Road, was destroyed by fire, Feb. 24, together with one single truck car and 3 double truck cars. The loss, which has been estimated as \$70,000, is covered by insurance.

**Fares Advanced in Regina.**—Several changes were made in passenger fares on the Regina Municipal Ry. on Feb. 10, the only fares remaining unchanged being the straight cash fare of 5c from 6 a.m. to midnight, the night cash fare of 10c. from midnight to 6 a.m., and the children's tickets, good for children up to 14 years of age, which are sold at 10 for 25c. The following changes have been made:—Strip tickets, formerly sold, 6 for 25c., are now 5 for 25c.; book tickets, formerly sold, 25 for \$1, are now 21 for \$1; labor tickets, 8 for 25c., and formerly good from 6 to 8 a.m., and 5 to 7 p.m., are now only good from 6 to 8 a.m., their use from 5 to 7 p.m. being eliminated. The resolution authorizing the changes was passed by the City Council Feb. 8, on the mayor's casting vote. During the discussion it was stated it cost 6.57c. for every passenger carried, while the receipts were but 4.6c. per passenger. The estimated increase in revenue from the increase is put at \$31,700.

## Winnipeg Electric Railway Employees' Wages.

Winnipeg Electric Ry. employees notified the company, Feb. 15, that an increase of wages varying from 2c to 3c an hour was desired, and that the new schedule should become effective May 1. The present rates of pay are as follows: 28c for first six months service, 30c for second six months, 31c for first year, 33c for second year, 36c for third year. The 2c an hour increase is asked for those up to the end of one year service; the 3c for those having more than one year's service. It was stated that this would need an increase of over \$60,000 in the company's pay roll.

A. W. McLimont, General Manager, is reported to have said, Feb. 18, that new terms of pay had been agreed upon, and that a new schedule had been arranged, while on the same day the secretary of the union stated that negotiations upon certain essential matters not affecting the rates of pay were still under discussion.

## Regina Municipal Railway's Annual Report.

A Regina, Sask., paper has published the following figures showing the results of the operation of the Regina Municipal Ry. for the calendar year 1917, and stating that they have been certified by the auditors:

Total receipts .....	\$321,727.45
Operating expenses .....	199,572.98
Operating surplus .....	\$ 32,154.37
Fixed charges .....	96,066.66
Deficit .....	\$ 63,912.19
1914 deficit .....	\$ 6,034.14
1915 deficit .....	8,205.36
1916 surplus .....	21,430.51
1917 surplus .....	32,154.37

In commenting on these figures, the Regina paper says:—

In 1916, the surplus on operation was \$21,430.51, making last year's surplus an increase of approximately 50% over this figure. In all years since the inception of the system a deficit on operation was shown except in 1913, when there was a surplus of about \$1,000. Since 1915 there has been a steady improvement in the financial showing of the road on operation account as shown by the following figures:

1914 deficit .....	\$ 6,034.14
1915 deficit .....	8,205.36
1916 surplus .....	21,430.51
1917 surplus .....	32,154.37

**Editor's Note.**—In referring to "operation" above, of course fixed charges are not included. After deducting them for 1917, the deficit is nearly double the operating surplus.

**Underground Railways Proposed for Montreal.**—F. Stuart Williamson, M.Can.-Soc.C.E., formerly Chief Engineer, Central Ry. of Canada, has issued a booklet, "Municipal underground railways for the City of Montreal," in which he advocates the construction of rapid transit underground electric railways in Montreal, to be built by the city, and to be leased to and operated by the Montreal Tramways Co. The routes proposed are from Place d'Armes to Mile End, 2.84 miles; from Place d'Armes to Notre Dame des Graces, 3.98 miles; and from Peel St. to Moreau, 3.12 miles, a total of 9.94 miles. Particulars are given of methods of financing, the construction of subways adopted in Boston, New York, Providence and Philadelphia, together with extracts from various reports and papers relating to transportation in cities.



# Marine Department

## The Shipbuilding Situation and Outlook in Canada.

By Alexander Johnston, Deputy Minister of Marine and Fisheries.

[Considerable doubt is, at times, expressed as to whether shipbuilding is to become a permanent industry in the Dominion, or whether, when the governments cease placing orders on the present basis, the majority of plants which have been got together to cope with the emergency, will be closed and the staffs dissipated. In the situation, as it exists today, there is no room for the pessimist. The opportunity for which Canadian shipbuilders have been waiting is here, and it remains for them to make the most of it. There is no doubt that for several years to come the shipbuilding yards of the whole world will be fully occupied in replacing lost tonnage of all descriptions, as well as in keeping pace with the ordinary requirements of water transportation. Under existing conditions, there is ample opportunity for shipbuilding and allied trades to, at least, lay the foundations for a large and permanent shipbuilding trade on both oceans as well as on inland waters. The whole question is dealt with by the Deputy Minister of Marine in that department's report for the last fiscal year, as follows.—Editor.]

As the war has progressed, and an ever increasing amount of the ocean tonnage of the allied nations (now including the United States), and of the neutral nations, has been sunk, since Germany's declaration of unrestricted submarine warfare, the need of shipbuilding activity throughout the world to supply the wastage has become of paramount importance. This has been thoroughly realized both in the United States and Canada.

In the United States, since the outbreak of the war, 29 new shipyards have been organized, all of large proportions and thoroughly up to date, of these 15 are on the Atlantic coast, 13 on the Pacific, and 1 on the Gulf of Mexico, and substantial improvements and enlargements have been made to 28 existing yards. Of the improved yards, 14 are on the Atlantic and 2 on the Pacific coast, and of those that have been enlarged, 6 are on the Atlantic, 5 on the Pacific, and 1 one on the Gulf of Mexico. The lake yards, which under normal conditions only build for internal traffic, are now building overseas shipping, a good deal of it for Scandinavian owners.

In Canada, since the beginning of the war, the number of privately owned shipyards has been about doubled. Apart from the introduction of the larger yards, there has been in the Maritime Provinces generally, and in Nova Scotia in particular, a revival of the wooden shipbuilding trade, particularly in the form of small schooners, with or without auxiliary power, which are quickly and cheaply built, and at anything approaching the present abnormally high freight rates should pay handsomely.

All efforts abroad, as elsewhere, are of course, hampered by the shortage of steel, but this shortage is not likely to continue for any length of time after the restoration of peace, as the enormous demands for munitions of war will then cease. The revival of wooden shipbuilding activity in the United States has of late been remarkable, and it would almost seem to be in a fair way to rival in amount of ton-

nage the output of U. S. yards in the days of the clipper ship. The nearness of large supplies of timber has placed the wooden shipyards of Maine, the Southern States, and the Northwest Pacific coast in a position of great advantage. This last condition, of course, applies equally and perhaps even to a greater extent to our own Canadian yards in the Maritime Provinces and on the Pacific coast, and it appears that they are making ample use of it.

It can scarcely be disputed that no new form of industry in Canada affords greater possibilities than that of shipbuilding. The objections usually advanced to the establishment of the steel shipbuilding industry on a large scale in Canada are: that the facilities and experience of Canadian machine shops are not adequate to the production of the engines required for ocean going ships; and that the present high cost of shipbuilding material makes it an expensive venture. Neither of these objections, of course, applies to the building of wooden ships, which industry, owing to the great and immediate demand for freight carriers, has experienced a remarkable revival, both in Canada and the U. S. The first objection has been of late very much lessened, if not altogether removed. The great demand for the output of munitions has given a stimulus to the installation of large machine shops throughout Canada, and work is done on a scale which would have been quite impossible a few years ago. Although there are in Canada as yet no machine shops exclusively devoted to the production of marine engine, there are today in Toronto, Montreal, and Hamilton, and possibly elsewhere, shops able and willing to turn out for an adequate price marine engines for ocean going ships. The second objection, namely, the high cost of building materials and labor is countered by the fact of the abnormally high rate of the price for freighters, which is not only abnormally high now but still mounting, as the following taken from the New York Journal of Commerce of Feb. 27, 1917, show: "The price of steel steam tonnage for immediate delivery ranges from about \$215 to \$220 a ton, but very few prompt boats are available at that or any price. For delivery in 6 months the price at which owners are holding their boats is from \$155 to \$165 a ton."

The question which an intending shipbuilder will naturally put to himself is, will the demand for the products of my shipyard last for a sufficient length of time and at sufficiently high prices to assure me a reasonable return on the necessary outlay? The following considerations may enable him to come to a right conclusion. Since the beginning of the war, and up to Mar. 1, 1917, there had been destroyed by acts of war, and without regard to losses from natural causes, 4,811,100 tons of shipping, and the German submarines are at present sinking ships at the rate of 10% of that total tonnage each month; if continued at this rate for one year, nearly half the mercantile shipping of England will be lost at the end of the year. The Cunard Steamship Co. has actually placed orders in the U. S. for 11 big ships, ranging from 7,500 to 12,000 tons, and is placing additional or-

ders there, amounting in all to 260,000 tons, at a cost of about \$30,000,000. The merchant ships under construction or under contract for construction in the U. S. on Jan. 1, 1917, numbered over 400, with a total tonnage exceeding 1,500,000, and about half of this shipping was on foreign account and included nearly every nationality. The imperative demand of the U. S. Government for the prompt building of over 500,000 tons of war shipping will largely curtail their capacity for turning out merchant shipping for the next three years. Since the beginning of the war, new corporations organized for active shipbuilding operations in the U. S. have been formed with a total capital of \$150,000,000. As against the selling price of \$40 to \$50 a deadweight ton for tramp freighters prevailing before the war, present contracts can be had for \$150 a ton, and this for delivery at some time in the future.

There are some other considerations as well, perhaps, more nearly affecting Canadian output. Ships to the value of \$60,000,000 to be built in Canadian yards this year (1917) are already under contract. Included in this amount are orders for vessels amounting to \$25,000,000 placed on behalf of the Admiralty through the Imperial Munitions Board, 100 others are under construction at plants in various cities throughout the Dominion, as well as certain craft regarding which information cannot be given. In this situation of the shipbuilding industry, necessitated by the demand for tonnage to meet war conditions, the British Controller of Shipping, the British Admiralty, the Imperial Munitions Board, and two Dominion Government departments have had a part. Additional contracts for the building of merchant ships are likely to be placed, and there is also a likelihood that greater activity in the way of building dry docks will be shown by the shipbuilding industry. Negotiations are in progress with a view to introducing the manufacture of steel plates for ships and structural steel in Canadian plants. At present Canadian steel companies produce only lighter forms of structural steel. They have been engaged, however, of late, in filling orders for steel for munitions. However, the munition industry is only a temporary one which will cease to exist at the end of the war. Indeed it is stated an intimation has already been received that the output of large shells may be curtailed, because the great industrial development in Great Britain makes it possible to produce there a sufficient quantity of those projectiles to meet the requirements. If the rolling of ship plates and the making of structural steel is undertaken by Canadian firms, they may become permanent features of the country's industrial activities.

The question of freight rates after the war is, of course, of the utmost importance to the shipbuilding trade. The present scale of freights will not, of course, continue after the war, and the main question to determine is how soon the break in the freight market will take place, following the cessation of hostilities. Some shipping people hold that the break will be sharp and sudden, others



that the very slight additions through new construction now being made to the tonnage of the world will tend to ward off any tendency to a sudden decline when the war is concluded. It is said in support of the latter contention that although some 5,000,000 tons of German and Austrian shipping now immobilized will be released, the shipping already sunk will decrease the world's fleet by 1,000,000 tons, while the 2,000,000 tons of new shipping at present in construction throughout the world is not expected to offset at once the losses due to the war, not to speak of the process of attrition due to natural causes (perils of the sea), which annually removes some 1,500,000 tons of shipping from the register. The prevailing opinion among shipping men seems to be that owing to the depletion of raw materials and foodstuffs caused by the war, not only in belligerent but neutral countries as well, the merchant marine of the world will be taxed to the utmost to make good the shortage, and freight rates will in all probability remain considerably above the normal for some years after the declaration of peace.

In competition with U. S. builders in the construction of steel ships, Canada is faced with the following difficulties: Steel plates for hulls and boilers are not yet produced in Canada in sufficient quantities; steel shapes for the frames of ships, and which are different in section from structural shapes for bridges and buildings, are not now rolled in Canada in sufficient quantities; and the organizing and training of an operating force to successfully establish such an industry requires much time and involves a large outlay. It would be difficult to exaggerate the importance of shipbuilding as a national undertaking to a country that has, like Canada, an extensive coast line both east and west, superb inland communication by lakes and rivers, and whose export trade is chiefly overseas. It is not to be expected that Canadian yards could turn out the enormous profits at present made by the U. S., as these now possess every form of material, from the iron ore and coal, through all the manufacturing processes, to the finished ship, and, save for the increased cost of labor, can turn out as cheaply a ship which today sells at \$150 to \$165 a ton, as one which in pre-war days sold at \$50 a ton; but possibly with the aid of one or other of the methods already adopted by some other governments for encouraging the growth of a merchant marine, it is not unreasonable to suppose that Canadian shipbuilding might be put on a firm, enduring, and profitable footing.

**Order of Coaling Steamships.**—An order in council has been passed under the War Measures Act, 1914, adding sec. 22B to the Defence of Canada Order, 1917, as follows:—"The competent naval authority may prescribe the order in which each vessel shall be supplied with bunker coal, or other fuel, at any port in Canada, and in exercising this power, he shall take into consideration the services in which the several vessels requiring fuel are engaged and their relative urgency."

**The Sullivan-Hall Shipping Co., Ltd.,** has been incorporated under the Dominion Companies Act, with \$20,000 capital and office at Winnipeg, to take over the grain and vessel brokerage, and marine insurance business, heretofore carried on there by the Sullivan-Hall Shipping Co., and to act as agents and brokers for railway, shipping and transportation companies, and to own and operate steam and other vessels and other transportation facilities.

## Result of the Enquiry into the Mont Blanc-Imo Collision at Halifax.

Mr. Justice Drysdale, of the Nova Scotia Admiralty Court, gave the following judgment on Feb. 4:—"Having been directed by the Minister of Marine to hold a formal inquiry into the cause of the explosion on the s.s. Mont Blanc on Dec. 6, 1917, I have to report as follows:—As directed I had associated with me, as nautical assessors, Capt. Demers, of Ottawa, Dominion Wreck Commissioner, and Capt. Walter Hose, R.C.N., of Halifax. I began the inquiry on Dec. 13, 1917, and having heard all the witnesses that could throw any light on the situation, and having conferred with the nautical assessors, I have reached the following conclusions, and desire to report as follows:—

"The explosion on the s.s. Mont Blanc was undoubtedly the result of a collision in Halifax harbor between the Mont Blanc and the s.s. Imo, caused by violation of the rules of navigation. The pilot and master of the Mont Blanc were wholly responsible for violating the rules of the road. Pilot Mackay, by reason of his gross negligence, should be forthwith dismissed by the pilotage authorities and his license cancelled. In view of the gross neglect of the rules of navigation by Pilot Mackay, the attention of the law officers of the Crown should be called to the evidence taken in this investigation, with a view to a criminal prosecution of such pilot. We recommended to the French authorities such evidence, with a view to having Capt. Lamodec's license cancelled and such captain dealt with according to the law of his country. It appearing that the pilotage authorities in Halifax have been permitting Pilot Mackay to pilot ships since the investigation commenced, and since the collision above referred to, we think they are deserving of censure. In our opinion the authorities should have promptly suspended the pilot. The master and pilot of the Mont Blanc are guilty of neglect of the public safety in not taking proper steps to warn the inhabitants of the city of a probable explosion.

"Commander Wyatt is guilty of neglect in performing his duty as Chief Examination Officer, in not taking proper steps to ensure the regulations being carried out, and especially in not keeping himself fully acquainted with the movements and intended movements of vessels in the harbor. In dealing with the Chief Examination Officer's negligence in not ensuring the efficient carrying out of traffic regulations by the pilots, we have to report that the evidence is far from satisfactory, that he ever took any efficient steps to bring to the notice of the Captain Superintendent, neglect on the part of the pilots. In view of the allegations of disobedience of the Chief Examination Officer's orders by pilots, we do not consider such disobedience was the proximate cause of the collision.

"It would seem that Halifax pilots attempt to vary the well known rules of the road, and in this connection we think Pilot Renner, in charge of the tramp steamer on the morning of the collision, deserving of censure. The regulations governing the traffic in Halifax harbor in force since the war were prepared by the competent naval authorities, but do not specifically deal with the handling of ships laden with explosives, and we have to recommend that such competent authorities forthwith take up and make specific regulations dealing with such subjects. We realize that whilst the war goes on, under present conditions explosives must move, but,

in view of what has happened, we strongly recommend that the subject be dealt with specifically by the proper authorities."

Immediately after the delivery of the judgment, Capt. Lamodec, of the Mont Blanc, and Pilot Mackay were arrested on charges of manslaughter, but were released on bail. Counsel for Capt. Lamodec submitted that as the latter was a French subject the Governor General's consent would be necessary before he could be put on trial. Commander F. W. Wyatt, Chief Examination Officer, who had been suspended and subsequently superseded, was arrested on Feb. 5, charged with unlawfully killing Pilot Wm. Haynes of the s.s. Imo, and was also released on bail.

### The Shipping Situation in Newfoundland.

St. John's, Nfld., press dispatch, Feb. 9. So critical has the shipping situation become in Newfoundland that the government has decided to create a ministry of shipping, to exercise control until the end of the war. The constantly dwindling tonnage, due to the requisitioning of vessels for war work and to losses from submarines and storms, has seriously affected the trade of the colony. Matters were brought to a climax recently when the British Admiralty notified the Newfoundland Government that it would be necessary to reduce the tonnage supplied for the colony's needs to one third of what has been available during the last year.

It is planned to place under the jurisdiction of the new ministry all the steamships which ply in and out of the innumerable harbors along the Newfoundland coast. Under the system which has been devised a number of steamships will be withdrawn from this inter-port trade and utilized to carry freight between St. John's, Nfld., Halifax and Sydney, N.S. At the Nova Scotia points connection will be made with the Intercolonial Ry. This will do away with the necessity of sending steamships on the long voyage to U. S. ports to take the colony's exports to that country and to bring in the needed imports. It will also facilitate commerce with all parts of Canada. Other coastal steamships will be diverted to the European trade. Efforts will be made, however, to do away with the necessity of dispatching many vessels across the Atlantic by developing new markets in Canada, the U. S., the West Indies and South America for dried cod fish, which is the most important commodity exported.

**Vessel Construction in Great Britain.**—It was announced in the British House of Commons recently that 1,163,474 tons of shipping were built in Great Britain during 1917, and 170,000 tons were received there from abroad. It was also stated that the official estimate was not realized, as Great Britain had arranged to have a large tonnage built in the U.S., which, when the U.S. joined the Allies, she preferred to take over, and which was quite agreeable to Great Britain.

**Leonard Steam Trawlers Ltd.,** has been incorporated under the Dominion Companies Act, with \$250,000 authorized capital, and office at Montreal, to build, own and operate steam and other vessels, for fishing and general transportation purposes, and to own and operate wharves, docks and other transportation facilities.



## Steam and Sailing Ships Under Construction Throughout Canada.

Following are particulars of shipbuilding which was reported in progress Dec. 31st, 1917. The figures given in each case show the gross tonnage:—

### Steamships, Atlantic Coast.

Canadian Vickers, Ltd., Montreal, 2 cargo steamers, 9,400, steel; 1 dredge, 2,360, steel; 12 trawlers, 3,050, steel; 23 drifters, 3,450, wood.

Wm. Crowell, Port Latour, N.S.—1 gas boat, 22, wood.

Davie Shipbuilding & Repairing Co., Levis, Que.—1 car ferry, 5,000, steel.

Grant & Horne, St. John, N.B.—1 cargo steamer, 2,800, wood.

C. A. Ham, Mahone Bay, N.S.—1 gas boat, 25, wood.

D. S. McLaren, Cardigan, P.E.I.—1 gas boat, 40, wood.

Marine Construction Co. of Canada, Ltd., St. John, N.B.—1 aux. schr., 750, wood.

B. W. Melanson, Gilbert's Cove, N.S.—1 general purpose, 276, wood.

C. A. Nickerson, Wood's Harbor, N.S.—2 gas boats, 22, wood.

Nova Scotia Steel & Coal Co., Trenton, N.S.—2 cargo str., 3,000 steel.

Quebec Shipbuilding & Repairing Co., St. Laurent, Que.—2 cargo str., 2,600, wood.

Quinlan & Robertson, Quebec, Que.—1 cargo str., 2,700, wood.

Southern Salvage Co., Liverpool, N.S.—1 cargo str., 2,500, wood.

A. H. Stevens, Tancook, N.S.—1 gas boat, 27, wood.

Wedgeport Navigation & Transportation Co., Wedgeport, N.S.—1 general purpose str., 340, wood.

Total, Atlantic coast, 55 steamships of 38,662 gross tons.

### Steamships, Great Lakes.

Abitibi Power & Paper Co., Montreal—2 tugs (1 gas boat), 151, wood.

British-American Shipbuilding Co., Welland, Ont.—2 cargo str., 4,700, steel.

Collingwood Shipbuilding Co., Collingwood, Ont.—3 cargo str., 7,200, steel.

J. W. Gerow, Rosspoint, Ont.—1 fishing tug, 37, wood.

Great Lakes Dredging Co., Fort William, Ont.—1 cargo str., 1,700, wood.

Midland Shipbuilding Co., Midland, Ont.—3 cargo str., 6,000, steel.

Polson Iron Works, Toronto, Ont.—6 2,640, steel.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—6 cargo str., 12,091, steel; 6 trawlers, 1,530, steel.

Thor Iron Works, Toronto—1 cargo str., 2,437, steel; 2 trawlers, 540, steel.

Toronto Shipbuilding Co., Toronto—2 cargo str., 6,000, wood.

West, Beachy & Son, Simcoe, Ont.—1 tug, 18, wood.

Total, Great Lakes, 44 steamships of 63,853 gross tons.

### Steamships, Pacific Coast.

T. Atagi, Steveston, B.C.—1 gas boat, 32, wood.

Cameron-Genoa Mills Shipbuilders, Ltd., Victoria—4 cargo str., 6,500, wood; 1 auxiliary schr., 1,500, wood.

J. Coughlan & Sons, Vancouver—3 cargo str., 17,190, steel.

J. A. Croll, Port Alberni, B.C.—1 tug, 35, wood.

Foundation Co., Victoria—3 cargo str., 6,200, wood.

V. Hasegawa, Steveston—1 gas boat, 30, wood.

Wm. Lyall Shipbuilding Co., Vancouver—4 cargo str., 6,500, wood.

S. A. Moulton, Prince Rupert, B.C.—1 gas boat, 21, wood.

New Westminster Construction Co., New Westminster, B.C.—4 cargo str., 6,500, wood.

Pacific Construction Co., Port Coquitlam, B.C.—2 cargo str., 5,600, wood.

Walace Shipyards, Ltd., North Vancouver—4 cargo str., 17,500, steel; 2 frt. and pass. str., 11,000, steel; 1 auxiliary schr., 1,500, wood.

Western Canada Shipyards, Ltd., Vancouver—3 cargo str., 3,900, wood.

Total, Pacific coast, 35 steamships of 84,008 gross tons.

Wooden Sailing Schooners, Atlantic Coast

T. K. Bentley, Advocate Harbor, N.S.—1 schr., 511, wood.

Omer Blinn, Grosses Coques, N.S.—1 schr., 375, wood.

Chester Basin Shipbuilders, Chester Basin, N.S.—1 schr., 135, wood.

Clare Shipbuilding Co., Meteghan, N.S.—1 schr., 350, wood.

G. M. Cochrane, Fox River, N.S.—1 schr., 450, wood.

J. Z. Degagne, Eboulements, Que.—1 schr., 98, wood.

Dowling & Stoddart, Port Clyde, N.S.—1 schr., 175, wood.

Ernst Shipbuilding Co., Mahone Bay, N.S.—1 schr., 162, wood.

Falmouth Shipbuilding & Transportation Co., Windsor, N.S.—1 schr., 405, wood.

L. F. Graham, Port Greville, N.S.—1 schr., 360, wood.

W. R. Huntley, Parrsboro, N.S.—2 schrs., 650, wood.

S. St. C. Jones, Little Brook, N.S.—1 schr., 62, wood.

Maurice Leary, Dayspring, N.S.—1 schr., 136, wood.

Dr. McDonald, Meteghan, N.S.—1 schr., 544, wood.

W. C. McKay, Shelburne, N.S.—3 schrs., 480, wood.

W. K. McKean & Co., Liverpool, N.S.—1 schr., 400, wood.

Nova Scotia Shipbuilding & Transportation Co., Liverpool, N.S.—2 schrs., 875, wood.

J. N. Rafuse, Conquerall Bank, N.S.—1 schr., 400, wood.

Robar Bros., Dayspring, N.S.—1 schr., 140, wood.

Smith & Rhuland, Ehrenburg, N.S.—2 schrs., 225, wood.

Southern Salvage Co., Liverpool, N.S.—1 schr., 185, wood.

P. A. Theriault, Belliveau's Cove, N.S.—1 schr., 339, wood.

Wagstaff & Hatfield, Port Greville, N.S.—1 schr., 400, wood.

Yarmouth Shipbuilding Co., Yarmouth, N.S.—1 schr., 175, wood.

### Pacific Coast.

Clarence Hoard, Victoria, B.C.—1 barge, 607, wood.

Total, Atlantic and Pacific coast, 30 sailing schooners and barges, 9,199 gross tonnage.

The steamships Empress of Asia, Empress of Russia, Empress of Japan, and Monteagle, owned by Canadian Pacific Ocean Services, Ltd., and operated on the trans-Pacific service, have been transferred from the United Kingdom register, with home port at London, to the Canadian register, with home port at Vancouver, B.C., which name now appears on the sterns of the vessels, instead of London, as heretofore.

## Enquiry into Pilotage in the Maritime Provinces.

Following on the findings of the commission appointed to enquire into the causes which led to the collision of the steamships Imo and Mont Blanc in Halifax harbor, Dec. 6, and the subsequent explosion on board the latter vessel, the Minister of Marine decided that it was necessary to enquire into the pilotage system in force at maritime province ports, and for this purpose the following order in council was passed Feb. 1:—"The committee of the Privy Council have had before them a report dated Jan. 30, from the Minister of Marine and Fisheries, submitting that he has had under consideration the pilotage system in operation at the ports of Halifax, St. John and Sydney, with a view to taking, at the earliest possible date, such measures for its improvement as may be deemed advisable. The minister observes that to enable him to deal with this matter it is essential that all the material facts of each case should be before him. As the question at issue concerns the conduct of the public business of Canada in respect of shipping at the ports named, the minister is of opinion that the most satisfactory method of eliciting the requisite information on which to base official action is by taking evidence on oath as to the said pilotage system. The minister therefore recommends that under the provisions of part 1 of The Inquiries Act, R.S.C. 1906, chap. 104, Thos. Robb (Manager, Shipping Federation of Canada); Capt. J. N. Bales (Deputy Port Warden, Montreal), and Capt. J. W. Harrison (Marine Superintendent, Furness, Withy & Co., Halifax), be appointed commissioners to enquire into and report upon all matters connected with the pilotage system and its administration at the ports of Halifax, St. John and Sydney, and to recommend to the minister what changes, if any, seem desirable therein."

The first sitting of the commission was held at Halifax, N.S., Feb. 9, Thos. Robb being chairman, and the taking of evidence concluded Feb. 14. Announcement has been made that the commission has reported, recommending that the Halifax Pilotage Commission be abolished, and that pilotage there be placed under the Marine Department.

**Regulations for Chartering Vessels.**—An order in council has been passed providing that a person shall not, without written permission from the Minister of Marine, directly or indirectly, on his own behalf, or in conjunction with any other person, enter into any agreement, or negotiations with a view to an agreement for the charter, whether for time or voyage, of any ship which is not a British ship, or otherwise for the use of any such ship for the carriage of goods to or from any port in the Dominion. Contravention of this regulation, or, in the event of the Minister's permission being obtained, failure to comply with conditions, carry penalties of \$5,000 fine or five years imprisonment, or both fine and imprisonment. The regulation is in force from Feb. 13, to the end of the war.

The first reinforced concrete freight motor vessel built in Germany is reported to have complete its trial trip at Hamburg. It is said to be made of "a new kind of concrete, which only weighs half as much as gravel concrete."

Admiral Sir C. E. Kingsmill, Director of Naval Service for Canada, has been created a Grand Officer of the Order of the Crown of Italy.



# The Necessity for the Establishment of a Canadian Ocean Merchant Marine.

By J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd.

The establishment of an ocean merchant marine is the most important domestic question before Canada today, for the continued prosperity of the Dominion will depend very largely upon our ability to ship our products to the markets of the world. This we cannot do unless we have the ships, and it would seem that the only way we can be assured of them is to follow the example of the United States and build them ourselves.

The people of Canada must be awakened to the urgency of this problem, and to its vital bearing on the future prosperity and development of our country. The extraordinary business expansion of Canada in the past year or two has left us somewhat complacent perhaps as to the future. But we must remember that this expansion has been due wholly to our participation in the war on the side of the allies, and is not a normal development. In three years' time we have nation, and our foreign trade balance become a lending instead of a borrowing sheet has turned tremendously in our favor. This happy condition might not have been effected in peace times in 20 years.

But what about the future? It is all very well to be optimistic, but facts are facts, and we cannot overlook them. Personally, I have always been a firm believer in the importance of foreign trade to the prosperity of any country, and I am one of those who are firmly convinced that Canada can develop her export business to enormous proportions, but realize only too well that such development can be possible only if she has the ships to carry that business. Now suppose the war were to end with Canada having made no attempt to establish a merchant marine of her own? What would happen? There would be a demand for tonnage such as the world had never known. Freight rates might be tremendously high, and the markets offering the best returns would get the ships. Ocean transportation in normal times is based on carriage of cargo in both directions; that is to say, the owner wants assurance that if he carries a cargo in one direction he will be able to get a return charter at an accessible point, and not have to run thousands of miles in ballast. Now, Canada's freight is mostly of the bulk variety, the class carried in peace times by the tramp steamship. But an export trade in raw products never made any nation wealthy. We must supply transportation for our manufacturers. We have a certain tonnage now, but only through the grace of the Admiralty. This tonnage probably will not be available after the declaration of peace. Great Britain, through mines, submarines, and marine risks, is losing ships faster than she can build them, even with her yards working night and day to meet the demand. Out of a total tonnage of some 20,000,000, Great Britain has lost at least 5,000,000 tons through the agency of the submarine alone. This represents the result of only one year of submarine frightfulness, and will not take into account the losses in the first two and a half years of the war, when such mighty liners as the Lusitania and the Arabic were sunk. In making this statement, I am not attempting to predict what the net loss of British tonnage will be when the war is finally concluded, but merely wish to show how a depleted tonnage will affect Cana-

dian interests. Great Britain's foreign trade is world wide, and if she is to retain it she will have to bend every energy toward that end, and this in the face of the greatest competition the world has ever witnessed. In South America, for instance, where before the war Great Britain and Germany had a practical monopoly, the United States will be a sturdy competitor, for she has improved the past few years to splendid effect in that field. This will mean that to retain the trade of the southern half of this hemisphere, so important to her merchants, Great Britain will have to divert a large portion of her merchant fleet to South American waters. And the same conditions will apply also to other countries, especially those supplying the raw materials for British mills, such as the United States and Australia.

What, then, will be the position of Canada? There will be a certain tonnage to the St. Lawrence, of course, but will the available freight tonnage, especially that of the tramp character, to care for the mighty export business of the Dominion be forthcoming? For one, I do not think so.

That is why I think the Dominion Government has a profound duty to establish a merchant marine that will make the Canadian farmer and manufacturer independent to a degree at least of the foreign shipowner for the carriage of his products. This merchant marine, in my opinion, should be built in Canadian yards—for we have yards in Canada sufficiently equipped to build a considerable fleet. This would not only supply work to the existing yards, whose wonderful development in the past two years has been due almost wholly to Admiralty requirements, but would afford a new field of endeavor to the manufacturers of munitions, and continued employment to the thousands of skilled workers who have been very largely the product of that great war industry.

The vital need of the Canadian shipbuilding industry today is raw material. At present there are no steel mills in Canada for the manufacture of plates, channels, or angles, the reason being the total inability of the domestic steel industry to compete with its competitor. The Dominion Iron & Steel Co. did attempt to erect a plate mill at Sydney, but finding it absolutely impossible to make it a commercial success was compelled to sell it back to the U.S. The product of that particular mill is now being sold in Canada. The workmen who made the product, however are Pittsburgers, not Nova Scotians. How best a steel industry, to supplement the shipbuilding industry could be developed, I am not prepared to say, but any reasonable subvention would be justified. Perhaps the most effective method would be to order a certain amount of material, over a period of say 10 years, at a figure that would justify a fair profit on output and render the investment in such plants absolutely safe; meaning, in other words, that if a certain plant were not required after 10 years it could be dismantled without financial loss to its builders.

The upbuilding of a Canadian merchant marine is both a national and an imperial obligation, and it is one, in my opinion, that the government should waste no time to put into effect. This can best be done by the establishment of a

commission along the lines of the U. S. Shipping Board, which should be empowered to consider the merchant marine question in all its phases, to construct or purchase ships, and to do anything else that promised to rehabilitate the once important ocean marine of Canada. The ships constructed should be built on a programme that promised continuous activity to existing Canadian yards for at least 10 years, and the fleet established, whether by purchase or construction, should be capable of carrying at least 60% of the foreign trade requirements of the country, which is the percentage of British trade carried by British ships before the war.

Until the declaration of peace these ships should be operated under government control, when they should be sold to private interests at prices determined as equitable to all concerned. For public operation of ocean carriers has never proved practicable, and never will. The reasons for this are self evident. Successful ship operation lies pretty much with the personnel of the company operating. Private enterprise will always reward talent, and talent will go always where its services will be most recognized, except, of course, in times like the present, when many of the biggest men in the various countries at war are lending their services to the public at great personal sacrifice. But in ordinary times big brains cannot be tempted by the moderate salaries that are paid to government officials. And the government of no country can pay large salaries, as the people would not tolerate such a policy for an instant. Government operations of any character always deter private enterprise, as these operations can be carried on at a loss—another reason why the maritime nations have always preferred to encourage private enterprise by preference or subsidy instead of entering the field in their own behalf.

Why should the ships for the proposed Canadian merchant marine be built by the government, when the conditions for shipbuilding at present are so favorable will be, no doubt, a question that will occur to the layman who is uninformed as to the actual conditions. To understand the reason for this we must remember that the shipbuilder and the ship operator are entirely different people, just as distinct, in fact, as the builder of railway equipment and the operator of railways. The intrinsic value of a ship is not the value of the elements that have entered into her construction, but is governed wholly by the earnings she makes on the investment. These are abnormal times, and call for emergency measures. Thus ship construction at present high rates, even though the prevailing high freight rates might seem to justify it, is in a sense speculative. It is impossible to predict for how long the charges on ocean freight will remain high after the war, but it is self evident that even if there is not a sudden break in the market after the declaration of peace, there will be a gradual decline to pre-war levels, particularly if the struggle is prolonged to a date that will witness the consummation of the shipbuilding programme of the allied governments and of neutral nations, such, for instance, as Norway, which last year expended nearly \$200,000,000 in new tonnage and this year has an even more extensive programme.



Thus it is not fair to expect private builders to take such a great chance, especially considering the shortage of labor and material. Certainly, the Canadian owner is in no position to finance ships without some guarantee, as he has neither the money nor the established business to make such an undertaking feasible.

A Canadian merchant marine, built and operated with government assistance, while primarily serving Canada, would be free to trade in any part of the world, thus adding to the wealth of the Dominion by drawing upon the resources of other lands. This fleet would in addition, of course, increase the material prosperity of the country by finding ready and profitable markets for Canadian products and importing the raw materials needed by the manufacturing industries as well as the so-called luxuries that contribute so much to make life worth living. A merchant marine so developed would afford Canadian exporters a decided advantage in rates, as take the case of Japan, which besides retaining all its coastal privileges for the benefit of its own mercantile marine, is the second nation in the matter of marine subsidization. Even with present high rates, Japanese ports have a 50% preference over Hongkong, Shanghai and Manila. It is said, indeed, that because of national subsidization the merchants of Japan are enjoying pre-war rates, while the Philippine Islands and China are paying more than 100% over the old schedules.

Another vitally important reason for the establishment of a merchant marine, and one apart altogether from commercial or mercenary motives, is the creation of a trained organization upon which Canada can draw for the personnel of the navy which, soon or late, she is bound to possess. The most serious problem in creating a navy, or for that matter a merchant marine, is to furnish the necessary complement of officers and men. In this regard Great Britain has been particularly fortunate, but her good fortune can be attributed solely to an unswerving policy of interconnecting the two services. Thus in the present war we find that the fighting forces have had to draw very largely on the Naval Reserve of the mercantile fleets, and to the undying glory of the latter it can be said that they have acquitted themselves with the spirit and sacrifice that are the traditions of the service. But the creation of an organization in Canada will be more difficult than in Great Britain, where seafaring is the recognized avocation for families whose forbears have followed it for centuries. It has been the experience of every nation that the greatest difficulty in establishing a merchant marine is to make the life sufficiently attractive to induce the youth of the nation to follow it as a profession. Going to sea means giving up all the pleasures and comforts of home, and to offset the loss of these the boy must be promised compensating advantages. This condition is especially true of Canada, where the standard of living is very much higher than in any of the old world countries and where the social distinctions are less defined. Such a plan has been adopted on the Great Lakes, with the result that at present nearly all the officers are Canadian born, where only a few years ago the large majority were foreign.

Viewed from whatever angle possible, the importance of a merchant marine to the development of a nation cannot be overestimated. The war has shown that

no country can afford to depend on foreign carriers for the safety of its extraneous trade. Thousands of years of peace have proved beyond a doubt that the nations making the greatest development commercially have been those that have developed their mercantile interests. Cobden, the great English economist, once said: "I shall begin to have hopes for Turkey when I find Turkish ships, built in Turkish dockyards, manned by Turkish seamen, navigated by Turkish officers, and laden with Turkish cargoes, sailing out of Turkish ports." In these days we do not like to point to Germany as an example for anything. But no thinking person can overlook Germany's wonderful record of commercial growth in the 25 years before the war. In 1890 three-fifths of all Germany's mercantile tonnage was built in Great Britain. Ten years later, through a far-sighted policy of benevolent consideration, the German yards were constructing all the tonnage required by German owners and catering to foreign business as well. In the same decade, too, British shipping through the Suez Canal decreased from 90,000,000 to 7,000,000 tons, while that of Germany grew from 1,500,000 to at least 2,000,000 tons.

Before the war it was generally recognized that sea power would be the chief contributing factor to victory. That is why both Britain and Germany were working so feverishly on their naval equipment. But it was from the fighting ships that victory was expected, not the humble merchantman. And yet it is the peaceful cargo carrier that is playing the supreme part in the struggle, giving all due credit to the magnificent fighting ships that on constant vigil are holding the enemy at bay. In the war after the war, so called, the merchantman again will have to lead the van, and in my opinion the only countries that will have an even chance will be those who have the ships to send out on the trade routes of the world.

The establishment of a Canadian ocean merchant marine is a national opportunity and a national obligation.—Canadian Magazine.

The North Atlantic Conference, an association of steamship lines operating across the North Atlantic, is reported to have been revived, with the objectionable elements omitted. Mention has been made in a previous issue of the causes which led to the break up of the old association, and the part played by the C.P.R. in uncovering the German methods, whereby the German lines running to New York practically controlled the situation. It is announced that the new association includes all the principal British, Canadian, United States, French and Italian companies, which have united for trade purposes in the North Atlantic.

Tonnage Losses During the War.—In order to counteract the exaggerated statements attributed to the enemy as to the tonnage destroyed during war operations, the British Government has authorized the announcement that the total net loss of the world's ocean going tonnage, since the outbreak of war, including the losses from ordinary marine risks, as well as by enemy action, and allowing for enemy tonnage captured, is somewhat less than 3,000,000 tons, or approximately 9% of the tonnage available immediately prior to the war. The enemy claims to have destroyed 9,000,000 tons of allied and neutral shipping, against which it states that only 4,000,000 have been built.

## Changes in Cunard, Anchor and Donaldson Steamships Representation.

Prior to Jan. 1 last the Robt. Reford Co., Ltd., general agents, Montreal, with offices also at Halifax, N.S., St. John, N. B., Quebec and Toronto, had charge of the Cunard Line Canadian services, in territory in Canada east of Port Arthur; and also had charge of the Anchor Line (New York-Glasgow service) in the same territory, as well as supervising the Anchor-Donaldson Line business in Canada from the Atlantic to the Pacific. A separate office for the Anchor-Donaldson Line was maintained in Winnipeg, with H. E. Lidman as General Agent in charge. He also had an office for the Anchor-Donaldson Line in Vancouver, with C. A. Whitelock in charge. Mr. Lidman has resigned. The Cunard Line Canadian services, in the territory, Port Arthur and west to British Columbia in Canada, was handled through the Cunard Steamship Co.'s office in Winnipeg.

Under new arrangements which have been made the Robt. Reford Co. has been given charge of the Cunard Line Canadian services and the Anchor-Donaldson Line from the Atlantic to the Pacific in Canada and of the Anchor Line in Canada east of Port Arthur.

At Winnipeg the Cunard, Anchor-Donaldson and Anchor Lines business will be handled in the present office of the Cunard and Anchor Lines, D. W. Thomas being the manager in charge of the allied lines.

At Vancouver a joint office will be maintained for the Cunard, Anchor and Anchor-Donaldson Lines. A. B. Swezey, who was formerly connected with the Cunard Co. in New York, has been appointed manager of the joint office; and C. A. Whitelock, formerly connected with the Anchor-Donaldson Line at Vancouver, being appointed assistant manager.

The Winnipeg and Vancouver offices are maintained by the Cunard, Anchor, and Anchor-Donaldson Lines and are under the New York office's jurisdiction, where all staff appointments receive approval. The Winnipeg and Vancouver offices represent both the Cunard Canadian services, and the Cunard United States services. While the Robert Reford Co. has no direct control over the staffs at Winnipeg and Vancouver, these offices report to it in regard to the Canadian services.

U. S. Great Lakes Vessels for Ocean Service.—A Washington, D.C., press dispatch states that since last summer the U. S. Shipping Board has taken out from the Great Lakes to the ocean, 48 steamships, aggregating 150,000 tons, and that an additional 30 will be taken out on the reopening of navigation. Of the vessels taken out, 4 have met with disaster, the Codorus and G. N. Orr being driven ashore, where they still lie, the Saranac grounding in the gale which swept Halifax, N.S., after the disastrous explosion of a munitions vessel there, and the Tuscarora lost in another gale. A contract for salving the Saranac has been let. Twenty-one of these vessels had been in service on the lakes for some years and 27 were new vessels requisitioned from the yards. Of the older vessels, 16 had to be cut in two for the passage of the Welland Canal, but only one of the newer ones had to be divided. Of the 30 vessels still to be taken out, practically all of them will have to be cut, and this work is stated to be proceeding now, in order to be ready for the trip when the canal opens.



# Ships Under Construction in Canada for British Government.

**Steamships Ordered in Canada.**—Canadian Railway and Marine World for Aug., 1917, gave particulars of orders placed up to July, 1917, by the Imperial Munitions Board at Ottawa, for the British Government. The accompanying tables contain a complete list of all orders placed to date, viz., 41 steel steamships, total tonnage 202,500; and 46 wooden steamships, total tonnage 128,800, a grand total of 87 steamships with a grand total tonnage of 331,300.

## Steel Steamships Ordered for British Government.

Contractor.	No. of ships.	Individual tonnage, d.w.	Total tonnage, d.w.
British American Shipbuilding Co., Welland, Ont. ....	3	3,500	10,500
Canadian General Electric Co., Toronto, Ont. ....	4	3,500	14,000
Canadian Vickers, Ltd., Montreal, Que. ....	4	7,000	28,000
Collingwood Shipbuilding Co., Collingwood, Ont. ....	2	2,900	5,800
J. Coughlan & Sons, Vancouver, B.C. ....	9	8,800	79,200
Midland Dry Dock Co., Midland, Ont. ....	3	3,400	10,200
Nova Scotia Steel & Coal Co., New Glasgow, N.S. ....	1	1,800	
	1	2,400	4,200
Polson Iron Works, Ltd., Toronto, Ont. ....	6	3,500	21,000
Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	6	3,400	20,400
Wallace Shipyards, Ltd., North Vancouver, B.C. ....	2	4,600	9,200
Total . . . . .	41		202,500

## Wooden Steamships Ordered for British Government.

Contractor.	No. of ships.	Individual tonnage, d.w.	Total tonnage, d.w.
Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. ....	4	2,800	11,200
Foundation Co., Ltd., Victoria, B.C. ....	5	2,800	14,000
Fraser, Brace & Co., Ltd., Montreal . . . . .	4	2,800	11,200
Grant & Horne, St. John, N.B. ....	2	2,800	5,600
Great Lakes Dredging Co., Port Arthur, Ont. ....	2	2,800	5,600
T. M. Kirkwood, Toronto, Ont. (1) . . . . .	2	2,800	5,600
Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	6	2,800	16,800
New Westminster Construction & Engineering Co., New Westminster, B.C. ....	4	2,800	11,200
Pacific Construction Co., Port Coquitlam, B.C. ....	2	2,800	5,600
Quebec Shipbuilding & Repair Co., Montreal, Que. ....	2	2,800	5,600
Quinlan & Robertson, Ltd., Montreal, Que. ....	4	2,800	11,200
Southern Salvage Co., Liverpool, N.S. ....	1	2,800	2,800
Toronto Shipbuilding Co., Toronto, Ont. ....	2	2,800	5,600
Western Canada Shipyards, Ltd., Vancouver, B.C. ....	6	2,800	16,800
Total . . . . .	46		128,800

(1) The 2 vessels ordered from T. M. Kirkwood are being built by the Three Rivers Shipyards, Ltd.

### SUMMARY.

	No.	Total tonnage
Steel Steamships . . . . .	41	202,500
Wooden Steamships . . . . .	46	128,800
Grand Total . . . . .	87	331,300

In addition to the 41 steel steamships mentioned above, two others, which were under construction for private owners, were bought by the board, making a total of steel steamships of 211,300 tons, the cost of the 43 being approximately \$40,000,000. The cost of the 46 wooden steamships, total tonnage 128,000, is approximately \$24,500,000. The total cost for the 89 steel and wooden steamships, with a tonnage of 340,100, is approximately \$64,600,000.

The value of the contracts let in the different provinces is as follows: Nova Scotia, \$1,340,000; New Brunswick, \$1,000,000; Quebec, \$11,600,000; Ontario, \$19,240,000; British Columbia, \$31,434,-

000. The contracts by provinces are as follows:

Nova Scotia, 2 steel steamships, 1,800 and 2,400 tons; cost, \$840,000; one wooden steamship, \$500,000.

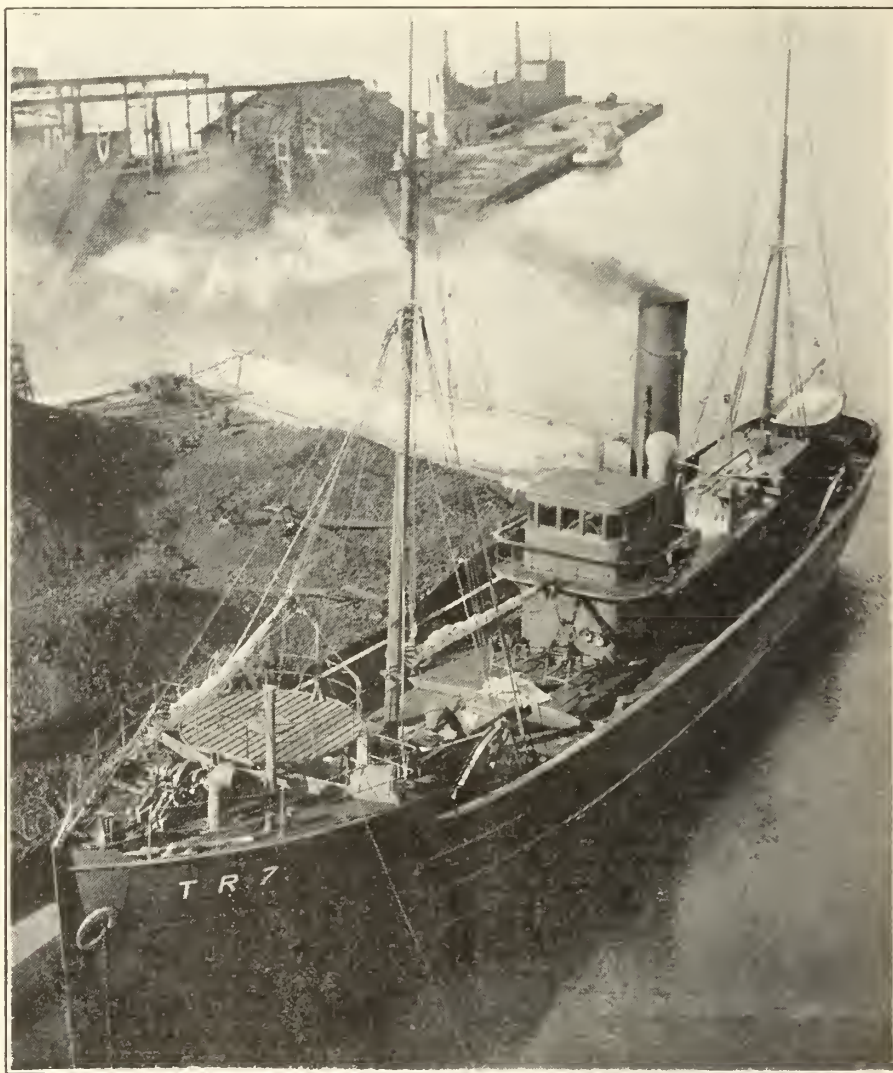
New Brunswick, 2 wooden steamships, each 2,800 tons, cost \$1,000,000.

Quebec, 4 steel steamships, 7,000 tons each, cost \$5,600,000; 12 wooden steamships, 2,800 tons each, cost \$6,000,000.

Ontario, 25 steel steamships, 2 of 2,900 tons each, 9 of 3,400 tons each, 13 of

The wooden shipbuilding yards are principally new, but a few have been enlarged from their former capacity. It is said that about 25,000 men are employed on the board's orders.

The tremendous increase in shipbuilding in Canada caused by the board's orders for 340,100 tons may be seen by the following figures for previous years. In 1874, when wooden ship construction was at its height, 190,756 tons were built; but subsequently there was much less activ-



Trawler T.R. 7, built for Canadian Naval Service Department.

3,500 tons each, and 1 of 4,300 tons, total 86,200 tons, cost \$17,240,000; 4 wooden steamships, 2,800 tons each, cost \$2,000,000.

British Columbia, 1 steel steamship, 4,500 tons, cost \$905,651; 2 of 4,600 tons each, cost \$1,679,000; and 9 of 3,800 tons each, cost \$14,750,000; 27 wooden steamships, 2,800 tons each, cost \$14,100,000.

Four steel steamships of 1,800 tons, 3,400 tons, 4,200 tons and 4,500 tons respectively, a total of 13,900 tons, have been completed. Four wooden steamships of 2,800 tons each have been launched and several others are about ready for launching.

New steel shipbuilding plants have been established during the past 12 months at Toronto and Welland, Ont., and Vancouver, B.C., and a number of existing plants have been considerably enlarged.

ity until the war years. In 1880 the tonnage built was 65,441; in 1885, 41,179; in 1890, 52,378; in 1895, 16,270; in 1900, 22,326; in 1905 19,781; in 1910, 22,283; and in 1914, 43,346.

**Additional Wooden Steamships for British Government.**—Vancouver and Victoria papers stated early in February that the British Government had placed contracts direct for building 40 wooden steamships in British Columbia, with an aggregate tonnage of 140,000, that 20 of them would be built by the British-American Shipbuilding & Engineering Co., Ltd., of Vancouver, in which J. A. Sears is principally interested; that this company, which has been incorporated recently, had leased a site on the old Kitsilano Indian Reserve, and that the other 20 would be built in Victoria by a company headed by J. H. Price, President, Cameron-Genoa



Mills Shipbuilders, Ltd., the proposed name for incorporation being the Victoria Shipbuilding Co., Ltd. The papers referred to also stated that Capt. D. L. Jones was sent to British Columbia in July, 1917, by London, Eng., officials, to investigate the shipbuilding facilities, and that he reported the result of his enquiries to the Ministry of Shipping, of which Sir Jos. Maclay is the head, that he then made a second trip to Canada, and that the orders had been placed as a result of his investigations. One of the papers which published the story said Mr. Sears stated "he had no information personally regarding the contracts for the wooden vessels." We have been unable to obtain any verification of these reports and from the best information available, we are inclined to think it is unlikely that the British Government will place any further orders for wooden steamships, but that there are possibilities of orders being allowed to be taken for allied or neutral governments.

ago, but were suspended owing to the elections, have been resumed by a Winnipeg syndicate, for a site on Industrial Island, in Vancouver harbor, for a shipbuilding plant. The property is under the Vancouver Harbor Commission's control, and, it is said, that the Dominion Government's consent must be obtained before a lease can be granted. It is also reported from Winnipeg that E. F. Hutchings, President, Great West Saddlery Co., is at the head of a syndicate which has secured a tentative contract from the Imperial Munitions Board for the construction of 12 vessels on the Pacific coast, that negotiations are proceeding for the acquirement of a site at some point along the B. C. coast, and if a good location can be secured a plant will be established for the construction of steel and wooden vessels. In any case, it is stated, the company's headquarters will be in Vancouver. Vancouver reports on this statement say that the syndicate is endeavoring to lease 11 acres altogether, but at present

erable progress has been made with the second slip alongside the present one. A sister ship of the s.s. War Dog, now in service, is expected to be launched in March, and a keel for a similar vessel laid in her place. The name stated to have been chosen for the new vessel is War Power.

James Cant, late of the Caledon Shipbuilding, Dundee, Scotland, is reported to have been appointed Superintendent, Wallace Shipyards.

Western Canada Shipyards, Ltd., Vancouver, B.C.—The hull of the s.s. War Nootka, the launching of which was mentioned in our last issue, had the finishing touches put to her, while moored to the company's wharf, and towards the end of February was taken to the Ogden Point assembling sheds at Victoria, to have her machinery installed.

### Atlantic and Pacific Ocean Marine.

The Eastern Steamship Corporation's s.s. Governor Cobb, which replaced the s.s. North Land on the Boston-Yarmouth route recently, is performing a semi-weekly service between these points.

The Canadian Pacific Ocean Services s.s. Montreal was reported to have been sunk in a collision along the British coast, Jan. 30. She was built at Newcastle, Eng., in 1909, was 8,644 tons gross, and had been engaged in war service for some time.

The Allan Line steamship service between Glasgow, Scotland, and Boston, Mass., which has been in operation for about 25 years, has been discontinued, and employees at Boston, it is reported, have been dispensed with. The Allan Line is now a part of Canadian Pacific Ocean Services, Ltd.

The Great Northern Pacific Steamship Co. has had its authorized capital stock reduced from \$5,000,000 to \$325,000 consequent on the purchase of its two steamships Great Northern and Northern Pacific, by the U. S. Government. It is reported that \$4,244,617.55 was paid for them, in addition to \$9,348, the cost of delivering the vessels at the Government's naval station at Puget Sound.

A St. John's, Nfld., press dispatch states that about 15 sailing vessels carrying Newfoundland fish, are being held at Gibraltar, owing to the British Admiralty's policy of not allowing any sailing vessels to enter the danger zone in the Mediterranean. It is said that the vessels have on board about one tenth of the season's catch of cod, valued at over \$2,000,000, consigned to Italian and Greek ports.

The s.s. Perciesien is reported to have been sunk and her crew landed at Liverpool, Eng., about Feb. 16. She was owned by the Gaspé & Baie des Chaleurs Steam-Glasgow, Scotland, in 1892, and has borne ship Co., Quebec, Que., and was built at the names of Canada and Pro Patria. Her dimensions were: length 185.5 ft., breadth 27.2 ft., depth 19.5 ft.; tonnage 782 gross, 502 register. She sailed from Halifax, N.S., Jan. 31, and for some years was operated between Montreal and Gulf ports, having latterly been placed on overseas service. Details as to the cause of the sinking have not been received, but it is stated that it is certain that she was not torpedoed.

The s.s. Aurora, which sailed from Newcastle, New South Wales, in June, 1917, with coal for Iquique, Chili, has not been heard of since leaving Sydney, June 20, where she had been compelled to put in in a leaking condition, and she has been given up as lost. She was formerly own-



Drifter C.D. 68, built at a St. Lawrence River port for Canadian Naval Service Department.

The British-American Shipbuilding & Engineering Co., Ltd., Vancouver, which has been incorporated recently, is reported to be negotiating for the lease of a shipbuilding site on the old Kitsilano Reserve at Vancouver. This company is stated in B. C. to have contracts from the British Government for the construction of about 20 wooden steamships, but this has not been confirmed. See also Victoria Shipbuilding Co.

Cameron-Genoa Mills Shipbuilders Ltd., Victoria, B.C.—The first of the four wooden steamship hulls built for the Imperial Munitions Board, and launched in January, is having her machinery installed at the board's assembly plant at Ogden Point. This is the vessel which was mentioned in our last issue as likely to be named War Tyee, but which is now stated to have been named War Yukon.

Foundation Co., Victoria, B.C.—Satisfactory progress is reported on the second of the Imperial Munitions Board's wooden hulls at this yard. Launch is expected early in March.

Wm Lyall Shipbuilding Co., Ltd., Vancouver, B.C.—The launching of the second wooden hull for the Imperial Munitions Board was expected to take place toward the end of February, and it was reported that the vessel would be named War Puget.

Vancouver.—It is reported that negotiations which commenced several months

desires to secure 4 acres on Industrial Island, where vessels would be launched to the eastward.

Victoria Assembling Plant.—W. Luney, of Luney Bros., contractors, Victoria, B.C., is reported to have been appointed Superintendent of the Imperial Munitions Board's assembling plant at Ogden Point there, vice H. A. Bayfield, deceased.

The Victoria Shipbuilding Co., Ltd., is given as the name of a company in course of organization, with J. H. Price, President, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C., chiefly interested. The company is said to have practically completed arrangements for the construction of about 20 wooden steamships for the British Government, and it is stated that plans and specifications have been prepared by Mr. Price and submitted to the British Government for approval, and that confirmation of the contract was expected by cable almost immediately. It would appear from these reports, which lack confirmation, that any negotiations which may have taken place have been direct with the British Shipping Controller in London, Eng., and not with the Imperial Munitions Board at Ottawa, which is dealing with the shipbuilding situation generally in the Dominion. See also British-American Shipbuilding & Engineering Co.

Wallace Shipyards, Ltd., North Vancouver, B.C.—It is reported that consid-



ed by Bowring Bros., St. John's, Nfld., and was built at Dundee, Scotland, in 1876, for the sealing trade. She was utilized in 1882 as a relief vessel for the Greeley Arctic expedition, and was used for Antarctic exploration purposes in 1911-14. In 1914 she was acquired by Sir Ernest Shackleton for further Antarctic work, which was completed in Feb. 1917. She was then sold to Grace Bros. & Co., London, Eng., and later transferred to the New York & Pacific Steamship Co., London, Eng., for the coal trade in the Southern Pacific.

### Maritime Provinces and Newfoundland.

The Newfoundland Government has appointed a Shipping Board under the supervision of Hon. J. C. Crosbie, to supplement the work of the Tonnage Committee in providing shipping facilities.

The s.s. Acadien, formerly Senlac, bound from Louisburg, N.S., for St. Pierre, Miquelon, was reported, Feb. 22, to have been wrecked on the Newfoundland coast, and her crew of 10 men lost. Later reports state that she was refloated and towed to a Newfoundland port, Feb. 23, but no statement was made as to her crew, or condition. She was built at St. John, N.B., in 1904, and was screw driven, by engine of 66 n.h.p. Her dimensions were: length 182 ft., breadth 33 ft., depth 16.1 ft.; tonnage, 1,011 gross, 615 register.

The Eastern Steamship Corporation's s.s. North Land, while en route from Boston, Mass., to Yarmouth, N.S., recently, struck on Signal Rock, denting several plates and loosening rivets on the port side. The accident is stated to be due to the breaking loose of a bell buoy which drifted to the west of its correct position.

The Harbor Grace Railway Dock Co. held its annual meeting at St. John's, Nfld., Feb. 6. The report showed that considerable work had been done during the year, but owing to the high cost of fuel, labor, etc., the surplus revenue only permitted the payment of a dividend of 5%. The directors were re-elected, with the addition of Hon. F. McNamara and Hon. W. J. Ellis.

The Grand Lake Steamship Co.'s s.s. May Queen was practically destroyed by fire at Cushing's mill, St. John, N.B., Feb. 5. She was built at Carleton, N.B., in 1869 and was paddle driven by engine of 60 n.h.p. Her dimensions were, length 169 ft., breadth 24 ft. 7 in., depth 8 ft. 4 in.; tonnage, 539 gross, 340 register. She was owned formerly by the May Queen Steamship Co., and was purchased by the Grand Lake Steamship Co. in 1914, and operated on Grand Lake until July, 1917, and since then on the St. John-Fredericton route. She was practically rebuilt, and her machinery overhauled, in 1907, and carried about 500 passengers, with large freight capacity. She was valued at about \$90,000, and was insured for about \$25,000.

The Red Cross Line s.s. Florizel, en route from St. John's, Nfld., to New York, ran on the ledges near Cape Race, during a blizzard, Feb. 24, and became a total wreck. There were reported to be 140 persons on board, 78 of whom were passengers, about 100 being reported lost. Among the passengers were J. S. Munn, Managing Director, Bowring Bros., St. John's, agents of the vessel company, with his young daughter. The owning company is the New York, Newfoundland & Halifax Steamship Co. The Florizel was 1,980 tons and was specially built in 1909

for heavy work in ice, she having been utilized for sealing voyages. Her sister ship, Stephano, was torpedoed and sunk during the visit of German submarines to the U. S. coast some time ago.

### Ontario and the Great Lakes.

The Algoma Central Steamship Line's s.s. W. C. Franz is being overhauled at Midland by the Midland Shipbuilding Co.

The Bassett Steamship Co.'s s.s. Mariska is being thoroughly overhauled at Midland by the Midland Shipbuilding Co. A steel deck house is being fitted, and the forecabin is being remodelled.

The C.P.R. s.s. Athabasca, which received some damage in the late autumn, through ice, is having about 20 plates in the bow replaced at Midland by the Midland Shipbuilding Co.

The City of Toronto is applying to the Ontario Legislature for power to invest its sinking fund in securities issued by the Toronto Harbor Commissioners, to the amount of \$1,725,000.

The Great Lakes Transportation Co.'s s.s. Glenlyon is being overhauled and remodelled at Midland by the Midland Shipbuilding Co. A steel deck house is being built forward, with accommodation for the master and mate. A new steel deck house is also being built aft, and a number of minor repairs are being made in the hull.

The Ogdensburg Coal & Towing Co., with head office at Ogdensburg, N.Y., and which has had a Montreal branch for years, was incorporated under New York laws in 1880, Jno. Hannan, Sr., being President. He died in April, 1916, and was succeeded by his son, Jno. Hannan, Jr., Thos. Pratt being Vice-President and R. E. Hannan Secretary and Treasurer.

The United States Lake Survey reports the levels of the Great Lakes for January, in feet above mean sea level, as follows:—Superior, 601.93; Michigan and Huron, 580.76; St. Clair, 574.04; Erie, 571.91; Ontario, 246.07. Compared with the average January levels for the past ten years, Superior was 0.08 ft. below; Michigan and Huron, 0.94 ft. above; Erie, 0.28 ft. above, and Ontario, 0.72 ft. above.

The Collingwood Steamship Co., Ltd., held its annual meeting at Collingwood, Feb. 13, when the report for 1917 was adopted. It was announced that Capt. G. C. Coles, Managing Director, is arranging for the purchase of another steamship of a larger capacity and greater speed than the City of Meaford, to cope with the company's business. The officers for this year are: A. H. Johnson, President; W. G. Smart, Vice President; Capt. G. C. Coles, Managing Director and Secretary; G. T. Foulis, Assistant Manager; J. F. Zimmerman, Treasurer.

### British Columbia and Pacific Coast.

The Dominion Public Works Department has bought the small steam tug Dorothy Symons, registered at Vancouver, and has changed its name to Nakusp.

The Union Steamship Co. is reported to have purchased the auxiliary steam powered schooner Washington from Seattle interests, for use in the summer trade.

The C.P.R. British Columbia Coast Service has issued its summer schedule for the Alaska route, showing a weekly service from June 7 to Sept. 30, with the steamships Princess Alice and Princess Sophia, the latter opening and the former closing the service.

The negotiations between the Grand

Trunk Pacific Coast Steamship Co. and the Independent Steamship Co., San Francisco, Cal., for the acquirement of the latter's s.s. F. A. Kilburn, are reported to have been called off, owing, it is said, to the vessel's machinery being defective.

An Ottawa press dispatch stated early in February that it was reported on good authority that the Fish Committee of the Food Controller's Department had recommended that the Dominion Government take over the fishing trawlers operating off the Pacific coast and carry on the fishing business there as a national enterprise.

An order in council has fixed the harbor head line of Victoria, beyond which, wharves, breakwaters, piers and other similar structures are not permitted to be built, according to plans deposited with the Public Works Department, Ottawa, and the Department's District Engineer at Victoria. This order amends previous orders on the same matter.

The Seattle Dry Dock & Construction Co., of Seattle, Wash., has been awarded \$87,000 for rent and breach of contract to insure, in connection with the capsizing of a floating dry dock leased to Grant, Smith & MacDennell, Ltd., contractors for the construction of the breakwaters at Victoria, B.C. The case has been before the courts since the early part of 1915, and the original claim was for \$250,000.

The Marine Department has issued a notice respecting the lighting, etc., of the Canadian Northern Ry. bridge across Selkirk Water to the Songhees Reserve, Victoria, B.C. The bridge consists of two approaches with a bascule span between. The bascule span is of the roller type, having a steel girder leaf with a concrete rest pier on each side of the opening, with a clearance of 77 ft. between piers, the bottom girder being 7 ft. above high water. A fixed white light on each side of the opening, 6 ft. above high water, marks the channel, but as the bridge is not being used at present, the bascule will be kept raised until trains are operated across.

The Union Steamship Co. of New Zealand, operating the Canadian-Australian Mail Line, is said to be negotiating with the Dominion Government for the use of the new government docks at Victoria, owing to the, it is alleged, unsatisfactory wharfage accommodation at times, in the inner harbor. One of the piers mentioned is occupied by the shed for equipping wooden steamships being built for the Imperial Munitions Board, with machinery, so that accommodation cannot be given there, but a local statement says that there is nothing to hinder the use of pier 3 for vessels calling at Victoria, if the Government would authorize the immediate construction of the proposed shed there.

It is reported that some trouble is expected in connection with the Kitsilano Bridge across False Creek, Vancouver, it being claimed that it is a hindrance to navigation. The bridge is owned by the C.P.R. and leased to the British Columbia Electric Ry. The Vancouver Harbor Commission has notified the companies that the span across the fair way will have to be removed in order that the s.s. Alaska, just about completed, can pass from the builders' yards to the sea. Taking into account the number of vessels under construction, and to be built at these yards, the removal and replacing of the span each time a vessel may require to pass would cost a large sum. The C.P.R. is said to have claimed that the bridge is there rightly and properly, and desires to know who is to pay the cost.



## Cargo Steamship Building for Dominion Government.

Canadian Railway and Marine World for February contained full particulars of the Minister of Marine's shipbuilding programme, which is already being put in effect, contracts for three vessels having been given and more being under consideration. Following are particulars of the contracts:

Canadian Vickers, Limited, Montreal, one steel cargo steamship:—

Length between perpendiculars .....320 ft.  
Breadth moulded .....44 ft.  
Depth moulded .....25 ft.  
Draft loaded .....21 ft. 2 in.  
Dead weight carrying capacity, .....4,300 tons  
Sea speed loaded .....11 knots

Single deck, poop bridge and forecastle; straight stem; elliptical stern; 5 water tight bulkheads; single screw; triple expansion engines; 2 Scotch boilers, 180 lb. working pressure; forced draft.

Canadian Vickers, Ltd., Montreal, one steel cargo steamship:—

Length between perpendiculars .....400 ft.  
Breadth moulded .....43½ ft.  
Depth moulded .....31 ft.  
Draft loaded .....25 ft. 1 in.  
Dead weight carrying capacity, .....8,100 tons  
Sea speed loaded .....11 knots

Two decks, poop bridge and forecastle; straight stem; elliptical stern; 5 water tight bulkheads; single screw; triple expansion engines; 3 Scotch boilers, 180 lb. working pressure, forced draft.

Collingwood Shipbuilding Co., Collingwood, Ont., one steel cargo steamship:—

Length between perpendiculars .....251 ft.  
Breadth moulded .....43½ ft.  
Depth moulded .....26 ft.  
Draft loaded .....22 ft. 2½ in.  
Dead weight carrying capacity .....3,750 tons  
Sea speed loaded .....9 knots

Single deck, poop bridge and forecastle; straight stem; elliptical stern; 4 water tight bulkheads; single screw; triple expansion engines; 2 Scotch boilers, 180 lb. working pressure; forced draft.

Wallace Shipyards, Ltd., North Vancouver, B.C., was stated by British Columbia papers, early in February, to have received a contract for 4 steel cargo steamships. This was not correct; in fact, up to the time of writing (Feb. 18), no order had been given this company, but negotiations were in progress and we were advised that it was probable they would be successful. The vessels under consideration are as follows:—

Length between perpendiculars .....331 ft.  
Breadth moulded .....46½ ft.  
Depth moulded .....25½ ft.  
Draft loaded .....21 ft. 8 in.  
Dead weight carrying capacity .....5,100 tons  
Sea speed loaded .....11½ knots

Single deck, poop bridge and forecastle; straight stem; elliptical stern; 5 water tight bulkheads; single screw; triple expansion engines; 3 Scotch boilers, 180 lb. working pressure; forced draft.

Wallace Shipyards, Ltd., advised Canadian Railway and Marine World, Feb. 23, that it had secured an order from the Dominion Government for the 4 steamships specified above.

The plans and specifications for all the vessels have been prepared by Charles Duguid, Naval Architect, Marine Department. Alex. Johnston, Deputy Minister of Marine, and Mr. Duguid visited Washington recently, and made arrangements for a supply of sufficient steel plates and shapes for a year's work on these cargo vessels.

Other orders for cargo steamships will be placed as fast as possible, in connection with which the Marine Department has obtained the following information as to what berths will be available in the

different shipyards on the completion of the Imperial Munition Board's and other orders.

British American Shipbuilding Co., Welland, Ont., 1 berth in May, 1 in July, 1 in Sept. and 1 in Nov., 1918.

Canadian Allis-Chalmers, Ltd., Bridgeburg, Ont., expect to be able to start work on 6 steamships before June, 1919.

Canadian Vickers, Ltd., Montreal, will have the following berths vacant for 8,100 tons steamships: 2 in May, 1 in Aug., 1 in Sept., 1918.

Collingwood Shipbuilding Co., Collingwood, Ont.: 1 berth in April and 1 in May, 1918, for 3,750 ton steamships.

J. Coughlan & Sons, Vancouver, B.C., no berths available during 1918.

Davie Shipbuilding & Repairing Co., Lauzon, Que., will probably be able to start on two 5,000 ton steamships this year.

Midland Shipbuilding Co., Ltd., Midland, Ont., 1 berth in Oct. and 1 in Nov., 1918.

Polson Iron Works, Ltd., Toronto, 4 berths in Oct., 1918, for 3,750 ton steamships.

Port Arthur Shipbuilding Co., Port Arthur, Ont., 2 berths in July for 3,750 ton steamships.

Tidewater Shipbuilders, Ltd., Three Rivers, Que., a new plant, will be willing to undertake 4,350 tons.

Wallace Shipyards, Ltd., North Vancouver, B.C., will have 1 berth in April, 1918, for a 4,300 ton steamship; one in June, 1918, for a 5,000 ton steamship, and 2 more berths before June, 1919.

The Ogdensburg Coal & Towing Co. is reported to have been acquired by a Canadian syndicate, with the object of dividing the company into two separate corporations, one with \$200,000 capital to carry on the business at Ogdensburg, N. Y., and the other with \$1,000,000 capital to operate from Montreal. It is stated that arrangements have been made to supply coal to Canada Steamship Lines' vessels, and that W. L. McDougall, Montreal, will be President and General Manager of the company. Canadian Railway and Marine World for February contained notice that the Ogdensburg Coal & Towing Co., Ltd., had been incorporated under the Dominion Companies Act with \$1,500,000 capital and office at Montreal.

The Montreal, Ottawa & Georgian Bay Canal Co. is applying to the Dominion Parliament to repeal sec. 5, chap 128, statutes of 1906, which provides the terms and conditions upon which the Dominion Government may acquire possession of the company's works, property and privileges, and to substitute the original provisions enacted for that purpose in the act of incorporation, viz., in sec. 43, chap. 103, statutes of 1894; and also to amend sec. 7, chap. 103, statutes of 1894, to provide that the amount of stock to be subscribed prior to the calling of the first general meeting of the company, shall be 5% instead of 20%. J. A. Ritchie, Ottawa is solicitor for the company.

Tide levels and datum planes in Eastern Canada, from determinations by the Naval Service Department's tidal and current survey, up to 1917, have been issued in booklet form.

"A ship isn't so dependent on her anchor." "Why isn't she?" "Because even if she loses it, she still keeps her hold."—Baltimore American.

## Ship Claimed to be Unsinkable.

New York press dispatches state that W. L. Saunders, Chairman, U. S. Naval Consulting Board, in a public speech there recently, stated that the U. S. Government had equipped its first military transport with a system of air and watertight cells, making it almost impossible to sink it with torpedoes; that the vessel is the former Austrian s.s. Lucia, now remodelled and renamed; that the hull is honeycombed with 12,000 cells or boxes, and that in the event of a torpedo attack, she would not sink, but would have the buoyancy of a lumber-laden, waterlogged schooner. He stated that the bulkhead system of protection for ships had failed in this war. The cells which have been applied to the Lucia are inserted inside the skin of the ship below the water line and are bolted to the frame work. Each unit is claimed to be absolutely air and water tight, and the floating capacity is said to be sufficient to keep the vessel from sinking when loaded and waterlogged. This system is the result of experiments made by a well known marine engineer, and it has also been applied to the lifeboats on the vessel. By the equipment of the vessel in this manner, from 15 to 20 per cent. of the cargo space is taken.

Considerable scepticism prevails in shipping circles as to the reliability of the arrangement, and it is stated that, as the result of tests, a special board reported against the device, and the Lucia was not accepted as a successful, practically non-sinkable vessel.

It was reported in Great Britain recently, that numerous ideas had been offered to the British Government, with the object of making vessels non-sinkable, or of allowing them to remain afloat for a considerable time after being torpedoed, but all of them were practically discarded, for the reasons, either, that the devices utilized too much of the internal space, interfered too much with the speed of the vessel, were too costly and took too much time to install, or were wholly impracticable.

Radiotelegraphy on Ocean Vessels.—An order in council has been passed, amending the Defence of Canada Order, 1917, by providing that from Jan. 7, 1918, every British steamship registered in Canada of 1,600 gross tons and upward, sailing to or from any port in Europe, or in the Mediterranean Sea, shall be provided with an efficient radiotelegraph apparatus in good working order, properly installed and maintained, capable of transmitting and receiving messages for at least 100 miles by day or night, with two certified operators in charge. The owner or master of any such steamship sailing without being provided with such apparatus, shall be guilty of violating the provisions of the order.

Commonwealth Steamship Co., Ltd., has been incorporated under the Dominion Companies Act with authorized capital of \$750,000, and office at Toronto, to build, own and operate steam and other vessels and to carry on a general shipbuilding and transportation business.

The Cunard Co. had judgment entered against it recently on a claim for damage to wheat through water entering a port hole on the s.s. Pannonia, whilst en route from New York and Halifax to Great Britain. The court decided that there was no evidence on behalf of the defence that a spy had opened the port hole, but that there was lack of due diligence and ordinary judgment.



## General Shipbuilding Notes.

**Canadian Car & Foundry Co.**—The press dispatch mentioned in our last issue, to the effect that the company had been awarded a contract to build steel steamships to the value of \$10,500,000 for the U. S., is, we are advised, incorrect. No such contract has been given, the only order at present in hand is for 12 mine sweepers for the French Government.

Following are the dimensions of the 12 steel mine sweepers, valued approximately at \$2,500,000, which will be built at Fort William for the French Government:—length over all 143 ft., length between perpendiculars 135 ft., beam moulded 22½ ft., depth moulded to main deck 13¼ ft., and to quarter deck 14¼ ft.

A contract is reported to have been awarded to the Dominion Bridge Co. for the construction of the shipbuilding plant at Fort William, and another one to E. G. Penniman, Fort William, for the excavations, foundations, tracks for trucking the boats and the keel piling supports. The last contract mentioned, it is stated, is to be completed by the third week in March, and the first one early in April.

**J. F. Deveau, Meteghan, N.S.**—A 300 ton schooner was launched recently for Ritcey & Co., Lunenburg, N.S., and named Charles A. Ritcey.

**Dominion Shipbuilding Co., Ltd., Toronto.**—A permit has been granted for the construction of a one, or two, story main building on the company's site, on reclaimed land at the foot of Bathurst St., at a reported cost of \$173,000. The building will be of steel faced with hollow tile. Some details of this company, with a sketch of its site, were given in Canadian Railway and Marine World for Dec., 1917, page 490.

**St. Clair Jones, Weymouth, N.S.**—The tern schooner *Speedway*, of 400 tons, launched recently at Digby, N.S., is stated to have been chartered for a trip from St. John, N.B., to South Africa. It is reported that the builder declined an offer of \$100,000 for her just prior to launching.

**Newfoundland Shipbuilding Co., Harbor Grace, Nfld.**—The keel of a 600 ton auxiliary powered ship was laid early in February, and 4 similar ships of 500 tons each are reported to be under way. Some details of the type of vessel to be built at this plant were given in our last issue.

**Polson Iron Works, Toronto.**—The s.s. *Asp* was launched at Polson Iron Works, Toronto, Feb. 11, for Norwegian interests. Some difficulty was experienced in carrying out the launching owing to the heavy ice, which had to be cut away before the vessel could be sent down to the water. The *Asp* is a sister vessel of the s.s. *Ten-to*, launched from the same works, for the same interests, Oct. 22, 1917. Her dimensions are: length overall 261 ft., length between perpendiculars 251 ft., breadth moulded 42½ ft., depth moulded 23 ft.; deadweight capacity, 2,500 tons; mean draft, 19½ ft. She is of the *Fredrickstad* type, single deck, on the deep frame principle, with cellular double bottom all fore and aft, and peak tanks. There are 4 water tight bulkheads, 2 masts and 6 steam winches, one at each mast and derrick. She is of steel, to highest class Bureau Veritas, for ocean service, and will have steam and hand steering gear, electric light and evaporating outfit. The propelling machinery will consist of triple expansion engines, with cylinders 20½, 33 and 54 in. diar.

by 36 in. stroke, supplied with steam by 2 Scotch boilers, 14 ft. diar. by 12 ft. long, at 180 lb. working pressure. The launching of the vessel was somewhat delayed owing to the recent fire at the works, when the hull was scorched.

**The Port Arthur Shipbuilding Co., Port Arthur, Ont.**, which has under construction six cargo steamships and six trawlers, is reported to have received additional orders for five Welland Canal size freight steamships, and for eight other vessels. It has about 1,200 men employed, but it is announced that the staff must be considerably augmented to handle the amount of work on hand.

**Prince Rupert, B.C.**—W. P. Hinton, Vice President and General Manager, Grand Trunk Pacific Ry., is reported as having stated at Vancouver, Feb. 8, that a shipbuilding scheme was being considered which might mean a big development for Prince Rupert. We are advised that negotiations for the leasing of the shipbuilding plant and dry dock are going on. Both are being operated to full capacity on repair and overhaul work for the company's own steamships and for fishing vessels.

**J. N. Rafuse & Sons, Bridgewater, N.S.** launched recently a three masted schooner named *Industrial* at W. J. Foley's ship yard at Salmon River, N.S., of the following dimensions: length 113 ft., breadth 30 ft., depth 11½ ft. Arrangements are reported to have been made for the construction of a similar vessel at the same yards.

**Sault Ste. Marie, Ont.**—A deputation from Sault Ste. Marie called upon the Ontario Premier at Toronto recently, to discuss the possibility of establishing a plant at Sault Ste. Marie, for the construction of wooden steamships. The deputation also called on F. H. Clergue, at Montreal, to discuss the matter with him, but no announcement has been made as to the results of the visits. The question of a shipbuilding plant and dry dock at Sault Ste. Marie has been discussed for several years, and a company, in which Mr. Clergue was interested, was formed for the purpose of building the plant, but nothing was ever done.

**Tidewater Shipbuilders, Ltd.**—The Sorel Shipbuilding & Coal Co., Ltd., has been granted supplementary letters patent under the Dominion Companies Act, changing its name to Tidewater Shipbuilders, Ltd. The head office is at Three Rivers, Que., and Jas. M. Smith is General Manager. Canada Steamship Lines, Ltd., is interested in it. It was referred to in our last issue as Tidewater Shipbuilding Co., Ltd., that being the name used in a letter heading received in this office.

**Vessels for Foreign Register.**—A Vancouver press dispatch states that the Dominion Government is endeavoring to arrange with the Imperial Government to remove the restrictions placed on the building of vessels for foreign register. It is stated that in the event of this taking place, several French contracts will be placed there, and that construction on such vessels would be commenced immediately.

**The Wallace Shipyards, Ltd., North Vancouver, B.C.**, in addition to its orders from the Imperial Munitions Board, has on order 4 cargo steamships, 2 freight and passenger steamships and 1 auxiliary powered schooner.

## Mainly About Marine People.

**Francis King, M.A., Counsel, Dominion Marine Association, Kingston, Ont.**, has been elected a member of the National Committee of the Anglican Men's Movement.

**James Playfair, President, Great Lakes Transportation Co.**, who has not been very well, left for California early in February and is expected to return to Midland, Ont., in April.

**R. Beaumont, Assistant to Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C.**, has been appointed Superintendent, in charge of the company's service at Prince Rupert, B.C.

**A. G. Hill, formerly in charge of Babcock & Wilcox, Ltd., Toronto office**, has been appointed production engineer in charge of the production of marine engines and boilers in the Toronto district, for the Imperial Munitions Board.

**Sir George B. Hunter, Chairman, Swan, Hunter and Wigham Richardson, Ltd., Newcastle, Eng.**, and **Sir James McKechnie, Managing Director, Vickers, Ltd., Barrow, Eng.**, are two of the recently created knights of the Order of the British Empire.

**W. H. Thompson, formerly Travelling Passenger Agent, Allan Steamship Line, Toronto**, and latterly serving with the Allied Shipping Board in New York, died there, Feb. 16, from pneumonia, aged 34. He was a son of Wm. Thompson, an officer on the C.G.S. *Vigilant*, and a native of Port Dover, Ont.

**Lord Furness, head of Furness Withy & Co.**, and intimately associated with Canada Steamship Lines, Ltd., and numerous other shipowning and shipbuilding companies in various parts of the world, and who succeeded to the barony conferred on his father, Sir Christopher Furness, has been created a viscount, in recognition of his own and his companies' services to the Empire in shipping matters.

**David Seath, formerly Secretary-Treasurer, Montreal Harbor Commissioners**, died at Westmount, Que., Feb. 23. He had been failing in health for some time, and suffered a slight stroke of paralysis in May, 1917. He was born at Montreal, May 9, 1847, and for a number of years was engaged in commercial life. He was appointed Secretary of the Montreal Harbor Commissioners in 1898, and retired in 1917. He joined the Victoria Rifles in 1864, as a private, and was promoted through various grades to Paymaster, with the honorary rank of Major. He held the long service and Fenian raid medals.

**Henry A. Bayfield, who died at Victoria, B.C., Feb. 13**, was born at Charlottetown, P.E.I., and was educated there and at McGill University, graduating in 1896 with the degree of B.Sc. He was for some time engaged in wharf construction at St. John, N.B., and other eastern points, and subsequently went to Vancouver, B.C., where he conducted a private engineering practice. He was later appointed Superintendent of Dredges for British Columbia under the Dominion Public Works Department, and latterly acted as engineer in charge of the Imperial Munitions Board's assembly plant at Ogden Point, Victoria, where machinery is being installed in wooden hulls built on the Pacific coast. He was an associate member of the Canadian Society of Civil Engineers from 1901, and a councillor of the society in 1909.



## Dominion Marine Association's Annual Meeting and Report.

The annual meeting was held in Toronto, Feb. 20, A. A. Wright, President, in the chair. The executive committee's report, as printed below, was presented and adopted, after various clauses had been discussed.

A letter having been read from the Board of Grain Commissioners, announcing the receipt of a notification from the Terminal Elevator Co. that it was not prepared to continue, for the season of 1918, the arrangements in force in 1917 in connection with cargo allowances, the association decided to maintain the attitude taken by the executive committee in favor of a renewal of the 1917 arrangements.

J. T. Mathews, L. Henderson, W. H. Smith and F. King were appointed a committee, with power to add to their number, to interview Marine and Public Works Departments' officials at Ottawa, for the purpose of getting the regulations respecting turning of vessels at Fort William changed to an equitable basis.

A letter having been read from the Secretary and Business Manager of the National Association of Marine Engineers of Canada, enclosing a 1918 minimum wage scale and classification for steamships operating in the Great Lakes district, which it was stated had been sent to all owners, asking an increase in pay, it was decided that, in accordance with previous custom, the question be dealt with by individual owners.

The committee appointed to interview the Marine and Public Works Departments' officials, in reference to the turning of vessels at Fort William, were authorized to urge on the Marine Department the necessity of enacting regulations respecting drinking water on vessels, so that Canadian vessels would thereby comply with U. S. requirements.

The Upper Canada Tract Society was granted \$200, towards the expenses of the Toronto Sailors' Institute for 1918.

The question of dredging at Wolfe Island, in the St. Lawrence River, having been considered, it was decided to recommend to the Dominion Government that the work be done.

The resignation of W. L. Reed, formerly of the Canadian Northwest Steamship Co., as a member of the executive committee, was accepted, the company having gone out of business.

The question of aids to navigation was referred to the incoming committee.

It was decided to protest again the proposed power development work at Rapide Plat, in the St. Lawrence River, by the New York & Ontario Power Co.

The committee named as above, to interview Marine and Public Works Departments' officials, was authorized, in conjunction with J. Donnelly, to ask the Marine Department to amend the boiler inspection regulations, particularly in regard to the pressure allowed and the hydrostatic tests required every year.

The following were appointed a committee on aids to navigation: A. A. Wright, W. J. McCormack, A. E. Mathews, J. F. Sowards, James Bassett, H. N. McMaster, G. E. Fair and W. H. Smith.

The four vacancies on the executive committee, caused by the expiry of the terms of W. E. Burke and A. E. Mathews, Toronto; D. Murphy, Ottawa (deceased), and W. L. Reed, Toronto (resigned), were filled by the re-election of Messrs. Burke and Mathews and by the election of James Bassett, Toronto, and J. F. Sowards, Kingston. The other members of the

committee, whose terms have not expired, are: A. A. Wright, J. T. Mathews, G. E. Fair, C. B. Harris and J. F. M. Stewart, Toronto; L. Henderson and John Waller, Montreal, and W. J. McCormack, Sault Ste. Marie.

J. T. Mathews was elected President, W. J. McCormack, Vice President, and G. E. Fair, Second Vice President.

### EXECUTIVE COMMITTEE'S REPORT.

The following report was submitted, signed by A. A. Wright, President, and Francis King, Counsel:—In preparing the following report of the association's work for the year 1917, the executive committee has made no effort to extend its scope beyond that covered in previous years, and has made reference only to those matters of interest to shipping on Canadian inland waters which have been the subject of consideration or action at meetings of the association or of its committees, or which have been otherwise dealt with by the association's officers during the year. The report is thus somewhat limited in extent, for the number of meetings held in 1917 has been much smaller than usual, and largely owing to war conditions the opportunity to seek or promote reforms by legislation or otherwise has been wanting, while at the same time and for the same reasons the pressing need of opposition to unwise legislation or of scrutiny of exploitations adverse to shipping interests has been correspondingly lessened. The items dealt with may be referred to under separate headings, as follows:—

**Legislation.**—Omitting orders in council and departmental regulations, which have not heretofore been included under this heading, it may be said that the only legislation before the Dominion Parliament in 1917 directly affecting shipping and requiring consideration by the association was the proposed amendment of the Railway Act, designed to bring carriers by water under the Board of Railway Commissioners' jurisdiction. The association's successful opposition to this proposal is reported in the following paragraph:—The Dominion Statutes for 1917 thus contains no general public statute relating to shipping.

**The Railway Bill, Sec. 358.**—In the course of the last few sessions of parliament the association has successfully opposed a number of bills introduced for the purpose of bringing carriers by water under the jurisdiction of the Board of Railway Commissioners. In the session of 1917, however, the argument turned on a section in the general bill to amend and revise the Railway Act, and it was necessary to bring opposition, not to a private bill but to a government measure. The section in the present Railway Act is as follows:—

"The provisions of this act in respect of tolls, tariffs and joint tariffs shall, so far as they are applicable, extend to the traffic carried by any company by sea or by inland water, between any ports or places in Canada, if the company owns, charters, uses, maintains or works, or is a party to any arrangement for using, maintaining or working vessels for carrying traffic by sea or by inland water between any such ports or places."

The bill proposed to amend this by a slight verbal alteration and by the addition of four important lines so that the section would read as follows:—

"The provisions of this act, shall, so far as deemed applicable by the board, extend and apply to the traffic carried by any railway company by sea or by inland water, between any ports or places in Canada, if the company owns, charters, uses, maintains or works, or is a party to any arrangement for using, maintaining or working vessels for carrying traffic by sea or by inland

water between any such ports or places, and the provisions of this act in respect of tolls, tariffs and joint tariffs shall, so far as deemed applicable by the board, extend and apply to all freight traffic carried by any carrier by water from any port or place in Canada to any other port or place in Canada."

A protest was filed against the proposed amendment, and the progress of the bill in committee was carefully watched. Upon learning that those favoring the legislation were relying to some extent upon the supposed existence of similar legislation in the United States, evidence was procured to prove that neither the Interstate Commerce Committee nor the new Shipping Board exercised any such jurisdiction as that proposed over common carriers, and care was also taken to inform the public of the impracticability of the proposal. In due course the matter came up for argument in the House of Commons Railway Committee, and a representative delegation from the association, supported by the leading boards of trade and many mercantile and shipping concerns throughout the Dominion, made a strong case against the amendment of the section. As a result the committee struck out the amending words in bold face type in the second quotation set out above, leaving the section substantially as it had stood heretofore and as first above quoted. The bill has not yet been enacted, but it is assumed that the section will finally appear in accordance with the committee's report.

**Drinking Water on Ships.**—Just prior to the opening of navigation in 1917 your Counsel's opinion that the new U.S. regulations as to pure drinking water would apply to Canadian ships entering U. S. ports, was confirmed by rulings of the officials charged with the enforcement of the law. In the short time remaining before the opening it was practically impossible to comply with these regulations, for they required that unless drinking water was taken on board from an approved source it must be purified by approved means, including among other things the installation of a separate system entirely distinct from the ordinary water piping, and also the installation of an approved plant for sterilizing the water. The Marine Department at Ottawa was consulted, and later a deputation waited upon the Deputy Minister. Full information was supplied to him as to the difficulties in the way, and a day or two later he visited Washington in the hope of making an arrangement in the interests of Canadian ships. He was successful, and the arrangement reached, suspended the regulations in U. S. ports as to Canadian vessels until the spring of 1918, on the understanding that in the meantime regulations of a similar nature would be adopted in Canada, and it was agreed that proof of compliance with these Canadian regulations would be accepted in U. S. ports. Since that time many members of the association, as opportunity arose, have installed plants on their ships approved by the U. S. authorities. Members have also been advised from time to time that, in the absence of Canadian regulations, ships must be prepared to show compliance with those of the U. S. on entering ports of that country; and full information as to approved installations has been circulated. The Department has also been reminded of the arrangement to enact Canadian rules, but up to this date has not sent notice of any action or submitted any proposals for considerations.

**Canadian Regulations regarding Grain**



**Cargo Outturns.**—Early in 1917 the Board of Grain Commissioners submitted to the various interests, enquiries as to the continuance of the regulations in force since 1915, and in due course at a meeting of the grain section it was resolved to ask for the re-enactment of the same regulations for the ensuing season. Some eastern elevators were opposed to this, and the loading houses sought a larger contribution from the carrier. The Commission therefore called a conference at Montreal on April 12, and all parties were represented there. After full argument and after a proposal from the representatives of this association, to meet an important objection, by allowing the ship to contribute a straight 15 lb. per 1,000 bush. on wheat, barley and oats, instead of  $\frac{1}{4}$  bush. per 1,000 bush. as heretofore, the Commission recorded an agreement to the re-enactment of the regulations for another season, with the one amendment above mentioned. The regulations were later promulgated accordingly, but under protest from the loading houses as to their contribution; a protest which has now been renewed in writing as to 1918. At this conference the special committee appointed by the grain commission to devise some permanent arrangement, made recommendations in favor of some plan that would include the shipper of the grain in the contributions towards adjustment. The commission was asked to assist in procuring the necessary amendment of the statute to permit this and also to work out some equitable scheme that could be enforced. The commission reserved any decision.

**Buffalo Grain Clearance Corporation.**—On April 11, 1917, the day preceding the conference with the grain commission at Montreal, a conference of representatives of this association, The Lake Carriers' Association and the Grain Clearance Corporation, was held at Buffalo. It was then resolved at the outset that the Clearance Corporation ought to continue its services if arrangements could be made, and after full discussion of reports a working plan was outlined in the following terms:—

1. That the contribution of the ships shall be on the basis of  $\frac{1}{2}$  bush. per 1,000 bush. from all ports to all ports;
2. That in order to provide funds for operating and for the purposes mentioned in clause 4, the ships shall respectively pay \$200 on first arrival with grain cargo, subject to this contract (majority opinion seems to be that this item should be a fixed amount, but may be on sliding scale, based on capacity of ships or other conditions);
3. The 12c. and 24c. of the former contract may be increased to 15c. and 30c.;
4. Such contribution on first arrival shall be evidenced by receipt showing terms on which contribution is made, substantially that such contributions are to be repaid as soon as practicable after close of navigation, subject to the deduction of such amount from each contribution as may be necessary to give the corporation a sum, including its surplus earnings, sufficient to repay the voluntary contributions already received this year from carriers; to pay the deficit of 1916, excluding capital; and to pay back to the corporation one quarter of its exhausted capital;
5. That this agreement is for one year only and that any surplus earnings over refunds and total deficits shall be credited pro rata to the subscribers of 1917, and new arrangement to be made for 1918.

This proposal was approved by members of this association present at the Montreal conference on the following day and was at once submitted to all members by circular. On April 16th parties met again at Buffalo and settled a form of contract, similar to that previously in use, but containing the amendments above set out. This contract was then printed and upon being sent by the corporation to individual vessel owners for signature was generally adopted and entered into. In the meantime the representatives of the loading houses, who had protested at one-sixth of a bushel, after some consideration agreed to pay on shipments to the

U. S. the same amount as on Canadian shipments, but they continued their protest, and on April 21 met the grain commission at Winnipeg to present their argument for certain lower contributions. The commission, however, quite properly held to the opinion that the arrangement was concluded at Montreal, and in due course the loading houses through C. B. Piper gave the required assent to continue their contributions on the basis of one-sixth of a bushel, and the commission's regulations were then issued as above reported. Nevertheless, the final agreement of the loading houses was made under protest, and notice was served upon this association that readjustment must be made before another season opened. This notice has just been repeated, as appears from a letter received from the secretary of the grain commission after this report was prepared. The commission invites an expression of this association's views. Unfortunately the reorganized business of the Grain Clearance Corporation again proved unsuccessful, and it was forced to discontinue operations June 30, 1917.

**Shortage in Outturns, generally.**—A fair indication of the outturns of cargoes loaded at Fort William and Port Arthur in the autumn of 1917 is given by the returns sent out periodically by the Board of Grain Commissioners. An appendix to this report is made up from these returns covering periods from Aug. 22 to Dec. 18, 1917. It will be noted that the damaged grain shown in this statement forms part of the reported shortages and that the net shortage during the period mentioned, and excluding damaged grain, amounted to 0.42 bush. per 1,000 bush. of the bill of lading quantities. The detailed returns show that in number the shortages greatly exceeded the overages, only 102 cargoes turning out in excess of the bill of lading quantity, while 432 ran short.

**Grain Bill of Lading adopted by Lake Carriers' Association.**—A proposal for such a bill of lading as this was discussed at the conference in Buffalo, called to consider the winding up of the Grain Clearance Corporation, but in view of the existing regulations in force in Canada it was not considered possible to bring such a bill of lading into general use. At a later meeting of the Lake Carriers' Association a form was tentatively adopted and submitted to the Dominion Marine Association for approval. It was considered at a meeting of the association's grain section in Toronto on Sept. 11, but for the reason above mentioned and because the Wheat Export Co. was not at once prepared to consider the proposal, no action was taken. The new lake carriers' bill of lading was shortly afterwards formally adopted and put in print. A form intended for use on shipments from Canadian ports appears in an appendix to this report. This association is advised that the clause as to general average is allowed by the decision of the U. S. Supreme Court in the Jason case, notwithstanding the provisions of the Harter Act; and your Counsel has expressed the opinion that in view of the wording of the Canadian Water Carriage of Goods Act, a similar decision would probably be reached by Canadian courts. The Lake Shippers Clearance Association, by letter from Fort William dated Dec. 31, 1917, advised that this form had not then been used on any of its shipments.

**Control of Grain Trade as a War Measure.**—During the year general supervision has been exercised as to certain designated particulars, by a Board of Grain

Supervisors appointed by order in council; and latterly a corporation known as The Wheat Export Co., Ltd., has been directly charged by the Dominion Government with the export business, and, represented by Jas. Stewart, this corporation has now been in control and in relations with members of this association throughout the autumn trade. On Sept. 11 a joint meeting of this association's executive committee and its grain section met Mr. Stewart at Toronto to consider his proposals to simplify shipment and avoid congestion and delay, and also his further request for the fixing of a maximum freight rate. Members present all expressed the wish to facilitate his work as much as possible, and volunteered to accept the same maximum rate as that agreed upon on the previous day with the Lake Carriers' Association for the Buffalo trade, namely,  $4\frac{1}{4}$ c. No decision was reached and although correspondence ensued, this association was not asked to take action as a body on a matter regarding which no agreement binding members could be made, and the question was left to individual members to be dealt with at discretion.

**Payment of Freight Charges by Railway Companies.**—Upon notification from the railway companies' freight agents that vessels would no longer receive settlement of freight at Georgian Bay elevators, the matter was considered at a meeting of the association's grain section in Toronto in April and it was resolved to notify the Winnipeg Grain Exchange that shippers must prepay the freight or make some other satisfactory arrangement. Notice was given accordingly by wire and by letter. Correspondence ensued and in due course the required arrangements were made to protect the interests of the carrier.

**Clearances at Fort William and Port Arthur.**—In October a suggestion was received for simplification of the requirements regarding clearances at these ports, and the association asked the Minister of Customs to endeavor to find means to enable a ship to make a single clearance for each voyage, instead of a clearance each time she was moved from one port to the other, and also to enable clearance to be obtained at all hours and even during process of loading. The Minister favored the proposal, particularly with reference to the possible improvement in dispatch, and agreed to send a special officer to the ports to investigate and report. The matter is still under consideration and the question should be revived with the new ministry.

**Coasting Laws.**—On June 26, in view of the war conditions, and after an understanding that reciprocal action would result in the U. S., the Canadian Government proclaimed a suspension of the restrictions relating to the coasting for foreign vessels, on condition that similar privileges were in effect granted to Canadian vessels by the U. S. Government. This proposal was communicated officially to this association, shortly in advance of the passage of the order, but no opposition was offered to it, as previous protests against violation or suspension of the coasting laws had suggested reciprocal abrogation as an unobjectionable measure. Upon the passage of the order in council the various U. S. port authorities were at once instructed from Washington to suspend the enforcement of the law in their country and permit coasting of Canadian ships without imposing penalties, pending the preparation and adoption of the necessary amendment to act of Congress. It was not until Oct. 5, 1917, that the U. S. Senate finally adopted



the House of Representatives Bill 5609 without amendment.

**International Joint Commission.**—Early in the year an application was made to this commission for approval of plans for a ship channel in the St. Clair River, along the Port Huron side, with compensating works in the river lower down to maintain the levels of Lake Huron and Lake Michigan. The proposal came in due course before this association for consideration, and careful investigation was made. The undertaking promised substantial advantages, and relying upon the opinion of the Dominion Department of Public Works engineers, the Dominion Hydrographer and the officers of sister organizations, your committee, after examination of the plans, resolved to allow the application to proceed without criticism, other than comment upon the futility of measure to conserve these waters for navigation at their eastern outflow unless withdrawals at Chicago are placed under effective control. No other question directly affecting this association has come before the commission during the past year, and no notice of any public hearing has been issued; but a proposal of the New York & Ontario Power Co. for works in both channels of the river, in connection with the power development at Waddington, N.Y., will be before the commission at an early date. This is referred to under a separate heading in this report. The final report on the Lake of the Woods investigation has been published, and this, with the printed report of the consulting engineers in four volumes, have been received by the association.

**Shipping Registries.**—The last annual report contained a reference to arrangements made by this association with the sailors' institutes at Port Arthur and Kingston, for the opening of registry books, in which seamen could have their applications for employment recorded and owners could record their requirements. Similar arrangements were reported, more or less satisfactory, in certain other ports. But at Toronto, where no medium was available for this purpose, the negotiations of this association with the Upper Canada Tract Society led to the establishment of a Toronto sailors' rest and this association made a grant of \$400 towards the expense of this institution. Your committee is pleased to report that while the Toronto building is the smallest of the society institutes for sailors it has, however, proved very successful, thanks to the co-operation of owners and men. The report of the society having the institute in charge, records that up to the end of Aug., 1917, there had been over 8,000 visits made to it by sailors and others frequenting the water front and that for the same period, by actual count, 1,232 men had entered their names for employment in the free shipping registry and that of this number over 650 had been supplied with work. The report adds that part crews were also sent to Hamilton, Welland Canal, Port McNicoll, Sarnia, Belleville, Kingston, Cobourg, Thorold and Port Dalhousie. In a recent letter the society has commended the institute to the continued support of this association.

**Wage Schedule.**—No action was taken upon a schedule of wages submitted anonymously to this association early in 1917. The subject was discussed at the annual meeting and deferred for later consideration if necessary. Recently a letter was received from the secretary and business manager of the National Association of Marine Engineers for Canada stating that the organization named proposed to rearrange their classification of boats and wage scale for 1918 and sug-

gesting that a representative from the Dominion Marine Association confer with the writer with a view to making a satisfactory arrangement. The letter was acknowledged and held for consideration, your secretary being instructed in the meantime that the subject is a matter between individual members and their crews. While this report was in preparation a further communication was received from the same source enclosing a printed "wage scale and classification." It is understood that copies have been sent to all owners.

**Extension of Limits of Inland Waters.** In accordance with a resolution of this association's grain section a request was presented to the Marine Department for support in a proposal to amend the Canada Shipping Act, Sec. 72, so as to extend the limits of the Inland Waters of Canada, from Father Point and Point Orient, as far east as the eastern extremity of the Island of Anticosti. It was represented that the present limitation was an old one, dating from a period long antecedent to the development of the pulp and lumber trade from the north shore of the St. Lawrence, and that the new trade was burdened with unnecessary inconvenience and expense through having to employ additional men with coasting certificates; a difficulty accentuated by present war conditions. The proposal did not meet with approval in the department and the Deputy Minister held that the law must adopt a limit for the inland waters corresponding to the natural geographical division, and that the present location of that line is the correct one.

**Pilotage Charges — Montreal to Quebec.**—The association was consulted by the Marine Department regarding a request from the Montreal pilots that the tariff on seagoing and coasting vessels between Montreal and Quebec be increased 25c. a foot. The proposal was submitted by circular to members of this association and no opposition being raised in the meantime, the general consent being expressed by steamship agents at Montreal, a subsequent meeting of this association's grain section approved of the charge, and the amendment asked for was in due course inserted in the regulations.

**Canadian Masters and Crews on U. S. Ships.**—Correspondence at the instance of members of this association, interested in the continued employment of the same officers and crew on ships transferred to U. S. registry, brought information from the Commissioner of Navigation at Washington that following an executive order of the U. S. President, dated July 3, 1917, the Secretary of the Department of Commerce had prescribed regulations which permit Canadians under certain conditions to act as watch officers on ships of the country named. There is no law against the employment of a Canadian crew on such a ship.

**Smoke on Navigable Channels from Burning of Brush, Etc.**—Considerable correspondence took place with the Ontario Lands, Forests and Mines Department with a view of improving the existing legislation designed to prevent forest fires, and to bring about amendments placing further limitations upon the periods during which farmers and settlers may set fire to brush or slash or rubbish. Dr. Zavitz, of the department, gave the question attention and made certain suggestions which were considered at a meeting of your executive committee. It was then decided that it would be unwise to press for any amendment of the law at present and that the matter be held over for later consideration.

**Turning Vessels in the Kaministiquia River.**—As the result of correspondence and conference following recommendations of this association, sec. 15 of the regulations governing Fort William harbor, established by order in council of February 8, 1916, was amended by order in council of Feb. 2, 1917, by the addition of the following paragraph:—

"Provided, however, that steam vessels exceeding 200 tons gross, but not exceeding 260 ft. in length, may be turned with a tug in that section of the Kaministiquia River lying between the bend above C.P.R. elevator D and the westerly limit of the G.T.P.R. rail dock and provided further that steam vessels of such tonnage and length may also turn in that section of the Kaministiquia River lying between C.P.R. slip 1 and elevator C, but the turning of such vessels in the last mentioned portion of this river shall not take place without the use of a tug, unless sanctioned by the harbor master."

This amendment met with general approval from members of this association, and resulting as it did from the action taken at the instance of the association, consultation might have been expected before further amendment took place. Yet on Nov. 7, 1915, without any notice to or consultation with the association another order in council was adopted submitting the following rule in place of that above quoted.

"Sec. 15. Any vessel not exceeding 200 tons gross, or in the case of a package freighter not exceeding 275 ft. in length, may turn in any part of the Kaministiquia River under her own power; any vessel exceeding 200 tons gross, but not exceeding 260 ft. in length, or in the case of a package freighter not exceeding 330 ft. in length, may be turned with a tug in that section of the river lying between the bend above C.P.R. elevator D and the westerly limit of the G.T.P.R. wharf and may also turn in that section of the Kaministiquia River lying between C.P.R. slip 1 and elevator C, but the turning of such vessels in the last mentioned portion of this river shall not take place without the use of a tug, unless sanctioned by the harbor master. All other vessels must turn in the turning basin constructed at the head of McKellar channel."

The District Engineer of Public Works, upon whose recommendation the rule first quoted was adopted, was not consulted as to the present amendment and it appears to have arisen in the Marine Department. Objections have now been raised to the new order in council and the next executive committee will require to deal with the whole question.

**Canals.**—No representations have been made by this association to the Railways and Canals Department during 1917, save in so far as pending questions have been the subject of further discussion with one or other official. As in other departments, expenditure has been cut down to a minimum and no special alterations have this year been submitted to the association for consideration. The usual communications have passed with reference to permitted drafts of water, location and marking of obstructions and special navigation regulations, and these have been circulated to members.

**Lake Levels.**—Reference has been made in previous reports to the accentuation of natural fluctuations, particularly in restricted channels, by the withdrawals of water for power and other purposes, for instance by the diversion of the Mississippi River, through the Chicago drainage canal. The low water period, and the consequent loss in the carrying capacity of vessels, was specially commented upon in the 1915 report. Levels were considerably higher in 1917, and for convenience of reference and comparison with future years a table of levels, prepared from the monthly bulletins of the U. S. Survey of the Northern and Northwestern Lakes, is inserted as an appendix to this report.

**Power Development in Navigable Waters.**—The past year has been relatively free from difficulties in this respect. Only two proposals directly affecting navigable



channels on the main St. Lawrence route were noticed during 1917 and they made no progress. One related to the Long Sault Rapids and one to the St. Lawrence River at Coteau. Correspondence took place regarding each and direct investigation was made by members of the association in the departmental offices at Ottawa. It is understood that no formal application is now under consideration, in connection with either of these proposals. The New York & Ontario Power Co., however, is preparing to apply to the International Joint Commission for approval of certain proposed works in the St. Lawrence River, above and below the Rapide Plat, above Morrisburg, in connection with the development of their power at Waddington, N.Y., in the Little River, south of Ogden Island; and just as this report was going into print the president of the company submitted verbally to your secretary an outline of these proposals. Briefly, the company desires to make a rock fill between the foot of Ogden Island and Canada Island, in order to prevent the water of the main channel from flowing across past the foot of Ogden Island, and in order to improve the flow in its tail race; and it also desires to build a submerged dam, by a process of filling in the section of the main channel from the outer bank of the Morrisburg Canal, at its head, to Ogden Island, leaving a navigable depth above this fill of 20 to 25 ft., in order to divert sufficient water for their purposes into the Little River. It is argued for the company that this last mentioned fill will increase levels in the canal, and that the fill at the foot of the island may improve levels further upstream in the Rapide Plat. The Hydro-Electric Power Commission of Ontario is said to desire this development and to have contracted for 15,000 h.p. to be brought across the river from Waddington. These proposals will require very careful consideration and should be specially referred to the executive committee for 1918 for action.

**Harbor and Channel Improvements.**—Suggestions referred to the association, or brought forward by members, have been considered and acted upon at meetings throughout the year. Recommendations have been made by letter and by personal interview, and the various district engineers have very kindly consulted your secretary whenever occasion arose. It would be impossible to relate in detail all the points covered, but mention may be made particularly of the various improvements recommended in the Kaministiquia River, which have been favorably considered and to some extent already made the subject of departmental action; measures taken under the Navigable Waters Protection Act, to block the erection of certain proposed docks which would have encroached on the Mission River turning basin; the improvement of Goderich harbor by dredging and extension of breakwaters; the ship channel in the St. Clair River, along the Port Huron frontage, referred to elsewhere in this report; recommendations as to improvement of the Livingstone channel in the Detroit River; the removal or buoying of wrecks or temporary obstructions in various localities; the cut or channel at the foot of Wolfe Island near Clayton, N.Y.; improvements in Kingston harbor at the mouth of the Cataraqui River; the channels and dredging operations in Lake St. Louis; and various questions relating to the navigation of the canals. As in all other departments, save those immediately concerned with the provision of war materials, expenditure on public works has been cut to a minimum, and at pres-

ent no new projects of importance under this heading can receive any serious consideration.

**Aids to Navigation.**—As usual matters requiring immediate action have been dealt with by your officers as occasion arose, and much correspondence has passed, relating to unlit lights or misplaced marks, and to the better operation of certain aids or their later operation at the close of navigation. In view, however, of the general curtailment of expenditures it has not been possible to expect any substantial additional undertakings. Your committee on aids to navigation has doubtless realize this, and although a call was issued for one meeting to deal with some few pending recommendations, no quorum was obtained and no formal action has been taken. Your president, owing to the pressure of his duties as Assistant Director of Shipbuilding in the Naval Service, has not been able to attend meetings of the Lighthouse Board as often as he would have liked to, but for the reasons first mentioned this disability has not proved serious to the association.

**The Late D. Murphy.**—Your executive must record the great loss the association has suffered in the death of Dennis Murphy, President of the Ottawa Transportation Co., a member of the executive committee since the organization of the association, a past president of the association, and one of its best known, most highly esteemed and most cordially and universally liked members. Mr. Murphy's residence in Ottawa and his genial, generous nature placed the association constantly in his debt, for he never failed to welcome his friends with real hospitality when they were within reach, or to take active measures to help them in their difficulties at every opportunity whether they were absent or present. His warm heart and lovable disposition will always remain a pleasant memory with every member of the association. Upon his death in March last expressions of condolence were sent to his family, and a wreath of flowers from the association was among the many floral offerings. The association was also officially represented at the funeral.

**General Business, Membership and Tonnage.**—In this report the more important questions dealt with by your committees and officers during the year are briefly summarized. The usual general correspondence with representatives of various branches of the government and of sister organizations as well as with members of the association and other parties has taken place. The steam tonnage enrolled in the association in 1917 was 160,418 net registered tons against 166,997 tons in 1916; and the barge or sailing tonnage, 25,808 net registered tons, against 29,469 tons in 1916; a total of 186,226 tons to compare with 196,466 tons in the previous year. This continued decrease results partly from conditions due to the war, which have led to the continued abstraction of tonnage from inland waters, and partly from the fact that considerable tonnage, some of it acquired recently, has not yet been enrolled in the association. Members have continued the enrolment of their ships, irrespective of location, but losses and sales have been continuous and a fair comparison with the tonnage of previous years is therefore impossible.

### Canadian Lake Protective Association's Annual Meeting.

The report presented at the annual meeting at Toronto, Feb. 20, called atten-

tion to the casualties to vessels owned by members of the association in 1917, the record being extremely light, once more demonstrating the effectiveness of the association's work.

Under the association's constitution, its executive committee is the same as that of the Dominion Marine Association, the President of the latter being Chairman of the C.L.P.A., and the executive committee comprises the Dominion Marine Association's two vice presidents, and other members of its executive committee, whose names are given in the report of that association's annual meeting, elsewhere in this issue.

### Dominion Register of Masters, Mates and Engineers.

On the Marine Department's representation as to the desirability of keeping a register of the names and addresses of all persons in the Dominion who hold certificates of competency as masters, mates and engineers of seagoing and other steamships, an order in council has been passed as follows:—"Every person residing in Canada, not more than 65 years of age, who holds a certificate of competency, other than a temporary certificate, as master, mate or engineer, whether for seagoing or other ships, shall, on or before Apr. 30, 1918, send a statement to the Minister of Marine at Ottawa, on forms provided for the purpose, giving his full name and address, nationality, date of birth, and date and number of every certificate of competency held by him. Every such person thereafter changing the nature of his employment or his address shall forthwith notify the Minister. Temporary employment, during winter months, or when ship on which he may be engaged, may be undergoing repairs, need not be notified. Every person knowing, or having reason to believe that any person employed by him, or by any body corporate of which he is manager or superintendent, is under 65 years of age and is the holder of a certificate of competency as master, mate or engineer, whether for seagoing or other ships, shall ascertain if such person is the holder of such certificate, and if he is, and does not produce a certificate that he has reported as required by the first part of this order, shall thereupon send a statement to the Minister, containing the particulars as required, on a form provided for the purpose. Every person when required by the Minister, or by an authorized person, shall post up in a prominent place on his premises, where it can be easily read by employees, a form provided, calling attention to this order, with instructions for obtaining forms, etc.; and every person shall at all reasonable times permit any authorized person to enter his premises and make such enquiries as he may desire for the purpose of ascertaining what, if any, certificates any employees may hold, and other information in connection therewith. Any person refusing or neglecting to make any statement, enquiry or answer under these provisions, or refusing to post up and keep posted up, any notice in accordance with these provisions or refusing to permit any authorized person to enter his premises, or make any enquiry under these provisions, and any person knowingly giving any particulars which are untrue or misleading, in any statement, shall be guilty of an offence and liable on summary conviction to a fine not exceeding \$100, or imprisonment for not exceeding 2 months, or to both fine and imprisonment.



# Specifications of Auxiliary Engine Room Machinery for Standard Wooden Steamships for British Government.

Canadian Railway and Marine World for January contained a very full summary of the specifications for the hulls of wooden steamships being built in Canada for the British Government, under orders placed by the Imperial Munitions Board at Ottawa, together with plans, and the February issue contained the full specifications for the marine engines for these vessels, together with plans. Following are the specifications for the auxiliary engine room machinery:—

**Independent Feed Pumps.**—To be of the long stroke Simplex type, generally known as the Weir type, having steam cylinder 10 in., pump 6 in. diam. by 12 in. stroke, and capable of discharging 20,000 lb. of water per hour, at not more than 12 double strokes per minute, against a boiler pressure of 180 lb. to the sq. in., when driven by steam at the same pressure. The cylinder to be of cast iron, fitted with piston of cast iron, having Ramsbottom packing rings or a single deep packing ring with cod piece. The steam valve gear to be of shuttle or similar type, designed for positive starting from rest and against full load. Piston rods and all valve gear of steam end to be of polished steel of approved design, and to be fitted with adjustable bearings on all principal pins.

Pump end to have cast iron body and valve chest, the valve chest being preferable in separate casting from the body of the pump. Pump cylinder to be fitted with a hard gun metal liner of approved quality appropriately secured. The valve chest to be fitted with suction and discharge valves of the triple disc type, or similar valves fitted with guards and adjusting gear. The whole of these parts, including the seats, to be of gun metal.

The pump should be designed with a suction and discharge branch, provided at either side for convenient arrangement of piping, and must be fitted with a control tank, having float control to steam valve, except in the case in which a filter of the gravity or tank type is fitted, in which event the control float should be attached to the filter. Pump rods to be of rolled brass or Muntz metal.

In cases where two pumps are fitted, they are to be supplied with a discharge valve, manifold box, having connection with the main and auxiliary feed lines on boilers, and so arranged that either pump can work on either line of feed piping. Where a single pump is fitted, this box will consist of a double valve chest arranged in a similar manner. These valve boxes are to be of cast iron, with brass fittings and screw down stop valves. This pump, or pair of pumps, to be fitted with the usual manifold boxes for steam valves, permitting same to be supplied either from the control or direct steam supply pipes, and straight through shut-off valves of gun metal are to be fitted on exhaust.

In these ships fitted with the standard engine supplied by the board, one only of these pumps will be fitted, as the standard engine is already supplied with ram feed pumps driven from the air pump levers. For ships fitted with the Polson engine this pump will be supplied by the Polson Co. For ships fitted with the Inglis engine, a pair of the above pumps will require to be supplied by the board, as this engine is not supplied with the ram feed pumps driven from the air pump levers. Plan of the pump and gear and

specification in detail proposed to be supplied must be submitted by each pump contractor for the approval of the board's technical adviser.

**General Service Pump.**—A vertical duplex pump, having cylinders 6 in. diam., pump 4 in. diam. by 6 in. stroke, or equivalent pump capacity and ratio of cylinder to pump, to be fitted and arranged for general service, which includes boiler feed circulating, deck, fire and sanitary service. This pump is to be of the type generally known as the Worthington, in which the valve gear of the one side is driven by the movement of the engine on the other side.

The cylinders to be of best cast iron. The valves to be of the flat type and arranged with compression valves, to ensure start and continuous working. The piston to be fitted with Ramsbottom rings, piston rod to be of wrought iron or steel and the valve gear of wrought iron or steel; all the part to be of the most substantial design, to approval.

The pump end to have cast iron cylinders and valve chest, fitted with a hard brass or gun metal liner and brass valve seats, valve guards, etc., the valves being of the Kinghorn triple disc type. The pump rods to be of hard rolled brass, or Muntz metal, and the pump pistons to be of brass with water grooves, or of cast iron fitted with brass liners of the same type. These pumps to be fitted with steam and exhaust valves of brass.

A duplex ballast pump for low pressure service, capable of pumping about 100 tons of water an hour, and having a steam cylinder 7½ in. diam., pump 9 in. diam., and with stroke of 10 in., to be fitted in the engine room. Cylinder to be of hard cast iron fitted with piston having Ramsbottom rings, piston rod of wrought iron or steel, valve gear of substantial design of wrought iron or steel, having main pins fitted with adjustable bearings. The pump end of cast iron fitted with brass liner and cast iron valve chest fitted with brass valve seats and guards, etc. Valves to be of rubber. Pump rods to be of rolled brass or gun metal and the pump pistons of brass with water grooves or of cast iron with brass liners and water grooves as may be approved. Pumps to be fitted with steam exhaust valves of brass.

Pumps in general are to be of the type specially designed for service at sea, and to be fitted with all necessary drain cocks, pipes, lubricator cocks, etc. In each case full detailed plans and specifications of the article proposed to be supplied, showing the size of the various principal parts are to be submitted for the approval of the board's technical adviser before contract be entered into.

**Auxiliary condenser** to be of the surface atmospheric type, having approximately 400 sq. ft. of cooling surface, to be capable of condensing steam from five 7 x 12 winches, and the electric light plant, at one time. The condenser shell to be of cast iron or wrought iron; the water boxes and covers to be of cast iron; the tube sheets to be of rolled brass, carried out to the edges of the water and flanges. Tubes to be of brass and to be fitted with brass ferrules, collared at one end, packed with cotton packing. Condenser to have exhaust pipe led into the main waste steam pipe up funnel, having an area of one and a half times the total area of the exhaust pipes led into the condenser. The

drain from this condenser to lead to the gravity filter, if this type be fitted, or alternately to a small drain tank placed in the engine room, described in the engine specifications.

The feed heater to be of the exhaust surface type, of sufficient heating surface to deal with 25,000 lb. of feed water an hour, from a temperature corresponding to a vacuum of 25 in. to atmospheric boiling point or thereabouts. The heating surface to consist of straight copper tubes arranged in an approved manner, secured to the heads in such a way as to obviate expansion troubles. The heater body to be of cast iron, as also the heads and covers. Heater preferably to be placed horizontally and to be fitted with air extraction pipes, drain cocks, steam valve for cleaning and supplying live steam in case of necessity. Safety valve and pressure gauges to be fitted as required by classification societies.

**Feed water filter** of the gravity type to deal with about 25,000 lb. of feed water per hour. This tank will be placed on the suction side of the feed pumps, on the discharge side of the air pump, and to be fitted with buckets containing coke or coir matting, to extract grease and dirt from the water. The design of this tank to be approved by board's representatives, as also the size. The necessary inlet and outlet, and by-pass valves for feed water, to be fitted and also wrought iron covers. Float to be arranged in a portion of the tank to control the independent feed pumps. Alternately, quotations to be given for a pressure feed filter to be placed between the feed pumps and the main boilers, of a type which consists of cages or discs covered with huck toweling, or other similar material, to extract the grease from the water. Filter of ample size to deal with 25,000 lb. of feed water an hour. Body to be of cast iron, cages or discs to be of wrought iron. All necessary valves and fittings to be supplied.

**Evaporator.**—Evaporator to be supplied capable of evaporating 15 tons of sea water a day at a pressure not exceeding 10 lb. by gauge. The evaporator shell to be of cast iron; heating surface to consist of copper tubes conveniently arranged for accessibility and removal for cleaning. Vapor valves, steam valve, brine valve and blowdown to be fitted as usual. To be lined with non-conducting composition cleaded with sheet iron.

Full details of the above fittings, including specifications and detail plans of what is proposed to be supplied are to be furnished by the contractors with tender. No tender will be considered which does not give fullest possible details of the appliances which it is proposed to supply. Quotations should be detailed, so that a comprehensive price is quoted for each of the above mentioned items, and the plans should be to scale, so that they may be used by the board's drafting staff for engine room arrangement purposes.

The New York State Barge Canal, from Lake Erie to the Hudson River, will, according to a report by the State Engineer, be opened for traffic by May 15. Some comparatively minor contracts still remain uncompleted, but he states that a carefully prepared statement shows the rate of progress to be maintained up to May 15, which, if adhered to, leaves no doubt as to the opening date.



## Canada Steamship Lines' Annual Report.

A Montreal press dispatch, Feb. 23, stated that the annual statement shows that, while there was a large increase in gross revenue, there was also a large increase in expenses, with the result that the net for 1917 shows a slight decrease compared with 1916.

After deductions of bond and debenture interest and all other charges there was a profit of \$2,178,401. This compares with \$2,391,027 in 1916, making a decrease of \$212,626. The surplus account shows that after adding the balance from last year and allowing for the \$2,479,166 paid on account of current and deferred preferred dividends, there was surplus of \$2,374,754, an increase of \$547,411.

The President, James Carruthers, in his report to the shareholders, says that the company's tonnage was much greater than in 1916, despite the losses that had occurred, and the future could only be considered as promising of development and expansion on the high seas. In speaking of dividends, he stated that the deferred dividends on the preference shares had been paid, and that it has been decided to resume them quarterly. Altogether the company's situation could be summed up as highly satisfactory.

## New Steamships for Canadian Pacific Ocean Services Ltd.

Canadian Railway and Marine World for May, 1917, contained some details of new steamships purchased and ordered by Canadian Pacific Ocean Services, Ltd., for the Atlantic service. One vessel then under construction at Newcastle, Eng., was purchased while on the ways for delivery about Aug., 1917, and arrangements were made with John Brown & Co., Glasgow; The Fairfield Shipbuilding & Engineering Co., Glasgow; and Harland & Wolff, Belfast, for the construction on a cost and percentage basis, of two steamships 605 ft. long between perpendiculars, with a speed of 20 knots an hour, and two steamships 546 ft. long between perpendiculars, with a speed of 16 knots an hour. Owing to wartime restrictions, it has not been permissible to publish particulars of progress on these vessels from time to time, but it is evident that notwithstanding the general pressure in all shipbuilding yards, these orders have been pushed forward. One of these vessels arrived at St. John, N.B., Feb. 14, on her maiden voyage, in charge of Capt. Webster, formerly of the company's s.s. Metagama. Local reports give her dimensions as: length 520 ft., beam 67 ft., depth 42 ft.; tonnage, 15,000 gross. It is also stated that the propelling machinery consists of combined reciprocating and turbine engines, maintaining a speed of 17 knots an hour. Accommodation is provided for about 2,000 passengers.

## Telegraph, Telephone and Cable Matters.

A. Entwistle, assistant agent, C.P.R. Telegraphs, Edmonton, Alta., was presented with a wrist watch by the local stax recently, on leaving for Calgary to report for military service.

The Great North Western Telegraph Co. has opened offices at St. Cyr, St. Ulric and Riviere Blanche, Que., and has closed its offices at Abenakis Springs Hotel and Chaleurs, Que., and Kashbaw, Ont.

The Pacific Cable Board's report for the year ended Mar. 31, 1917, shows receipts of \$1,683,870 and expenditures of \$779,240. After placing \$450,000 to the renewal fund, there was a surplus of \$454,600. There was an increase of \$130,635 in receipts and an increase of \$69,755 in expenses. There were no interruptions nor repairs reported during the year. The special war allowance to employees was increased to 20% of the net salary for the year.

## Among the Express Companies.

C. J. Crawley has been appointed agent, Canadian Northern Ex. Co., Humboldt, Sask., vice H. E. Race, transferred.

LeBaron Coleman, agent, Canadian Ex. Co., Halifax, N.S., who lost his life in the recent disastrous explosion there, entered express service in 1880, as messenger, Intercolonial Ex. Co., and when that company was taken over by the Canadian Ex. Co. in 1890, he continued in the service, and in 1899 was appointed route agent, and in 1905, agent at Halifax.

The Board of Railway Commissioners has refused the application of the Freight and Express Underwriters, Toronto, that the last paragraph of rule 6 of the Canadian Car Demurrage Rules, prescribed by general order 201, Aug. 1, 1917, be changed to read as follows:—"Notice of claim for refund of demurrage under this rule, to be presented to the carrier's agent within 15 days."

The Board of Railway Commissioners has extended the express collection and delivery limits in Windsor, Ont., to include, by the water front from the eastern to the western city boundaries, by the western city limit from the river, London St., McEwan Ave., Martin St., Cameron Ave., London St., Wellington Ave., Elliott St., Dougal Ave., Giles and Howard Aves., Erie St. and the eastern limit to the river; also outside that area, in McDougall St., from Giles Ave. to Tecumseh Road. This order became effective Jan. 28.

Archibald J. Seaton, who was appointed Superintendent, Eastern Division, Canadian Ex. Co., Montreal, recently, was born in Middlesex County, Ont., Nov. 26, 1867, and entered the company's service in 1886, since when he has been, to 1887, clerk, Galt, Ont.; 1887 to 1901, messenger; 1901 to 1908, agent, St. Thomas, Ont.; 1908 to 1912, route agent, Montreal; 1912 to June 15, 1917, Assistant to Superintendent, Eastern Division, Montreal; June 16, to Dec. 31, 1917, Assistant Superintendent, Eastern Division, Montreal.

An order in council has been passed providing that every express company carrying imported goods into or through Canada shall provide secure and sufficient sufferance warehouses at the customs port of delivery, for the storage of goods so carried in bond by express, pending entry at the Customs House. The warehouses shall be subject to the approval of the Minister of Customs, and also the scale of fees payable as storage, and he shall also determine from time to time, the rental to be paid by the Customs Department for the space allotted to express companies in the customs examining warehouse, etc. The previous regulations enacted Apr. 10, 1917, have been repealed.

The Dominion Ex. Co. was sued at Montreal recently for \$150, the value of a trunk and contents, lost by the company. The company admitted liability to the extent of \$50, to which it claimed to be limited by the stipulation on the contract,

the sender not having declared the value of the trunk to be greater. The person suing claimed that he could not read the contract, it being in English, and urged that the terms of the contract should have been in both English and French as required by the Quebec law. The judgment declared that the law did not require the use of both languages on the one paper. If, however, the plaintiff had asked for a copy of the contract in French, or asked to have it explained in French, he was entitled to it. As he had not done so, judgment was entered for the \$50 which the company admitted.

The Board of Railway Commissioners has ordered that the express collection and delivery limits in Winnipeg, unless otherwise provided in the express classification, or published tariffs, shall include, in that portion of ward 7 between the east end of Point Douglas railway bridge and the Redwood bridge included within Roland St. and Johnson and Noble Aves. on the one side and the Red River on the other, also in Union and Martin Aves. between Watt St. and the C.P.R., and in Watt and Levis Sts. from Martin to Johnson Ave.; from the Redwood bridge by the west bank of the river, the present northern city limit, Main St., Lansdowne Ave., McGregor St., Machray Ave., Parr St., Burrows Ave., McPhillips St., thence C.P.R. west to Bury St., Quelch St., Alexander Ave., McPhillips St., Lipton St., St. Matthews Ave., Sherburn St. Portage Ave., Midland Ry., north bank of the Assiniboine River to the line of Cambridge St., Academy Road, Oxford St., Haskins Ave., Cockburn St., to the C.N.R. yards, Daly St. from Carlaw Ave., Jubilee Ave., Osborne St., Florence Ave., Fisher St., Morley Ave., Eccles St., and the west bank of the Red River to Redwood bridge; also outside of the said enclosed area, in Notre Dame Ave. from McPhillips St. to the C.P.R. Pembina Branch and the Prairie City Oil Co., and in Winnipeg Ave. from McPhillips St. to the Grain Growers Grain Co. The order became effective Feb. 18.

J. A. D. Vickers, Vice President and General Manager, American Express Co., Chicago, Ill., who died there Feb. 16, after a long illness, was born at Toronto, May 22, 1858, and educated at Upper Canada College. He entered express service at Toronto in 1875, with the Vickers Express Co., of which his father was the founder. From that time to Feb., 1882, he held various positions in that office, and at the latter date was appointed Superintendent, and also acted as Treasurer and Auditor. On the absorption of the company by the American Ex. Co., he was appointed Superintendent of the Canadian Division, and held this position until the National Ex. Co. extended its service over the New York, Chicago & St. Louis Ry. and the G.T.R., to Chicago, and over the Toledo, St. Louis & Western Ry. to St. Louis, Mo., in May, 1891, when he was placed in charge of these lines as Superintendent, with office at Chicago, Ill. He was promoted to General Superintendent, July 1, 1905; General Manager, Western Department, Nov. 27, 1906, which position he held until June 11, 1914, when he was appointed Vice President and General Manager, Western Lines, American Ex. Co., his territory covering 55,000 miles of railways, about 7,000 offices and 18,000 employees. V. G. R. Vickers, Vice President, The Holden Co., Ltd., Montreal, and formerly General Superintendent, Foreign and Money Order Department, Dominion Ex. Co., is a brother. The funeral at Toronto, Feb. 20, was attended by a number of express and transportation officials.



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## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Buffalo Brake Beam Co.**—A. E. Crone has been appointed Vice President and General Manager.

**Dougall Varnish Co., Ltd.**—J. S. N. Dougall, President, died in Montreal, Feb. 2, aged 63, after being ill about 3 months.

**Railway & Power Engineering Corporation**, Toronto, has appointed J. G. Bryson, formerly of the Northern Electric Co., as its eastern manager, with office in Power Building, Montreal.

**Brown Hoisting Machinery Co.**, Cleveland, Ohio, has issued catalogue E, of Brownhoist buckets and tubs, describing and illustrating ore, coal, excavating, special, single rope and contractors grab buckets, drag line buckets, special buckets and tubs.

**Franklin Railway Supply Co. of Canada, Ltd.**, has been incorporated under the Dominion Companies Act, with authorized capital of \$25,000, and office at Montreal, the incorporators being J. S. Coffin, Jr., Montreal; J. S. Coffin, S. G. Allen, G. F. Ball and C. L. Winey, of New York, N.Y.

**Canadian Ingersoll - Rand Co., Ltd.** Montreal, has issued Bulletin K-301-A, describing two-stage, power driven air compressors, of the duplex type, PLB-2. It is a 16 page, 6 x 9 in. pamphlet, outlining notable features of construction, such as the Circo leaf valves, Haight 100% belt wheel joint, bath lubrication system, dust-proof frames and casings, etc.

**Malm, Gordon & Co.**—The name of Theo Malm & Co., electrical, construction, civil, structural and mechanical engineers, Toronto, has been changed to Malm, Gordon & Co., W. G. Gordon having entered into partnership with Theo Malm. Mr. Gordon is a son of the Rev. D. M. Gordon,

ex Principal of Queens University, Kingston, Ont. After graduating from Cornell University, in electrical engineering, in 1899, he entered the General Electric Co.'s testing department at Schenectady, N.Y. While in the railway construction department, he had charge for the General Electric Co. of the installation of the first electrically operated train on the Manhattan Elevated Ry., New York, and later of the installation of the first multiple unit equipments for the Northwestern Elevated Ry., Chicago, Aurora, Elgin & Chicago Ry., Lake Shore Electric Ry., etc. Later, while in the railway engineering department at Schenectady, he was closely associated with the further development of multiple unit operation for the New York Central Lines, and the Interboro Rapid Transit Co. He went to Australia in the General Electric Co.'s interests and was Manager and Engineer of the North Melbourne Tramways & Lighting Co., Ltd., later Engineer for the National Electric & Engineering Co., Ltd., handling the New Zealand business for the General Electric Co., and finally engineer for the Brisbane Tramways Co., Ltd., until his return to Canada, in 1914, when he was appointed Transportation Engineer, Canadian General Electric Co., Toronto, in charge of all enquiries and in connection with electric traction.

**Metal and Thermit Corporation.**—The businesses of the Goldschmidt Detinning Co. and the Goldschmidt Thermit Co. will hereafter be conducted by the Metal & Thermit Corporation, with head office at 120 Broadway, New York. These two concerns have practically been combined for the last two years and have occupied joint offices. The combination, it is announced, is controlled exclusively by Americans. The detinning department will carry on the recovering of tin from tin scrap. Approximately 100,000 tons of tin scrap are treated yearly and the recovery approximates the equivalent of 2,000 gross tons of metallic tin. The output of this branch consists of pig tin of a quality equalling Straits tin, tetrachloride of tin and detinned billets, the latter being the iron scrap after the tin is removed, compressed into billets and used by iron and steel plants for remelting. The Thermit department will continue the production and sale of Thermit welding materials and apparatus as well as the various car-

## THE VICTORIA ROLLING STOCK & REALTY CO., OF ONTARIO, LIMITED.

NOTICE is hereby given that the Annual Meeting of the Shareholders of the Victoria Rolling Stock & Realty Company of Ontario, Limited, will be held at the offices of Messrs. Osler & Hammond, 21 Jordan Street, Toronto, on Wednesday, March 6, 1918, at twelve o'clock noon, for the reception of the Annual Report and election of Directors for the ensuing year.

By order,

H. F. MARRIOTT,  
Secretary.

Toronto, February 20, 1918.

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Estimates given on any number.

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bon-free metals and alloys which are produced by the aluminothermic process. The company also produces pure tungsten powder of high quality and in very considerable quantity. It is also selling agent for the output of a plant in the middle west producing 50% electric furnace ferro-silicon. The Thermit welding process is used by practically all the railways in the United States and Canada for welding broken locomotive frames and other heavy sections. It is also used extensively by steel mills for welding broken equipment. It is also extensively used for welding of electric railway rails, welding of broken sternposts and rudder frames of steamships and for other welding operations. The Metal & Thermit Corporation operates four plants located in Jersey City, Chrome, N.J., Wyandotte, Mich., and East Chicago, Ind. The Chrome and East Chicago plants are devoted to the detinning industry; the Wyandotte plant to the production of liquid chlorine and the Jersey City plant to the Thermit products. The corporation operates branch offices and welding shops in Pittsburg, Chicago, San Francisco and Toronto. The following are the officers and directors:—W. T. Graham; E. L. Marston; D. G. Reid; F. S. Wheeler; H. E. Rogers; F. H. Hirschland; E. L. Ballard; L. A. Welles; C. F. Dane; F. Gensheimer; F. W. Cohen.





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a southerly or southeasterly direction by way of Kelowna, by the most feasible route to a point at or near Penticton, B.C.

(c) From a point at or near Tulameen in a westerly direction up the Tulameen River, B.C., a distance of about 50 miles.

(d) From a point at or near Penticton, B.C., by the most feasible route, to a point on the International Boundary line at or near the shore line of Osoyoos Lake.

(e) From a point at or near the Otter Summit by the most feasible route to the Aspengrove Mining District, Province of British Columbia, not exceeding a length of 30 miles.

2. And to increase its bonding powers in respect of the line from Summer Creek or One Mile Creek to Copper Mountain and Voight Mining Camps to seventy thousand dollars (\$70,000.00) per mile, and for other purposes.

Dated at Montreal, this 2nd day of February, 1918.

H. C. OSWALD,  
Secretary.

PRINGLE, THOMPSON, BURGESS &  
COTE,  
Ottawa Agents.

### Canadian Pacific Railway Company.

#### DIVIDEND NOTICE.

At a meeting of the Board of Directors held today, the following dividends were declared:

On the Preference Stock, two per cent. for the half-year ended 31st December last.

On the Common Stock, two and one-half per cent. for the quarter ended 31st December last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account.

Both dividends are payable 1st April next to Shareholders of record at three p.m. on 1st March next.

By order of the Board.

ERNEST ALEXANDER,  
Secretary.  
Montreal, 4th February, 1918.

### THE KETTLE VALLEY RAILWAY COMPANY.

Notice.—The Kettle Valley Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which it may commence the construction of the following lines of railway, which it has heretofore been duly authorized to construct:—

(a) From a point on its authorized line at or near Summer Creek or One Mile Creek by the most feasible route to the Copper Mountain and Voight Mining Camps situate about 15 miles southwest of Princeton, B.C.

(b) From a point at or near Vernon in



# Ottawa Traction Company, Limited

## Fourth Annual Report for Year Ending December 31, 1917

Your directors have much pleasure in submitting their fourth annual report for the year ending Dec. 31, 1917, including the operation of The Ottawa Electric Railway Co.

Gross earnings of Ottawa Electric Railway Co. were .....	\$1,240,627.24
Operating expenses and maintenance .....	705,338.04
Net earnings from operation ....	\$ 535,289.20
Net earnings 1916 .....	484,564.49
Increase 1917 .....	\$ 50,724.71

The net earnings were disposed of as follows:

Four quarterly dividends of 3% and a bonus of 3% .....	\$ 281,580.00
Interest on bonds and loans .....	44,079.97
Mileage payments .....	16,442.94
Taxes .....	24,484.46
Business war tax .....	40,615.97
Reserve for depreciation .....	110,000.00
Transferred to credit of profit and loss .....	18,085.86
	\$ 535,289.20

29,347,692 passengers were carried, compared with 27,033,778 in 1916, an increase of 2,313,914.

The balance at credit of profit and loss account is now \$267,590.40. The usual quarterly dividends of 3% were paid throughout the year and a bonus of 3%; also the business war tax \$40,615.97, and \$110,000.00 set aside for depreciation, leaving \$18,085.86 to be placed to the credit of profit and loss account.

Three new p.a.y.e. cars were put in service during the year, the tracks on Sussex St., from the north side of Rideau St. to the north side of St. Patrick St., relaid with 80 lb. T rail, and no. 2 shed at Rockcliffe extended and improved so as to accommodate a number of additional cars, all at a cost of about \$50,000.

Your board has again to report with appreciation the valuable and faithful services rendered by the officers and employes of the company.

Prospects for the coming year are very encouraging and your directors look forward with confidence to continued success.

All of which is respectfully submitted.  
T. AHEARN, President.  
Ottawa, Feb. 4, 1918.

### THE OTTAWA ELECTRIC RAILWAY COMPANY.

#### STATEMENT OF ASSETS AND LIABILITIES, DEC. 31, 1917.

Assets.	
Roadbed and equipment, water power property and plant, real estate and buildings .....	\$3,336,435.44
Cash .....	54,701.95
Stores .....	35,612.30
Insurance paid on account of period beyond Dec. 31, 1917 .....	5,000.00
Accounts receivable .....	1,209.72
	\$3,432,959.41
Liabilities.	
Capital stock .....	\$1,876,900.00
First mortgage bonds .....	413,000.00
Bills payable .....	400,000.00
Dividend 95, payable Jan. 2, 1918 .....	112,632.00
Interest on bonds, payable Jan. 5, 1918 .....	8,260.00
Accounts payable .....	44,056.34
Unpaid dividends .....	520.67
Reserve for depreciation .....	110,000.00
Rest account .....	200,000.00
Profit and loss account .....	267,590.40
	\$3,432,959.41

#### Profit and Loss Account.

Dividend 92, April 2, 1917 3% .....	\$56,316
Dividend 93, July 3, 1917, 3% .....	56,316
Dividend 94, Oct. 1, 1917 3% .....	56,316
Dividend 95, payable Jan. 2, 1918, 3% and bonus of 3% .....	112,682
	281,580.00
Taxes .....	24,484.46
War tax .....	40,615.97
Mileage payments .....	16,442.94
Interest on bonds and loans .....	44,079.97
Reserve for depreciation .....	110,000.00
Balance at credit of profit and loss, Dec. 31, 1917 .....	267,590.40
	\$784,793.74

Balance at credit of profit and loss, Dec. 31, 1916 .....	\$ 249,504.54
Net earnings, year ending Dec. 31, 1917 .....	535,289.20
	\$784,793.74

Certified correct, \$784,793.74  
H. T. BURPEE, Auditor. JAMES D. FRASER, Sec'y-Treas.  
Ottawa, Feb. 4, 1918.

### OTTAWA TRACTION COMPANY, LIMITED. STATEMENT OF ASSETS AND LIABILITIES, DEC. 31, 1917.

#### Assets.

17,336 shares of The Ottawa Electric Railway Co., par value \$100 each .....

#### Liabilities.

Capital stock .....

### RECEIPTS AND PAYMENTS FOR YEAR ENDING DEC. 31, 1917.

#### Receipts.

Dividends received from The Ottawa Electric Railway Co. .... \$ 259,992.00

#### Payments.

Dividend 12, April 2, 1917, 1% .....

Certified correct, \$ 259,992.00  
H. T. BURPEE, Auditor. JAMES D. FRASER, Sec'y-Treas.

Ottawa, Feb. 4, 1918.

### OTTAWA TRACTION COMPANY, LIMITED.

#### Directors.

T. AHEARN - - - President  
WARREN Y. SOPER, Vice-President  
T. F. AHEARN. GEO. P. MURPHY.  
E. N. SOPER, J. F. SMELLIE.  
T. WORKMAN. A. J. DAWES.  
JAMES D. FRASER.

### THE OTTAWA ELECTRIC RAILWAY COMPANY.

#### Directors.

T. AHEARN - - - President  
WARREN Y. SOPER, Vice-President  
T. F. AHEARN. T. WORKMAN.  
E. N. SOPER. GEO. P. MURPHY.  
JAMES D. FRASER.  
JAMES D. FRASER - Sec'y-Treas.

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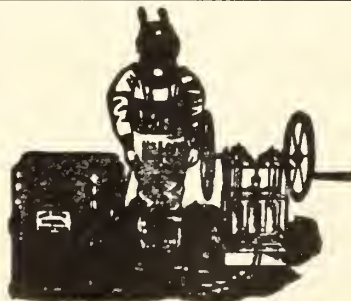
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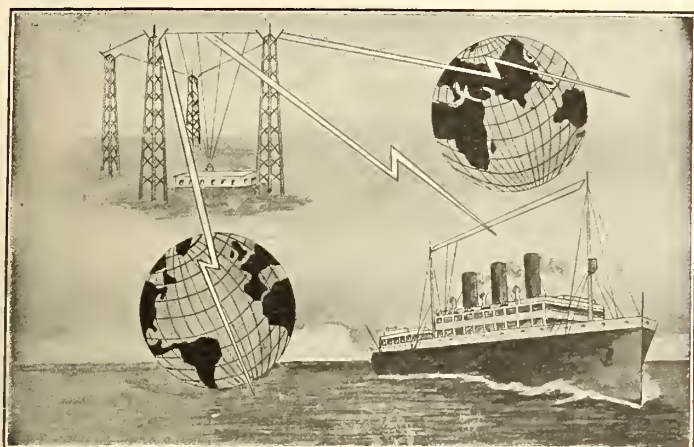
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Iron and Steel Shafting, All Sizes and Lengths.  
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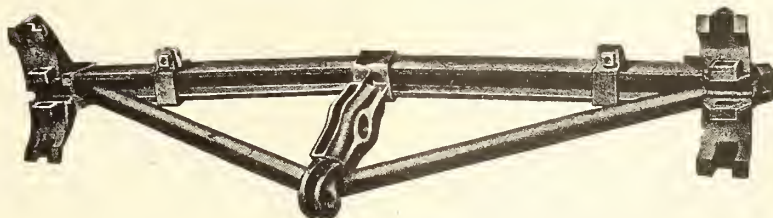
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Brake Beams for all Classes of Cars, Locomotives and Electric Equipment



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Operated in One or Two Sections

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Manufacturers of Cargo Winches, Windlasses, Steam and Hand Steering Gears, under license from standard English makers.



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*Largest Exclusive Trolley Wheel Makers in the World.*

**Kalamazoo**

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## Money paid for these Brake Shoes was largely money wasted

Why?

Because these unreinforced brake shoes did not give equivalent service for their cost, having broken in service before their life had barely commenced.

And the remedy?

Use only Reinforced Brake Shoes—then you will get your brake shoe money's worth in long and safe service.

*Manufactured in Canada.*

**Dominion Brake Shoe Company, Limited**

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# Dominion Steel Foundry Co., Limited

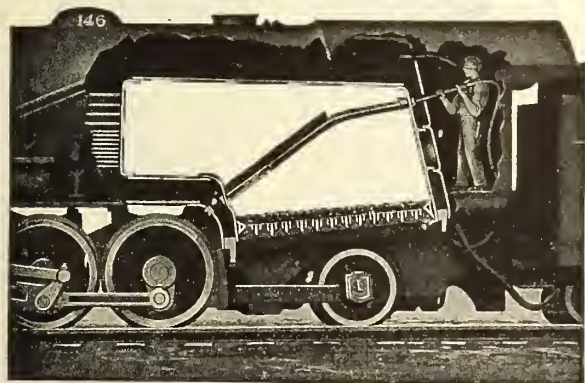
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High Grade Steel Castings up to 50,000 lbs.  
Light and Heavy Forgings also Forging  
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Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

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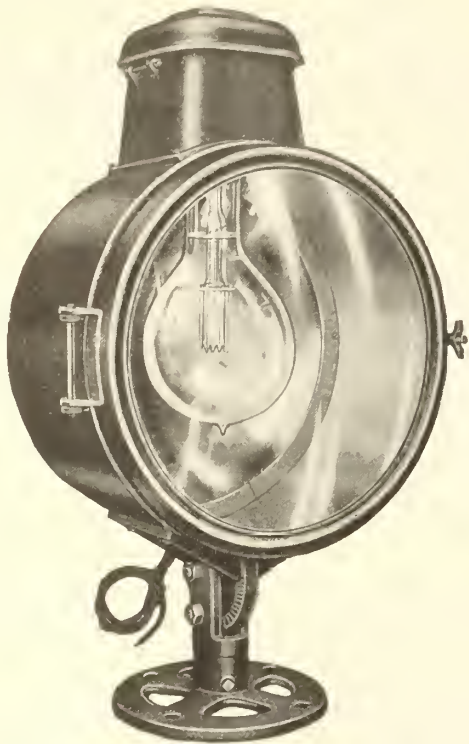
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These flood-lighting projectors are equipped with either “Golden Glow” or “Crystal Mirror” reflectors.

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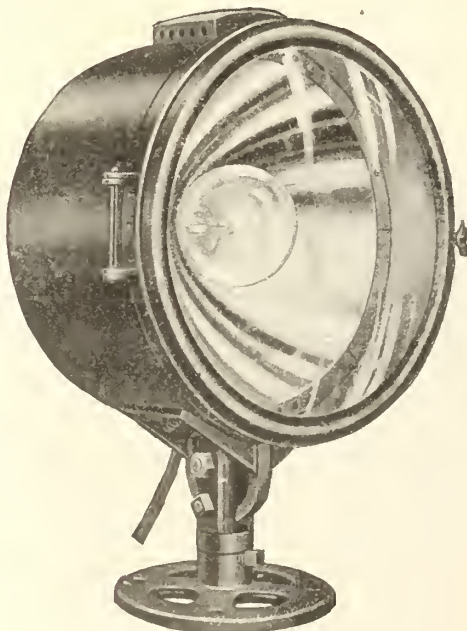
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Type P F L-1412



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*are strong in  
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and service"*

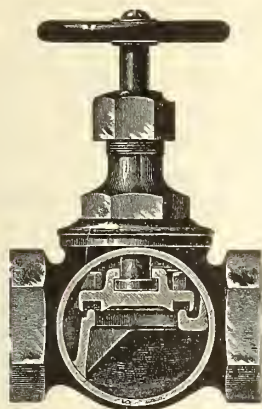
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In design they are very simple, containing few parts and all these interchangeable.

They are conservatively made; are heavier than the corresponding standard and heavy weights.

**The Renewable Disc is the most effective ever produced.** It consists of a recessed brass disc into which is spun a specially prepared Bakelite ring.

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The valve stems are packed with "Palmetto Twist."

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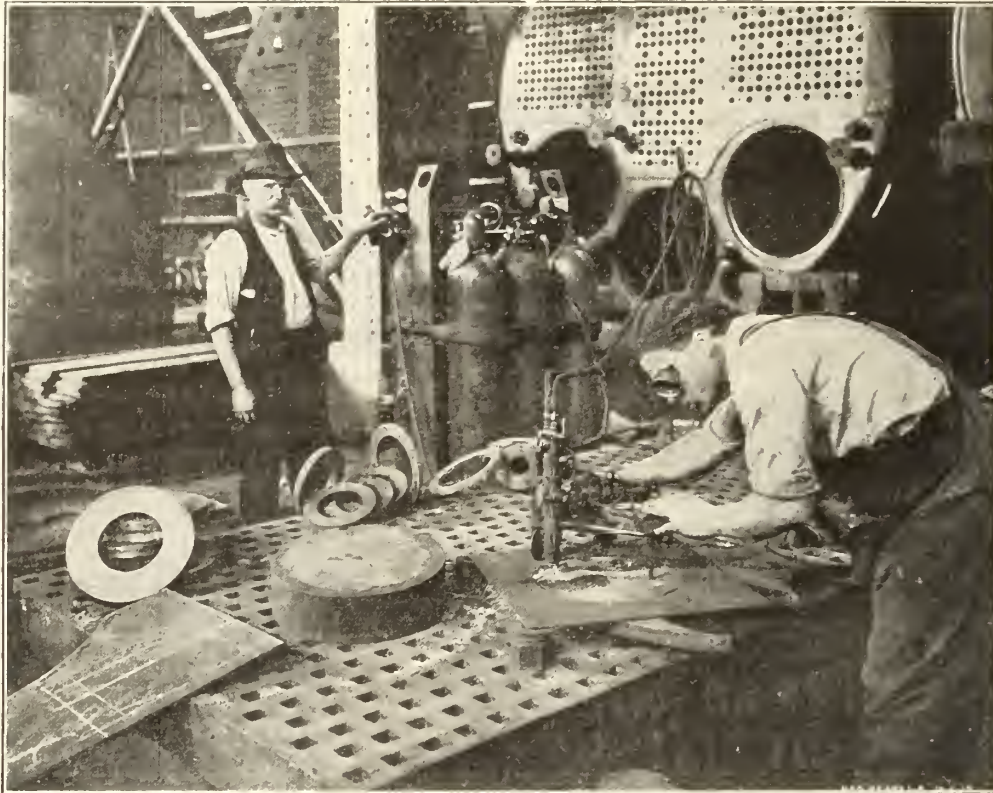


WILL  
LAST AD.



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has never been so fully demonstrated as during the past year of government preparations and demands upon the foundries, steel mills, munition plants, and the entire metal-working industry, and particularly in the great shipbuilding program.



The Radiograph, an exclusive Davis-Bournonville development for mechanical cutting with the Oxy-Acetylene or Oxy-Hydrogen flame, in the New York Shipbuilding yard, being used for circular cutting of steel plate. Note the true and finished cut and the thicknesses of the several pieces.—Photo by New York Shipbuilding Corp.

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Assets	17,268,471.46
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Profits Paid Policyholders	248,857.65
Total Payments to Policyholders	1,574,291.23

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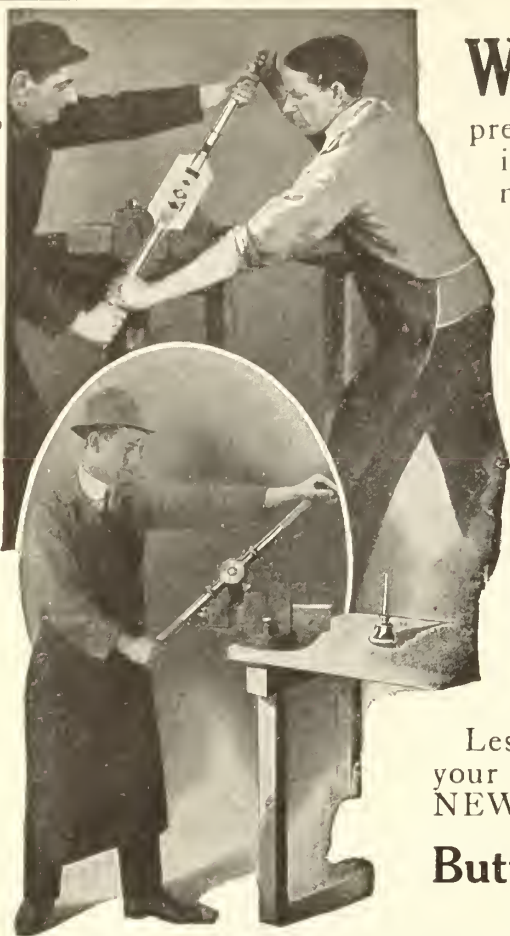
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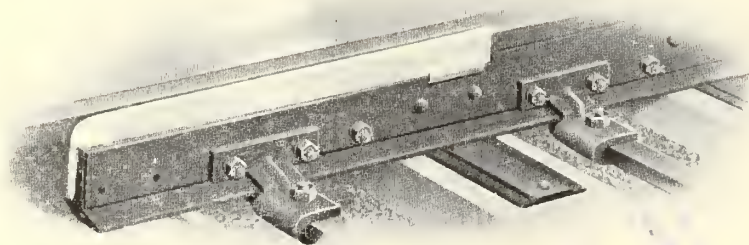
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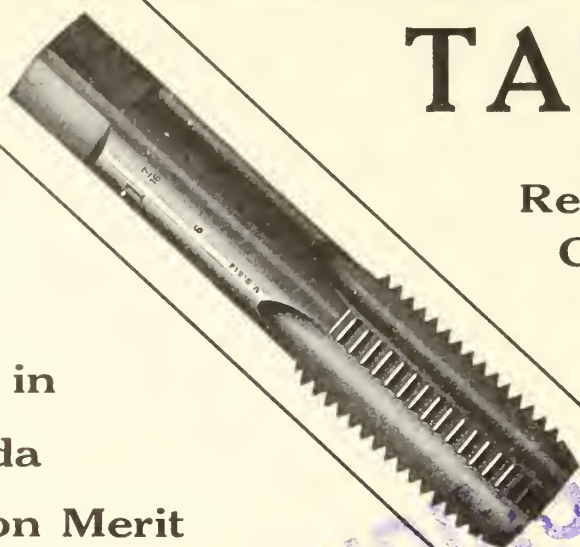
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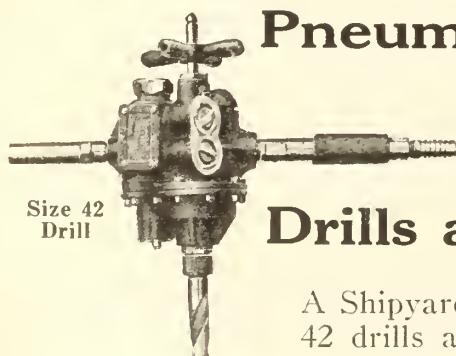
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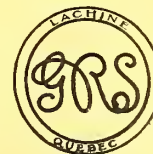
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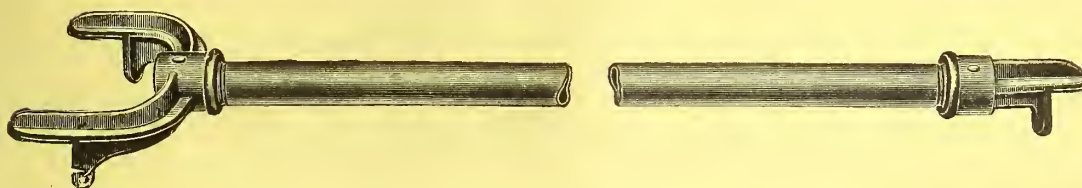
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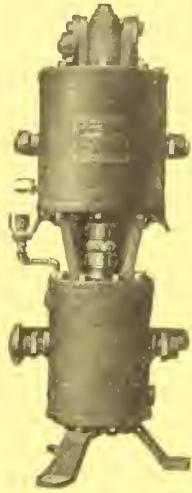
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Office and Works, Ontario Street East, MONTREAL



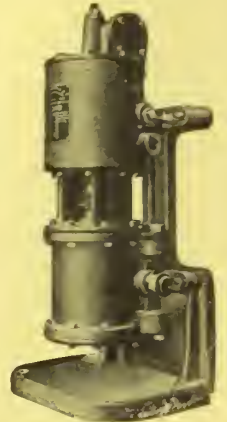
A Simple, yet Reliable Air Compressing Plant, is easy to obtain by installing—

## Westinghouse Steam-Driven Air Compressors



Portable Compressor  
for High Delivery  
Air Pressure.

They are designed with ample proportion of all wearing parts, insuring durability and low maintenance, and they occupy a minimum of space. They can be installed anywhere without any prepared foundation; or they can be mounted direct on a boiler, a post, column or wall: when desired a movable stand is provided. These compressors are the accepted standard for air-brake systems, which is a sufficient guarantee of absolute reliability.



Compressor on Stand

**Canadian Westinghouse Company, Limited, Hamilton, Ontario**

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT. WILLIAM, Cuthbertson Blk. WINNIPEG, 158 Portage Ave. E. EDMONTON, 211 McLeod Bldg. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg.

ESTABLISHED 1860

Sole Canadian Rights  
to Manufacture the  
"HYDE"

Anchor-  
Windlasses

Steering-  
Engines

Cargo-  
Winches

Which have stood the  
test of 50 YEARS



**PROPELLER  
WHEELS**

Largest Stock in  
Canada

**STEEL  
CASTINGS**

Cut Shows Largest Solid Propeller Ever Made in Canada.

Manufactured by

**The WM. KENNEDY & SONS, Ltd., Owen Sound, Ont.**





## A Good Coal Storage System

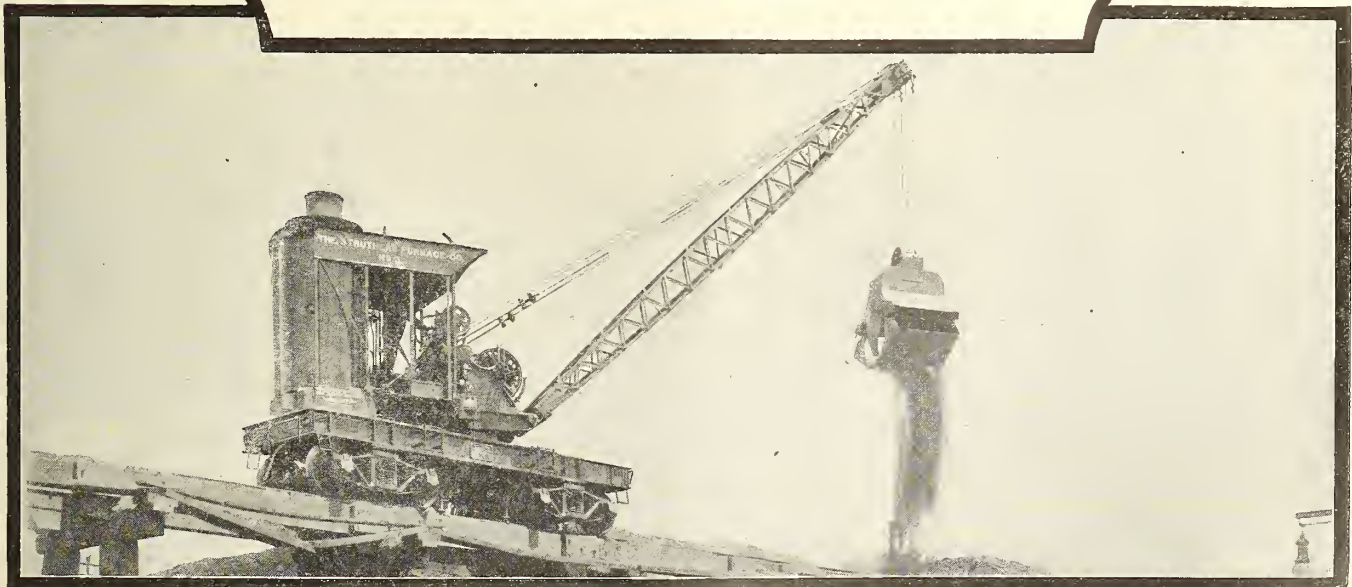
The Detroit Edison Company handle their storage coal with a number of Brownhoist Locomotive Cranes. Their yard is shown below. The tracks are so laid that every bit of ground can be reached by the cranes and any particular grade of coal can be reached quickly. The coal is piled 15 to 20 ft. high, which permits a large storage supply. The top view shows two Brownhoist Cranes with Brownhoist Buckets loading a car to be taken into the plant. On this class of work each crane will handle 90 to 100 tons per hour. Besides handling the coal the cranes do the switching work and other hoisting around the plant.

Brownhoist Cranes were chosen for this work because they are fast, safe and can be relied upon to work continuously. When locomotive cranes are used for this work, you can easily understand that only the best should be used. Breakdowns are disastrous. The Brownhoist may cost more, but is worth it.

### The Brown Hoisting Machinery Company Cleveland, Ohio, U. S. A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, Etc.,  
as well as Smaller Cranes and Hoists.

Branch Offices in New York, Pittsburgh, Chicago, San Francisco, and  
(Portland, Ore., Colby Eng'r. Co.).





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## LIMITED

**MECHANICAL DEVICES**

BAKER LOCOMOTIVE VALVE GEAR  
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O'MALLEY-BEAIR  
MULTIPLATE VALVES  
HUNT-SPILLER GUN IRON  
KING METALLIC PACKING  
HENRY GREASE CUP





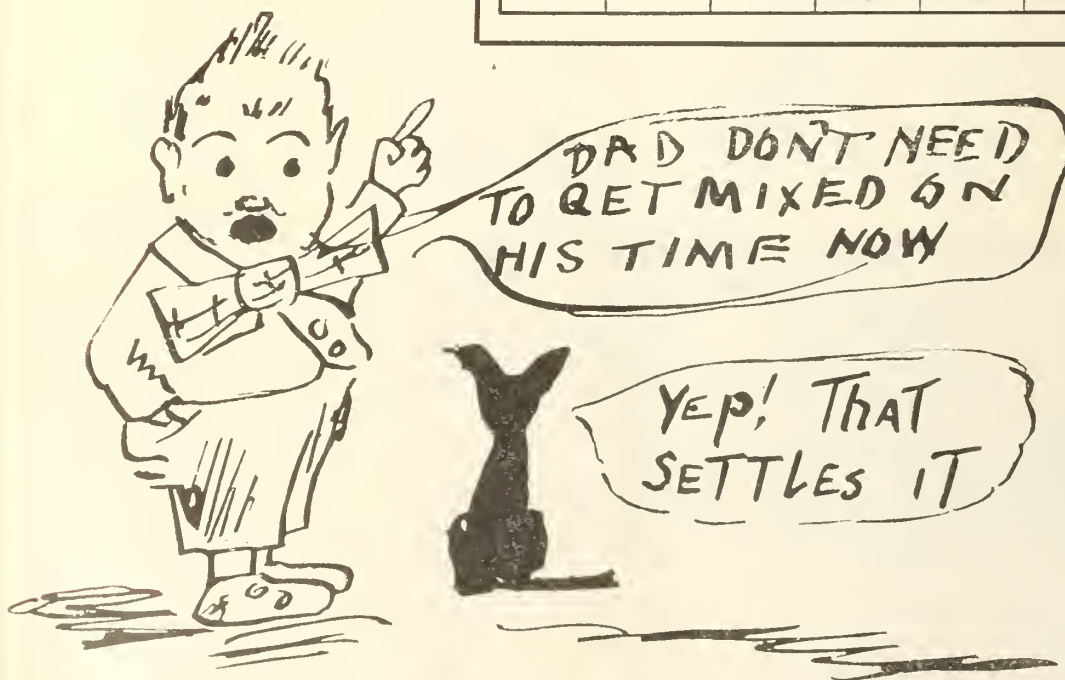
TORONTO MONTREAL WINNIPEG

**SUPPLIES**

FORSTER LOCOMOTIVE CEMENT  
SIMPLEX CAR CLEANER  
ANCHOR PACKINGS  
CANUCK FRONT END PAINT  
BRUBAKER TAPS & REAMERS  
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HOUGHTON LINES  
VIM BELTING & PACKINGS  
OILS, GREASES & CASE HARDENERS

**1918                      APRIL                      1918**

Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
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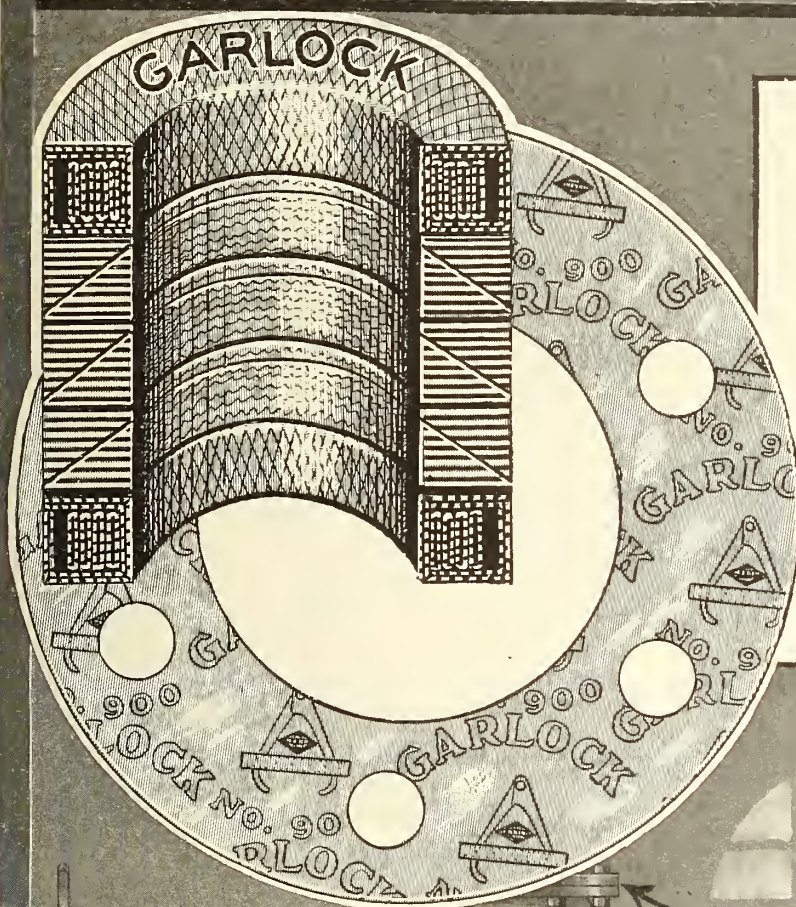


We will send one of these Calendars on request.

It will remind you that time flies but Canuck Supplies stay with the job.



# GARLOCK PACKINGS



## Pointers on a Well Packed Engine

For high pressure piston rods and valve stems, use Garlock No. 200.

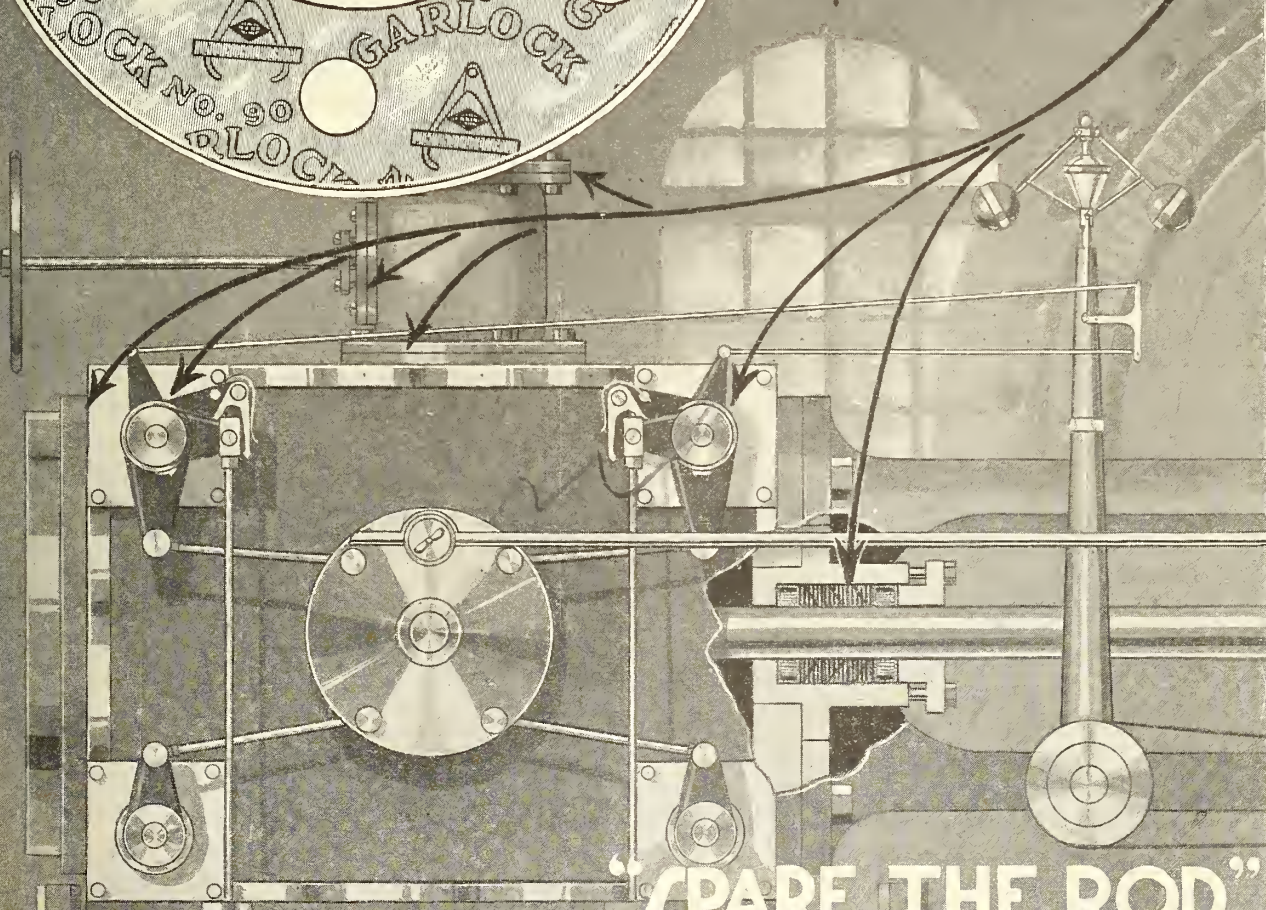
For medium pressure piston rods and valve stems, use Garlock No. 446.

For cylinder head, flange and other joints, use gaskets cut from Garlock No. 900 Sheet (No. 950).

**The Garlock Packing Co.**

Hamilton, Ontario

Branches in Principal Cities



**"SPARE THE ROD"**



# GALENA OILS

HAVE NO EQUAL IN  
QUALITY, EFFICIENCY and ECONOMY

SOLE MANUFACTURERS OF  
Celebrated Galena Coach, Engine and Car Oils  
*LUBRICATION ON A GUARANTEED BASIS*

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ELECTRIC RAILWAY LUBRICATION  
A SPECIALTY

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Perfection Valve and Signal Oils

*Galena Railway Safety Oil*—Made especially for use in headlights, marker and classification lamps.

*Galena Long Time Burner Oil*—For use in switch and semaphore lamps, and all lamps for long time burning, avoiding smoked and cracked chimneys and crusted wicks.

*TESTS AND CORRESPONDENCE SOLICITED*

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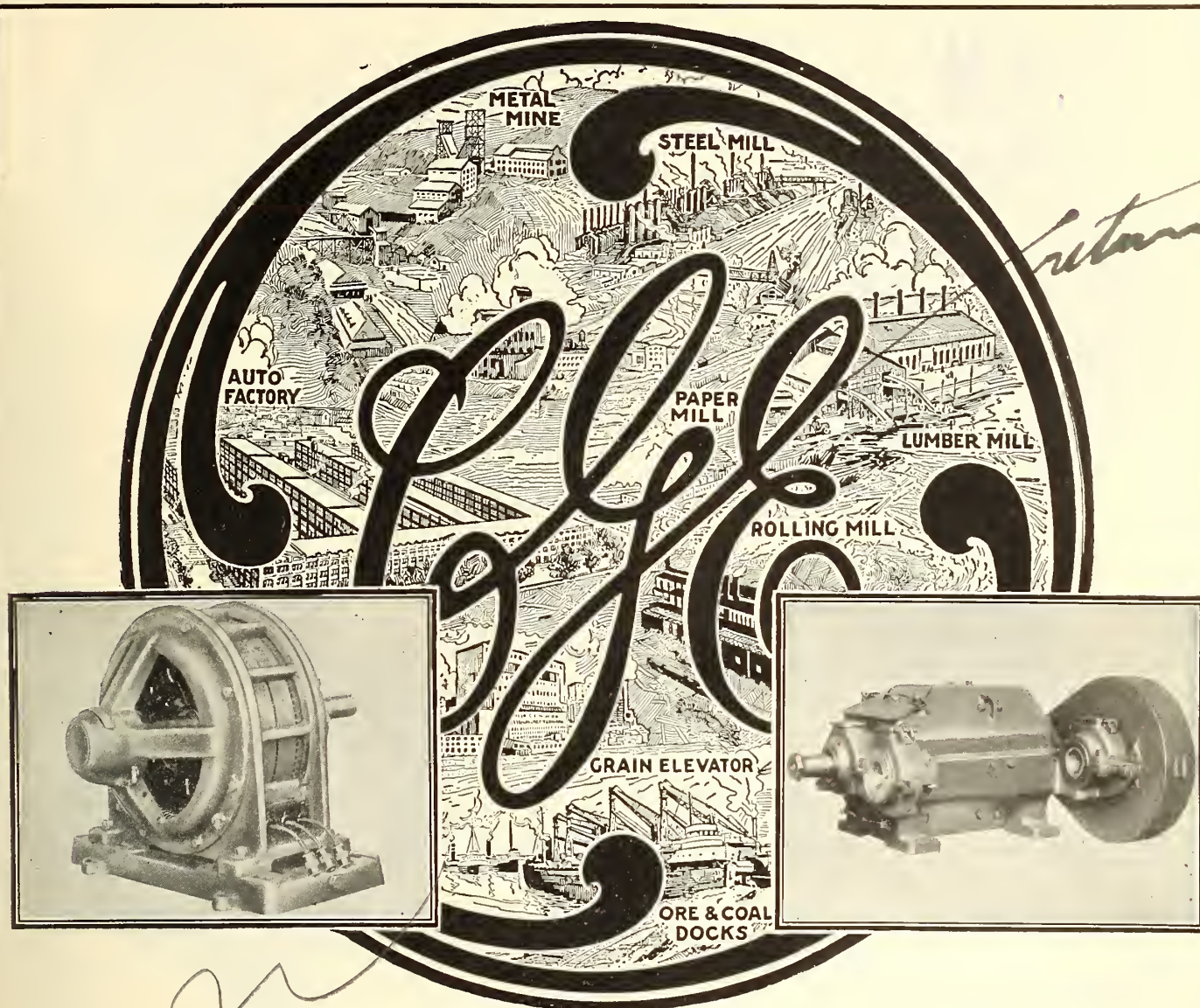
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Franklin, Pa., and Toronto, Ont.

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Canadian Representative — Robert McVicar, 603 Shaughnessy Bldg., Montreal, Que.





# Speed up with Electric Power

*C-G-E Motors and Control increase production and reduce maintenance*

There are many ways in which modern industry has been speeded up by putting electric power to work in the right place.

In railway machine shops electric motors insure increased efficiency and output and decreased operating expenses. The polyphase induction motor is particularly recommended for grain elevators as it has no commutator and there is no sparking to be provided against.

Contractors find electric drive faster, more elastic and cheaper than any other for hoists, pumps, concrete mixers, cableways and other equipment.

On the left is shown the standard C-G-E induction motor for general purposes. The C-G-E mill type motor, on the right, is specially designed for the severe service of steel mills, but is equally applicable to crane, shovel, bridge and other heavy duty.

Any problem involving the use of power can be simplified by the application of electricity. The Canadian General Electric Company is well equipped to lend valuable assistance in working out such problems and is glad to co-operate with contractors, manufacturers and engineers in every possible way.

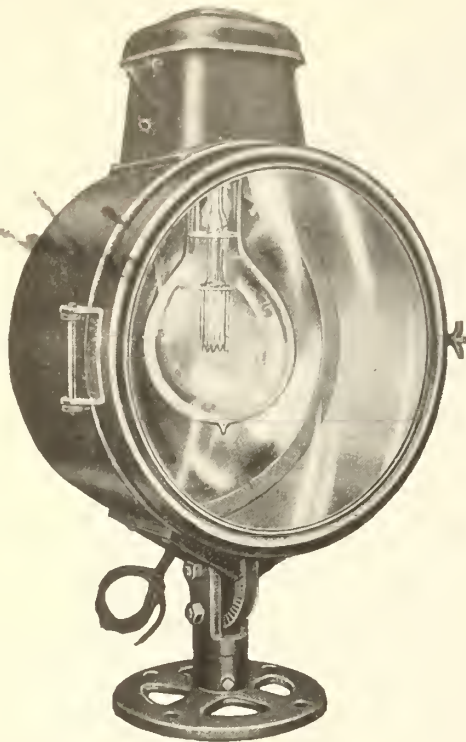
## C-G-E Motor Drive

*For further particulars write to our nearest office*

# CANADIAN GENERAL ELECTRIC CO. LIMITED

Head Office: Toronto. Sales Offices: Montreal, Halifax, Sydney, Ottawa, Cobalt, South Porcupine, London, Winnipeg, Calgary, Edmonton, Nelson and Vancouver.





Type F L-1419

*And now, the whole world  
can be lighted with these  
most highly developed and  
most efficient projectors—*

**“Golden Glow”**  
**“Crystal Mirror”**

These flood-lighting projectors are equipped with either “Golden Glow” or “Crystal Mirror” reflectors.

“Golden Glow” light is of a rich, golden color and a light in which the eye works with greatest efficiency.

Crystal Light is a white, brilliant light and is used mostly for spectacular work.

The reflectors used in either types are the most highly developed and most efficient reflectors ever developed for this service; being made of mirrored glass.

These projectors are made in many different types and for lamps of all practical wattages.

Write for complete catalog No. 128.

## Electric Service Supplies Co.

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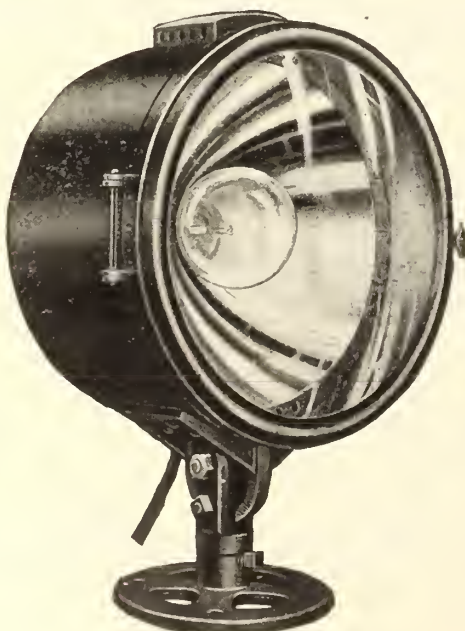
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CANADIAN DISTRIBUTORS

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Lyman Tube Bldg.

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Type F L-1412



Type P F L-1412

WILL  
LAST

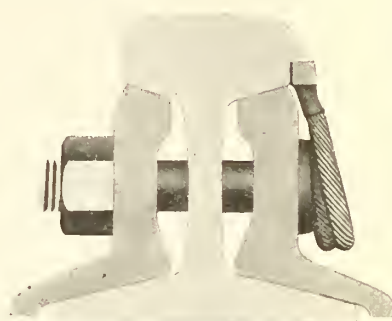




# Easy to Make Every Job Perfect with *O-B Gas-Weld Bonds*

□ The welder can see what he is doing all the time when he applies an O-B Gas-Weld Bond. He watches process from beginning to end and has complete control of it at every stage. It is easy to get it right. With ordinary care every weld is a good one. *Special skill is not required.*

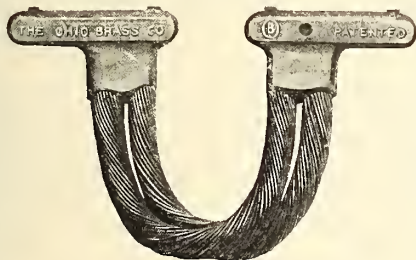
O-B Gas-Weld Bonds have exclusive features which are essential if the full benefit is to be obtained from the oxy-acetylene process.



Section of rail with O-B Gas-Weld Bond installed. Notice the beveled shape of the completed terminal after the filling-in metal has been added.

## *Exclusive Features of O-B Gas-Weld Bonds*

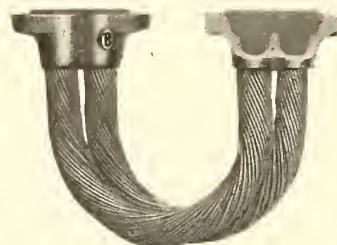
**BEVELED TERMINALS**—The welding surface of an O-B Gas-Weld Bond makes a right angle with the rail. The weld is built up, in plain sight, so it tapers toward the head of the rail. Thus the finished bond terminal is of beveled shape immune from damage by traffic.



Type G.W.  
(All Copper Terminal)

**GAS VENTS**—When O-B Gas-Weld Bonds are in place before welding, there are gas vents between bond and rail. The gas escapes through these vents and permits a solid homogeneous weld free from pockets which would weaken its structure.

*Send for Booklet.*

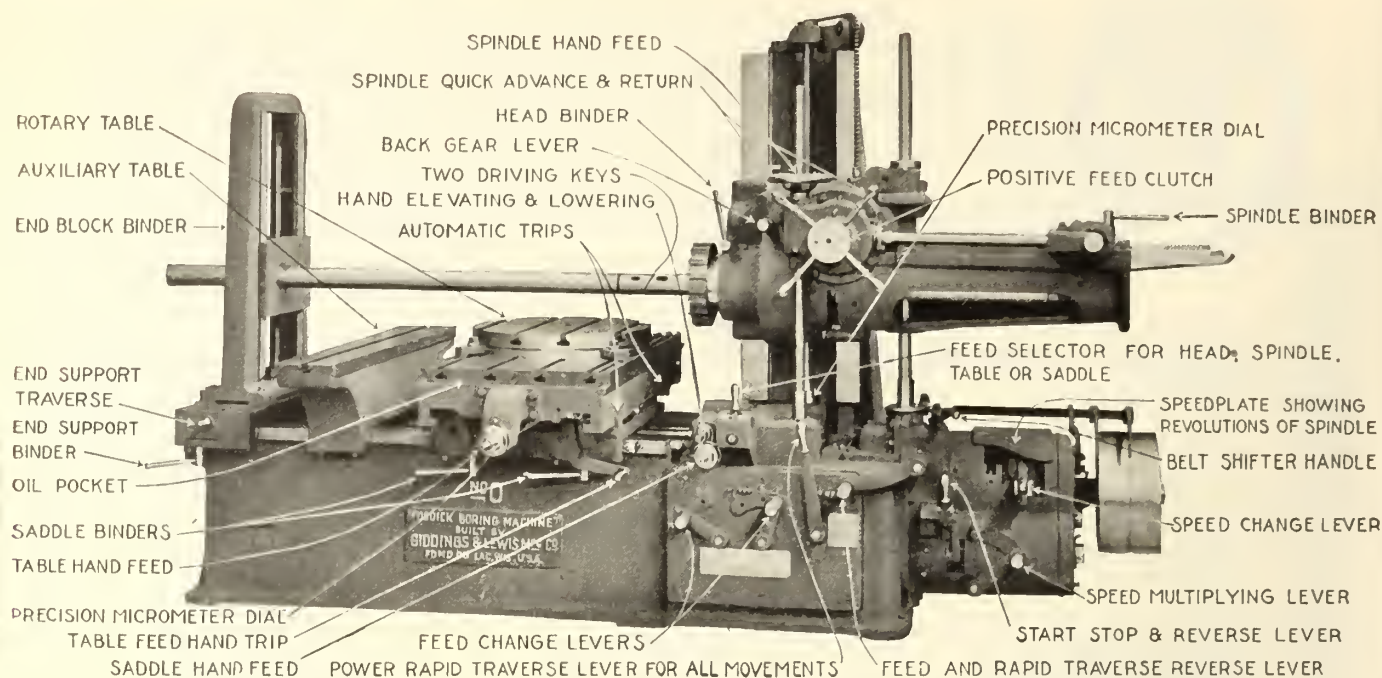


Type S.T.  
(Steel Armored Terminal)  
Right terminal sectioned to show  
how copper is headed over.  
Installation Process Patented in Canada

## The Ohio Brass Company Mansfield, Ohio

Examine an O-B Gas-Weld Bond closely. Notice how well and smoothly it is finished. Rather a minor thing, perhaps, but nevertheless a true indication of the attention to manufacturing detail which helps to give O-B Bonds their high quality.





## Horizontal Boring, Drilling and Milling Machine FOSDICK No. 0.

**Specifications:** This Fosdick No. 0 Horizontal Boring, Drilling and Milling Machine has  $3\frac{1}{8}$  in. spindle bored to fit No. 5 Morse Taper. The spindle traverse is 26 in. and the maximum distance from its center to the table is 26 in. The distance from the face of the table to the boring bar support is  $60\frac{1}{2}$  in. The cross travel to table is 30 in. and longitudinal traverse to table is 32 in.

There are 16 spindle speeds in each direction, ranging from 12 to 225. The number of feeds in all directions is 16, ranging from .004 in. to .260 in.

**The moving parts are incased and a safety friction device, adjustable from the outside, prevents accidents. The control is centralized and all levers are provided with latches to prevent chattering on heavy work.**

**Attachments:** When required we can furnish a plain revolving table, also a revolving table with worm movement—either of these graduated to half degrees an auxiliary table for work too large for the regular table, boring bars up to  $3\frac{1}{8}$  in. diameter, and a facing attachment which will face from zero to 18 in. diameter.

*For further information and quotations on this or any other manufacturing equipment address our nearest house.*

## The Canadian Fairbanks-Morse Co., Limited

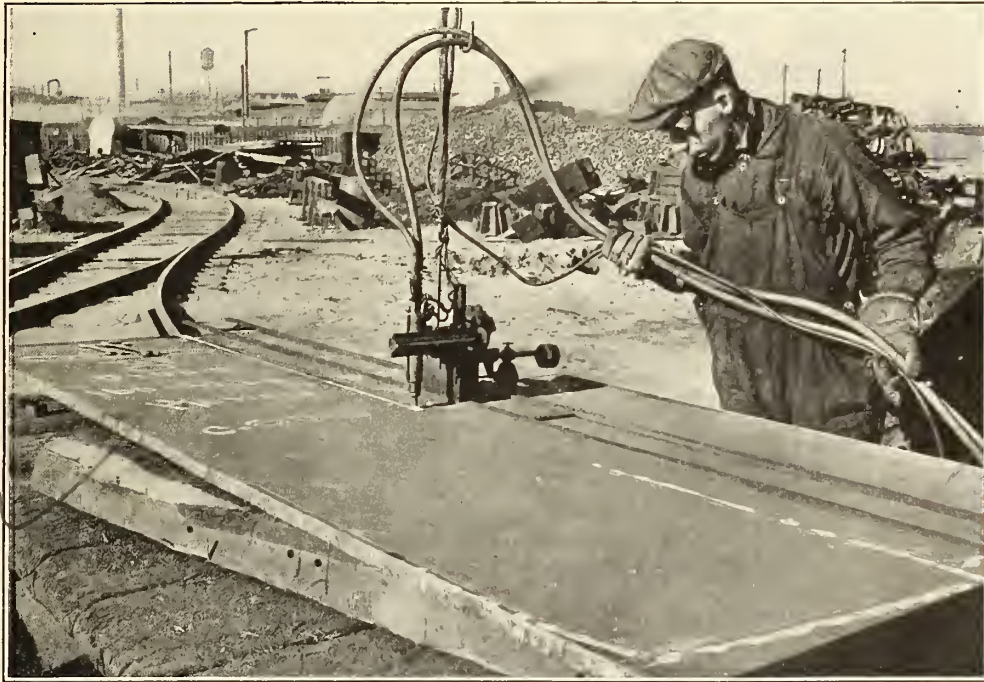
*"Canada's Departmental House for Mechanical Goods"*

St. John,	Quebec,	Montreal,	Ottawa,	Toronto,	Hamilton	Windsor,
Winnipeg,	Saskatoon,	Calgary,	Vancouver.	Victoria.		



## The Value of Oxy-Acetylene And Davis-Bournonville Apparatus

has never been so fully demonstrated as during the past year of government preparations and demands upon the foundries, steel mills, munition plants and the entire metal-working industry, and particularly in the great shipbuilding program.



The Radiagraph, an exclusive Davis-Bournonville development for mechanical cutting with the oxy-acetylene or oxy-hydrogen flame, employed for cutting steel plate in the New York Shipbuilding Yard. Photo by New York Shipbuilding Corp'n.

Exclusive developments in mechanical cutting and welding with Oxy-Acetylene and Oxy-Hydrogen have been of invaluable assistance to metal workers, coupled with highest efficiency in results and lowest operating cost. The Radiagraph cuts from  $\frac{1}{2}$ -in. to 20-in. steel plate, in straight lines or circles. The Oxygraph cuts in any direction, according to pattern or drawing, along straight lines, curves or sharp angles. Speed from 3 to 18 inches per minute according to thickness.

"Davis Apparatus" has been continuously and effectively developed from the time the company brought the positive, independent pressure system of oxy-acetylene welding and cutting to America ten years ago, and is backed by the longest practical experience, greatest development and widest application, providing portable hand welding and cutting outfits or the most complete installations with acetylene and oxygen and hydrogen producing and compressing plants.

### Davis-Bournonville Company

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**General Offices, Jersey City, N.J.**

Gov't Sales Dept., 412 Colorado Bldg., Washington, D.C.

**Carter Welding Co., Toronto, Ont.**

**General Dealers**

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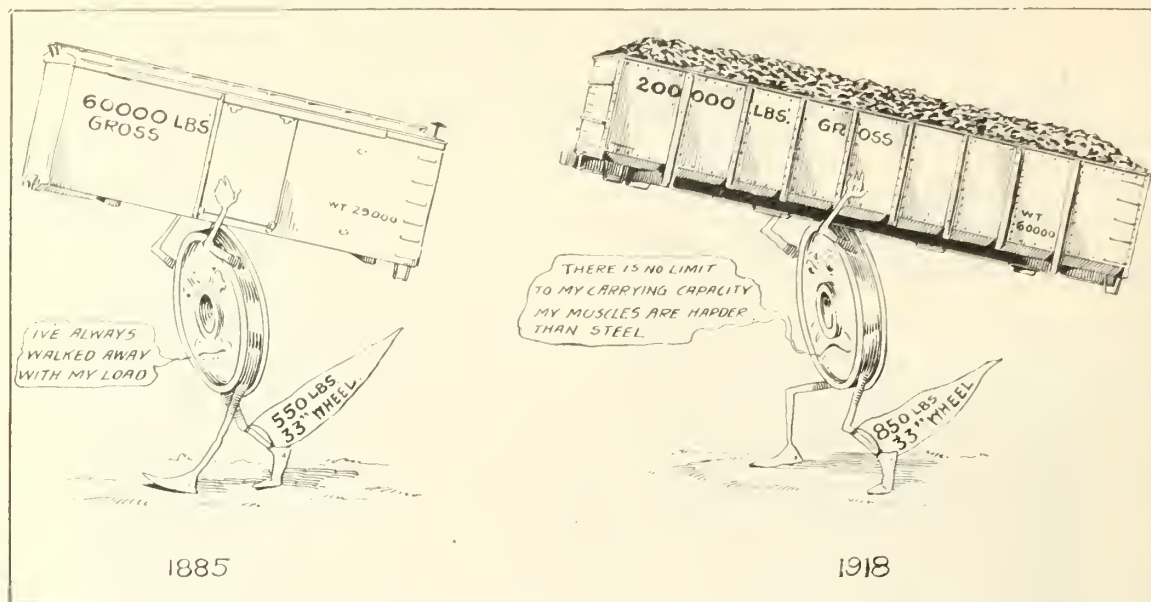
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*IT'S THE CHILLED IRON CAR WHEEL THAT'S CARRYING THE FREIGHT OF THE NATION.*

## The Wonderful Single Service Chilled Iron Wheel

There is no metal used for car wheel purposes that possesses the BEARING POWER of Chilled Iron.

The loads that Chilled Iron wheels will carry are only limited by the carrying capacity of the rail.

The present type of rail will carry about 30,000 lbs. per wheel.

Chilled Iron will carry 200,000 lbs. per wheel without any evidence of distortion of Metal, because Chilled Iron will not crush or flow under heavy loads.

25,000,000 Chilled Iron wheels now running.

### Association of Manufacturers of Chilled Car Wheels

Representing Fifty Wheel Foundries Located Throughout the United States and Canada—  
Capacity 20,000 Car Wheels Per Day.

1228 McCormick Building, Chicago





# **GENERAL RAILWAY SIGNAL COMPANY**

## **OF CANADA LIMITED**



Railway Operating Engineers, Manufacturers and Contractors  
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling  
Electric Interlocking

Electric  
Interlocking

Mechanical  
Interlocking

Highway  
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A-P-B. Automatic  
Block Signals for  
Single Track

A-C. and D-C.  
Automatic Block  
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Double Track

### **Advantages of Absolute-Permissive Block Signaling (A-P-B)**

Block for opposing movements is from siding to siding.

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Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

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**Head Office and Works**  
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Steel poles for Railway, Light and Power Purposes. Outdoor Type Substations.

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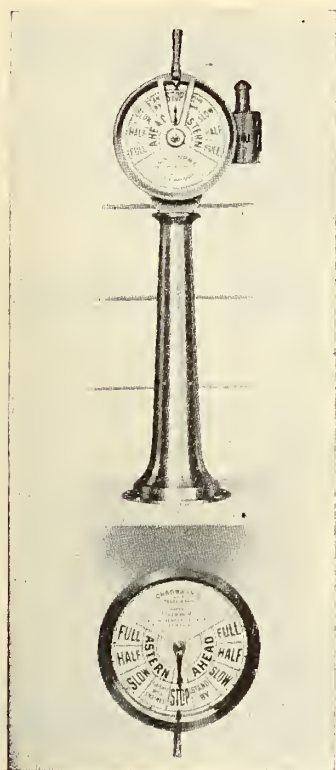
Trolley and Catenary Construction Material.

We also handle electric passenger, freight, and express cars and locomotives of all types and descriptions.

Keep this list before you whenever you are in the market for equipment and supplies.

All engineering service without obligation. List will be continued in next issue.



*Made in Canada*

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Telegraphs for Engine, Twin  
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and Docking.

Engine Room Indicators (Speed)

Engine Counters

Chadburn's (Ship) Telegraph Co'y, Ltd.  
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*Sole Canadian Agents*

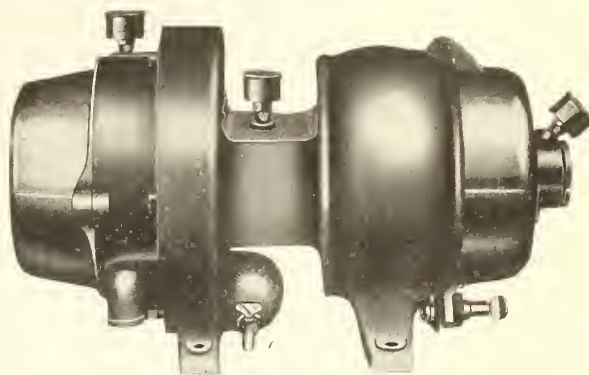
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## The "Taynold" Incandescent Electric Headlight

*Made in Canada*

An Incandescent Headlight that complies with every railroad requirement in every province of Canada. A headlight that has proved efficient and economical.

# Taylor & Arnold, Limited

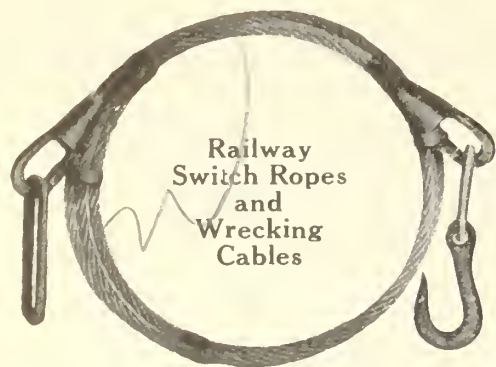
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**"DOMINION" Wire Rope**

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## General Service Cars

—Otis Dump Cars—

Built in  
Box  
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Stock and  
Ore Cars



For  
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The HART-OTIS CAR CO., Limited, MONTREAL

—SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA—

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Blocks, Rigging Screws, Winches,  
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# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

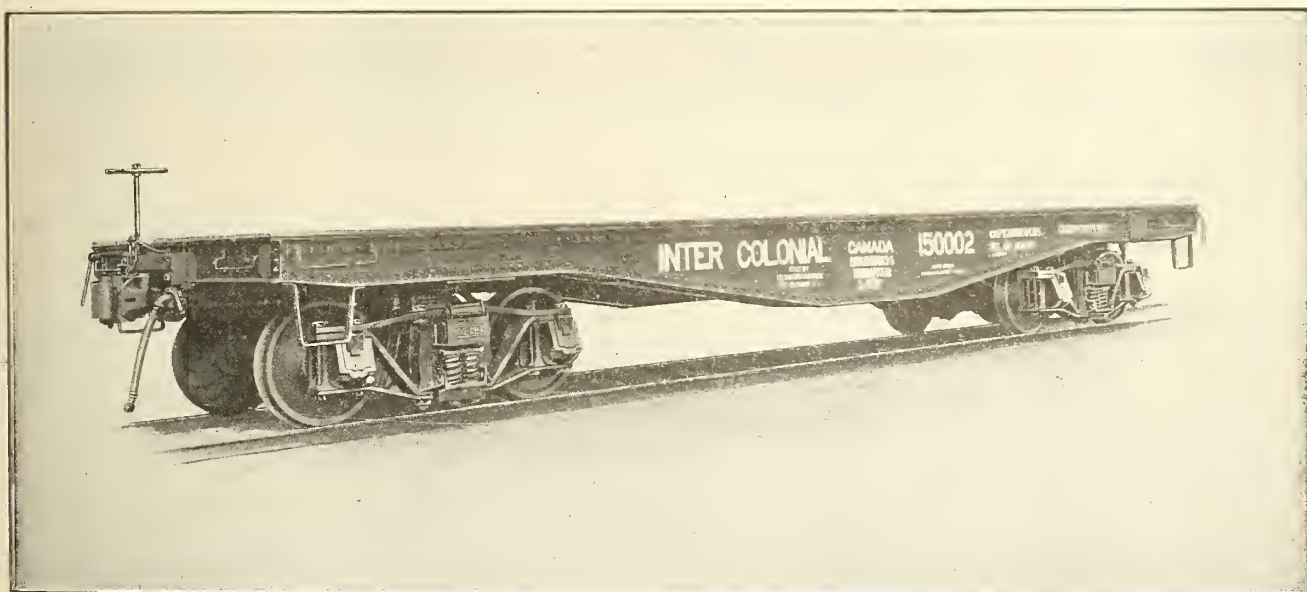
Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

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**Head Office - - - New Glasgow, Nova Scotia**

**Western Sales Office, Room 14, Windsor Hotel, Montreal**



75 on Special Pit Car For Canadian Government Railways.

## FLAT CARS, CABOOSES AND MINE CARS

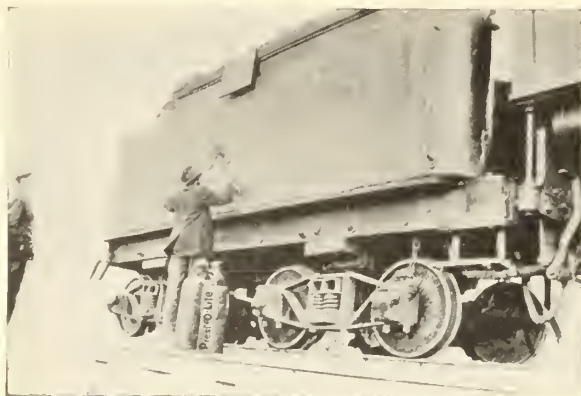
We make a specialty of Flat Cars, Caboose and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

## Eastern Car Company, Limited

**General Offices and Works, New Glasgow, N.S.**

**Montreal Office, Room 14 Windsor Hotel**





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**T**HIS illustration shows an operator repairing a leaky tank car right on the track, at a trifling expense, by the Prest-O-Lite Process of Oxy-Acetylene Welding. Thousands of Railroads, Mines, Factories and Machine Shops have adopted this process, and are saving hundreds of thousands of dollars annually.

Costly tie-ups are avoided—valuable castings and machine parts are saved from the scrap pile—and many economies and improvements are effected both in repairing and manufacturing.

## *Prest-O-Lite* PROCESS

employs both gases (acetylene and oxygen) in portable cylinders. Prest-O-Lite Dissolved Acetylene (ready-made carbide gas) is backed by Prest-O-Lite Service, which insures prompt exchange of full cylinders for empty ones. Provides dry, purified gas, insuring better welds, quicker work and lower operating cost.

Apparatus consists of an equal pressure blow pipe, automatic regulators and gauges, and all necessary equipment. Adaptable for oxy-acetylene cutting by the addition of special cutting blow pipe.

Thorough instructions are furnished free to every user of Prest-O-Lite Dissolved Acetylene. Any average workman who understands metals can learn the welding process quickly and easily.

We will gladly send illustrated literature and interesting data showing actual instances of savings made by others. It may suggest valuable ideas to you. Write for it. Address Dept. C-109.

### The Prest-O-Lite Co., Inc.

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## ADD

**Dearborn Treatment to Your Boiler Feed Water**

## SUBTRACT

**Scale—Corrosion—Pitting—Foaming**

## RESULT

**More Power**

More Power with less fuel. No delays from foaming or leaking. Longer life of flues and fireboxes. Longer Washout periods. Fewer repairs.

You can add Dearborn Treatment to the tender, or direct to boiler.

Made to suit water conditions on your line shown by analysis. Gallon samples of the waters required.

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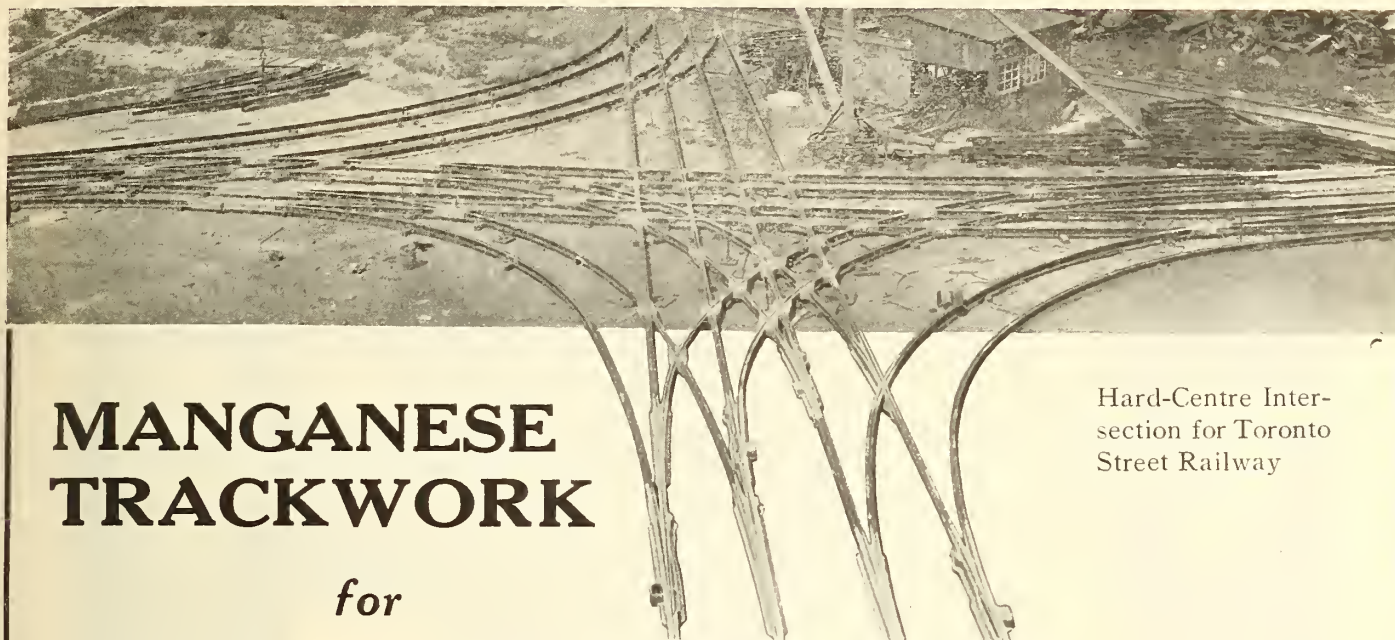
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or

## The Dearborn Chemical Company of Canada, Limited

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# MANGANESE TRACKWORK

*for*

*Steam and Electric Railways*

Hard-Centre Inter-  
section for Toronto  
Street Railway

## CANADIAN STEEL FOUNDRIES, Limited

General Offices :—  
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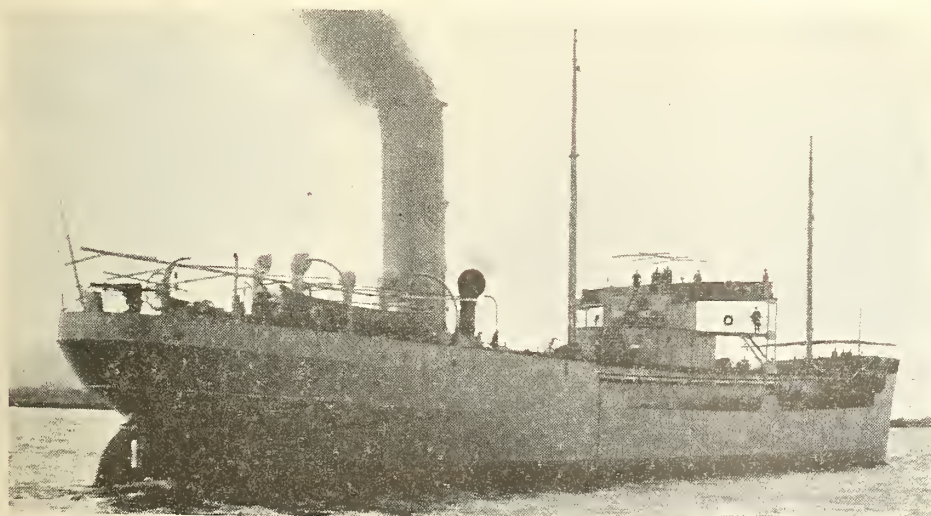
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**CLAM SHELLS**

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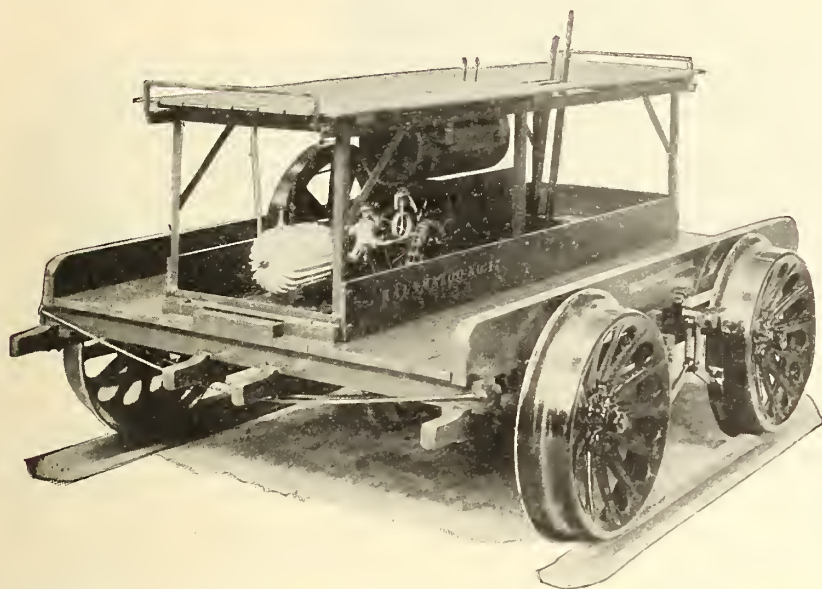
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For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

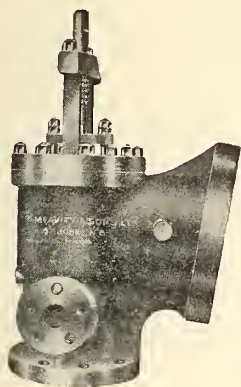
We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

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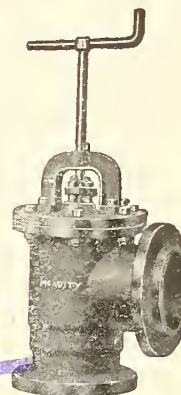
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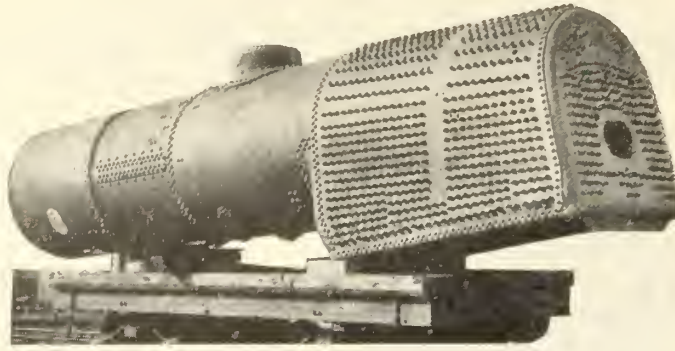
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That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

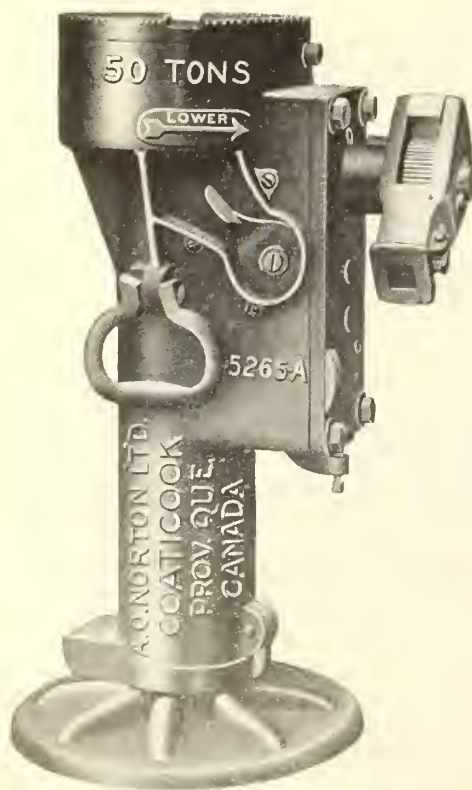
The Flexibility in the bolt serves to accommodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefulness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintenance.

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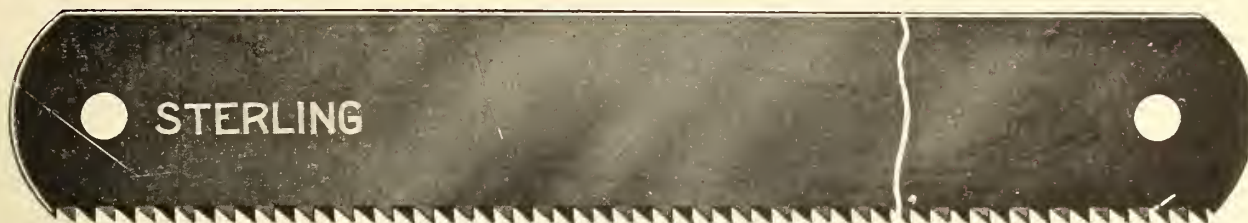
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Do the work uniformly.

Will reach places you cannot get at with picks and bars.

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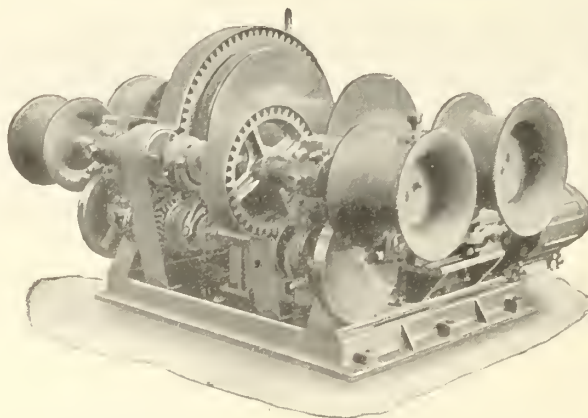




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Are now engaged  
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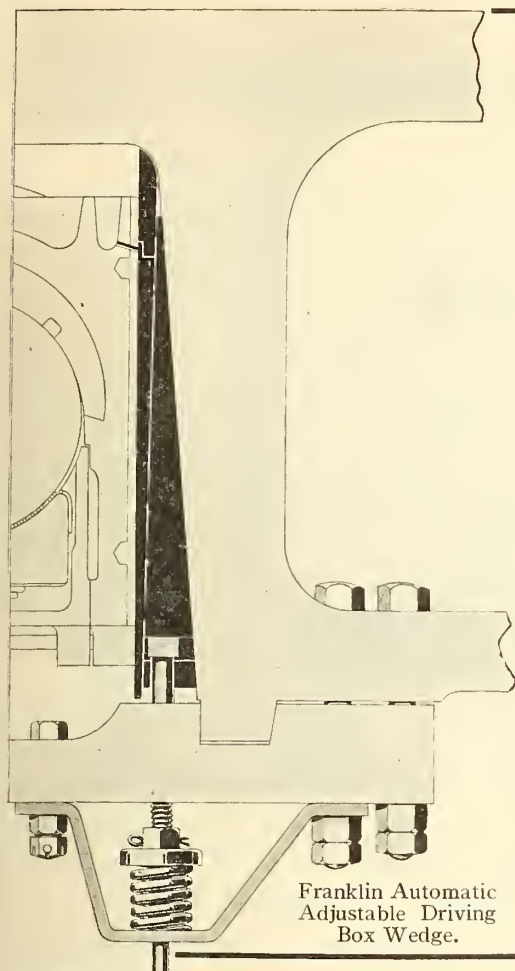
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Thermit offers the only sure and reliable repair for locomotive frames and other heavy sections.

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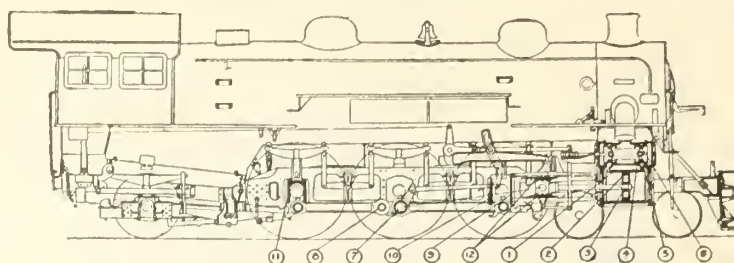
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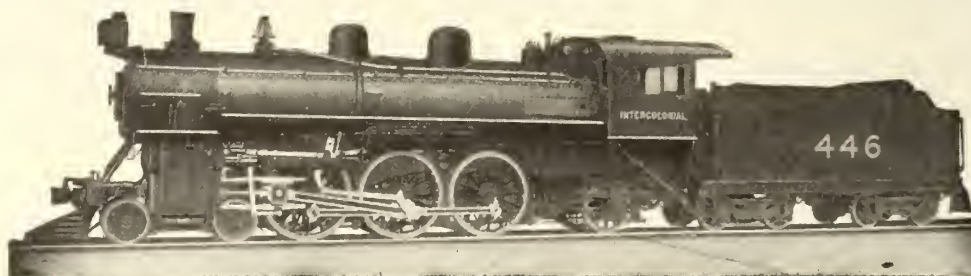
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Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

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MARINE RAILWAY, CAPACITY 2500 TONS DEAD WEIGHT

LARGER VESSELS DOCKED IN GRAVING DOCK, 480 FT. x 65 FT.

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World's Largest Varnish Makers  
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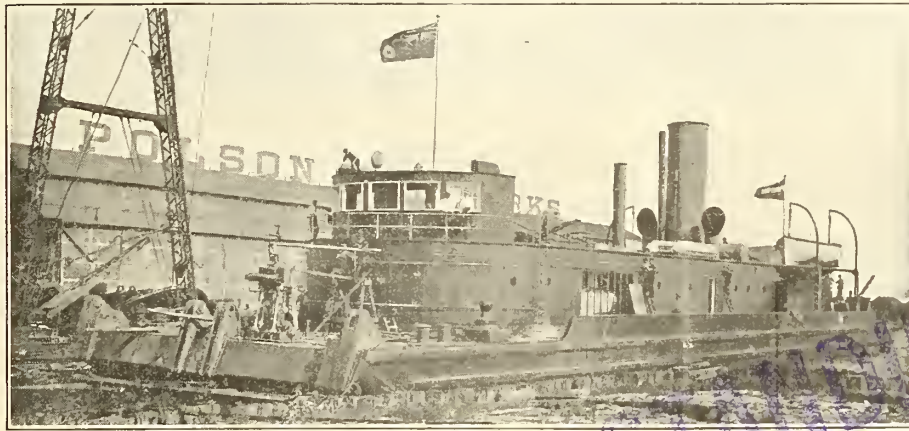
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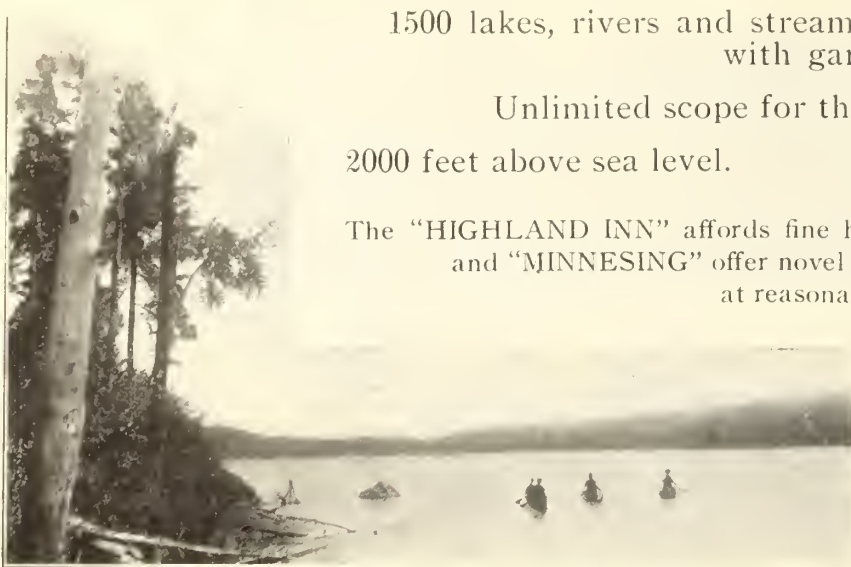
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**S.S. Angouleme  
4300-Ton  
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**Launched  
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**[Length Overall  
261 ft.**

**Breadth Moulded  
43 ft. 6 in.**

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Ten thousand miles of modernly equipped road traversing  
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And through lines or connections to all principal points  
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Makers of Base-Supported and 100% Rail Joints for Standard, Girder and Special Rail Sections. Also Joints for Frogs and Switches, Insulated Rail Joints and Step or Compromise Joints.

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More cargo space would mean much to you now.

When competition again becomes severe it may determine whether or not your ship can be operated at a profit.

High Superheat reduces fuel consumption 12 to 20%; it reduces the amount of fuel to be carried in bunkers. Revenue cargo space can be increased proportionately.

Our engineers are ready to tell you about it.

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Chilled Tread Cast Iron Car Wheels for All Services  
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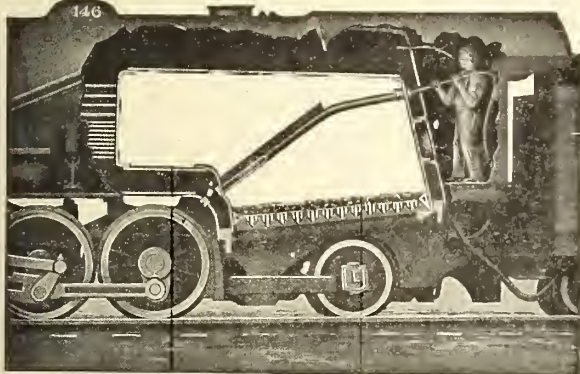
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Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

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**Staybolt and Engine Bolt Iron**—Quality and Service Unexcelled.

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**Locomotive Boiler and Superheater Tubes**—Seamless and Lapwelded.

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THE service to be gained from any rubber product depends largely upon the quality of the material and the excellence of the workmanship. That is why Dominion Rubber System products are outstanding. Only the best in material and workmanship is incorporated in the making of those products. That insures long service and life and proves a matter of no little economy to the buyer.

Over half a century of continuous manufacturing has taught the Dominion Rubber System how to produce qualities that will "stand up" under any circumstance, and, as a result, the products that carry the name and brand of the Dominion Rubber System are looked upon as the standard by which to judge qualities and values throughout Canada.

*For anything in Rubber, write to our nearest Branch, where prompt and intelligent attention will be given to all inquiries.*

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**Head Office - Montreal**

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# Canadian Railway and Marine World

April, 1918.

## Locomotive Maintenance and Repairs.

By E. R. Battley, Master Mechanic, G.T.R., Montreal.

Repairing and maintaining running repairs on locomotives are two of the great problems with which railways have to deal. On account of the abnormal conditions and the vast amount of freight waiting to be moved, it is essential that railways keep their locomotives in constant service, which means a special effort must be made by shop forces to complete repair work as quickly as possible. Due to the demand for locomotives in the allied countries, our locomotive builders cannot supply sufficient new ones for export and for home use, therefore it has been deemed advisable to ship a large part of the output abroad, using our present power to its capacity. By so doing we must expect the outlay for repairs will be in excess of that of former years. The wages paid today are high, and in the majority of repair shops, railways are forced to employ mechanics inexperienced in regard to railway work, which necessarily follows repairs take longer and the work requires closer supervision. For the past few years the Government has exercised considerable authority over the railways in regard to the building and maintenance of power, having made rules and regulations concerning standards, defects, etc., and having assigned inspectors to certain districts to see that rules are observed. While these laws added considerable extra work to most roads it has, no doubt, been the means of improving the power and prolonging the life as well. As previously stated, one of the great trials of all railways is to keep up the repairs on their motive power. To accomplish this, we must provide facilities for repairing and handling, at locomotive houses and general repair shops.

**Locomotive Houses.**—It is difficult to do quick work at terminals unless we provide proper facilities, such as suitable locomotive houses and equipment. The key to the power handling situation of the locomotive houses is the ashpit, therefore we must provide large pits, equipped with a sure and quick means of handling the accumulation of cinders. Ample room must be provided on both sides of the pit, so that in rush hours fires can be cleaned or dumped and locomotives moved along out of the way to await their turn on the turntable. If this space is not provided, and after a locomotive or two has been dumped, it means the work on the locomotives following is at a standstill until those ahead have been moved. Conditions of this kind cause ashpit gangs to be idle and at a busy terminal a large waiting list is the result.

In close relation to the ashpit is the turntable and shop leads. The former should be of rigid construction and power operated. The leads should be of sufficient length to accommodate outgoing locomotives, and provided with suitable crossovers and water cranes to facilitate the dispatching of power.

A valuable addition to any roundhouse is good machinery. A great mistake sometimes made by railways is filling up locomotive house machine shops with anti-

quated tools. When a machine job is required in a back shop it is usually a rush order, therefore speed and accuracy is required. If modern tools are used, you get what is desired without delay. All our terminals of importance have been equipped with portable oxy-acetylene welding and cutting outfits, and needless to say they have proved invaluable.

Organization is another valuable asset to the shop. One may have a splendid layout, good tools, etc., but without sys-

may mention an important item that contributes to shop efficiency, but which is sometimes treated lightly, and that is, cleanliness. We have found by experience, that in keeping our premises clean and tidy, better work is produced and time saved, as spare material can be quickly located. Accidents due to employees falling over old material are reduced to a minimum. In addition to these beneficial results, it looks well and gives one the impression that the foreman in charge is master of the situation.

During the busy season, when locomotives are at a premium, the cripples at roundhouses accumulate quickly, unless a close check is kept on the shipment of repair parts. We have a system of checking up and forwarding repair parts to out stations that has proved very satisfactory, and has been the means of keeping our locomotives in service during the past severe winter. Foremen at each station send a joint message to the road and shop master mechanics as soon as he finds he requires repair parts. In addition to this, he sends in a daily report of locomotives undergoing repairs which will take over 24 hours, stating when locomotive was taken out of service, what material is required and on whom ordered. This gives the master mechanic an excellent opportunity of keeping in close touch with the situation on his division. To ensure requisitions being filled promptly, and to avoid delays in shipment, or at transfer points, a material man is appointed by the road master mechanic. His duties are to check requisitions, receive telegrams for material, consult shop master mechanics and subordinates, as to when material can be secured, see that there is no delay in handling, also advise out stations on what train material is going forward so that he can be prepared to have it removed promptly on arrival.

General repair shops should be of sufficient size to care for the power assigned to the division and centrally located. When a locomotive is to be shopped and the nature of repairs is mainly controlled by the road master mechanic, any unusual repairs are decided upon, after a boiler inspection and hydrostatic test has been applied. After the locomotive has been stripped, the shop inspector makes out a final report and repairs are made accordingly. Accompanying each locomotive to the shop is the locomotive foreman's report of repairs, which forms the basis from which the shop master mechanic works.

There is approximately 10% of our power under repairs at all times, this is necessary to keep our locomotives in good condition, and also provides sufficient work in advance for the shop staff, who work entirely on the bonus system. Our output and bonus system are so closely related that in speaking of one it is necessary to mention the other. The subject of this paper being repairs, the bonus system will only be mentioned when necessary to show why we handle certain operations in certain ways.



*F.505*  
E. R. Battley  
Master Mechanic, Eastern Lines, Grand Trunk  
Railway.

tem, efficiency is reduced. We have found by arranging our locomotive house staff in special gangs good results have been obtained. These gangs are grouped as follows: passenger, freight and switch, air brake, spring and brake gear, rod and box packing, lighting up, and, last but not least, the boiler gang. The different gangs are controlled by chargemen, who report to the shop foreman.

Locomotive men upon arrival book the necessary work in a book provided for the purpose. A competent inspector also makes an examination of the locomotive and records defects found. The work is then copied by a man assigned to this work, who distributes the slips to the respective charge hands. When the work is completed, a notation is made in the report book on the opposite page to the one in which the engineer placed his report.

In dealing with locomotive houses, I



Our methods are practically the same over the entire system, but as the Stratford shop was the first to try this system, we will use it as an illustration. The repairs required are designated by a letter, which is in itself a symbol and indicates what kind of repairs are necessary, also approximately how many days the locomotive will be in the shop. The following are the letters used, with a brief explanation:

B.S.—Boiler to be converted to superheat and will be 24 working days in the shop. (Spare boiler and cylinders are ready before locomotive comes in.)

B.—New firebox to be applied. 21 working days allowed.

C.—Firebox will receive new half side and possibly new flue sheet. 21 working days allowed.

D.—Boiler to be retubed and machinery given a general repair. 18 working days allowed.

D.C.—Same as D, except new cylinder or cylinders will be applied. 21 working days allowed.

E.—Wheels removed, tires turned, boxes and rods repaired. 12 working days allowed.

L.—Light repairs such as replacing broken rods, light patch in firebox, or any work which locomotive house cannot conveniently handle.

S.—Specific repairs. Some special job which is really locomotive house work, but for some legitimate reason is handled in the main shop.

As each kind of repair is allowed a certain number of days in the shop, the list of locomotives turned out weekly has to bear a certain relationship to this, in order that output may be regular, both as to quantity and weight of repairs. The foremen meet in the master mechanic's office each Friday and incoming locomotives are assigned to their proper places on the outgoing list. A new list is issued each week. The locomotives are booked in, in such a manner that each week's output will represent about the same weight of repairs on the whole, although the number of locomotives may be more or less.

As space is limited, I cannot describe the methods as applied in all departments, but will take it for granted the various parts have been repaired and are in the erecting shop. This department was formerly handled with nine regular gangs, consisting of approximately 10 men per gang, controlled by a chargehand, who was responsible for three pits. In addition to the nine gangs we had three or four special gangs, such as shoe and wedge, guide bar, and steam pipe. Our regular pit gangs carried the locomotive through from the time it was stripped, with the exception of the detailed work above mentioned. Under this system we accomplished good work until our forces became depleted through enlistments, and upon looking carefully into the situation we found where a gang usually had five or six mechanics, it would probably have one or two, the remainder being unskilled. It was, therefore, necessary for us to meet the new conditions in order to keep up the repairs. To do this we re-arranged our men into special gangs, mainly to centralize our machinists on work that really required mechanics, and use the unskilled labor on the coarser work. With this arrangement, instead of a gang having three pits on which to work, they have the entire erecting shop, therefore delays were reduced to a minimum. The gangs were arranged as follows:

Stripping gang.—Strip engine complete, with the exception of mountings

and pipes. These are taken off by the strippers of the steam pipe department.

Frame gang.—Main frame applied and rebolted, front frames applying and rebolting complete (when cylinders are not off) back and front deck castings, waste sheet and cross tie casting. Furnace bearers back, front or side renewed or bolted, furnace bearer brackets on frame, friction casting and wedge, lining up boiler when locomotive is rebuilt when the original cylinders are used, steel running boards and brackets with all necessary studs.

Shoe and wedge gang.—Line up, mark off, machine and fit up all shoes and wedges.

Guide bar gang.—Set all guides, face all valve seats, apply steam chests and bore cylinders in erecting shop.

Brake and spring gear gang.—All brake and spring gear complete, fitting up and applying, including brake hangers, brackets, etc.

Motion gang.—Pistons, motion plate and motion plate knees, piston valves, cylinder covers and studs for same, rocker boxes, tumbling shaft and brackets, transmission bars, links, etc., eccentrics, valve rods and other necessary motion work.

Front end gang.—Buffer beams complete, draw casting, coupler and connections, hand railings and columns for same.

Steam pipe gang.—Stripping the mountings and pipes from locomotives and grind throttles, steam pipes, headers and units, and apply same complete.

Trimming gang.—Air pump and other air brake work, inspirators and all small jobs.

Cylinder gang.—Apply all new cylinders.

The foregoing covers practically all operations in the erecting shop. Other work, such as carpentering, tinsmithing and painting, is done by the respective departments.

One special feature of our bonus system, is the key to the success of that system; viz., the demonstrating end of the bonus department. The prices, set by demonstration when possible, are known to be fair and correct. The chief demonstrator and his assistants have charge of this work over the entire system, and travel continuously from shop to shop. These men do not worry a great deal about prices, as this has been efficiently handled by the bonus department of each shop, which sets the prices according to the peculiar conditions surrounding the different plants, but being our most expert men, they concentrate their efforts in bringing each department in all shops to a higher state of efficiency by transferring best methods, and, if necessary, men from one shop to another. As a result of this method, workmen are free from the worry of price cutting, therefore the standard of work has shown a steady improvement. This department also controls the method of applying the bonus system, with the result that the method of application is the same at all shops. It is needless to say the results obtained from this system have been highly satisfactory, and in spite of the unfavorable labor conditions, we have maintained repairs on our locomotives, and in addition to keeping up the ordinary repairs we have been able to convert 57 locomotives from saturated to superheated steam.

The foregoing paper was read before the Canadian Railway Club in Montreal recently.

The Canadian Ticket Agents' Association will hold its annual meeting at Buffalo, N.Y., Oct. 9.

## The Poor Stores Department.

A railway storekeeper writes as follows:—Canadian Railway and Marine World had the following in its February issue:

"Great Northern Ry.—The old frame building on Pender St., Vancouver, B.C., formerly used by the G.N.R. as a passenger station, and which has been closed since the opening of the new building on False Creek, is to be renovated and used for a stores building."

We do not know at this distance how important the G.N.R. stores at Vancouver may be, how many miles of line they must supply, how many and size of shops, etc. But even so, we ask ourselves, "How long, good Lord, how long?"

Since the first railway came into existence in America, with everything provided, except the place to store its supplies, the story has been the same. First the effort to sidestep the question of supply, then failing that, as they must, the makeshift. "It seems we cannot get along without a store. Here is an old building that cannot be used for anything else. Make that a store." And they do, and go on using it, and waste the value of several buildings.

I met a railway storekeeper at a convention some years ago and he showed me a photograph of his store building. It was an old log and board shanty, that the graders had left standing when they had finished their work. He also told me he was in trouble, as his people were after him about his stock figures, which figures showed that he had \$200 worth of supplies per mile of road, and his was a fairly busy road, though poor. He wanted to know what he should do, and I told him to go home and tell his people that they did not know as much about railway stores and stock figures as a dog knows about his father, and point out to them that some of the railways that were railways had good store buildings and their figures were \$1,600 worth of stock per mile of road, and that there was only one other road in America that could equal his figures, and it was about being sold out. I suppose he told them that, or words to that effect, for he had a new job shortly after. And I have always hoped that the gang he left would learn a little about stores and supplies, before they got another unfortunate into that old shack.

It is a wonderful thing to me that it took the world war to teach the people of the world that supply is, was, and always will be, the greatest question in the world. It must have been a fearful shock to people who had always looked on themselves as of the very greatest importance, to learn that the man who planted a few potatoes and dug them was of more importance to their country than they were.

But we learn, at a price, and what a price. Even the railways learn, after paying the price. Today, when big railway people lay out big shops, they lay out the stores, build them first, the boiler shop next, and then build the other units around them. A few do this, anyway, and it always should have been so. And yet we still see now and then such news items as the one at the head of this letter.

Railway Employees Organization.—The Systems Federation of the Mechanical Employes of all Canadian Railways, which is united with the American Federation of Labor, has elected the following as its first officers:—President, R. J. Talton, Calgary, Alta.; Vice President, F. McKenna, Cranbrook, B.C.; Secretary-Treasurer, C. Dickie, Montreal. The headquarters of the new organization is to be at Winnipeg.



## Canadian Pacific Railway's Honor Roll 32.

Beattie, William	Coal passer	Weyburn	Died of wounds
Blenkin, James Stephen	Car cleaner	Toronto	Wounded
Buckham, Andrew Gilchrist	Sleeping car conductor	Montreal	Wounded
Cadden, Wm.	Painter's helper	Angus	Wounded
Chittenden, Alfred	Blacksmith's helper	Winnipeg	Killed in action
Clark, Percy Wm.	Inspector	Glen Yard	Wounded
Conkling, Orin Lucius	Operator	Santaluta	Wounded
Crawford, Thomas Merrill	Brakeman	British Columbia Dist.	Wounded
Courtney, Arthur Wm.	Wiper	East Calgary	Wounded
Copland, David Arthur	Locomotive fireman	Moose Jaw	Wounded
Davidson, Richard	Clerk	Winnipeg	Killed in action
Dove, Ronald Charles	Clerk	Montreal	Wounded
Dunning, Clarence Singleton	Chief clerk	Montreal	Wounded
Dorward, James Currie	Car cleaner	Winnipeg	Wounded
Ferguson, John	Baggageman	Kamloops	Wounded
Evans, James Ross	Clerk	Regina	Killed in action
Forsyth, Arthur E.	Clerk	Toronto	Wounded
Franklin, Thos. E.	Fitter's apprentice	Sutherland	Wounded
Gaff, Percy Sterling	Clerk	Winnipeg	Gassed
Grinton, David	Fitter's helper	Chapleau	Wounded
Haldane, James	Laborer	London	Wounded
Harris, Ronald	Fitter's helper	Lambton	Gassed
Hart, Robert	Porter	Vancouver	Wounded
Hathaway, Albert	Wiper	Moose Jaw	Wounded
Howe, James W.	Apprentice	Winnipeg	Wounded
Hunnisset, Fredk. Chas.	Shipper	Glen Yard	Wounded
Jacklin, Ernest	Apprentice	Winnipeg	Wounded
Jackson, Samuel Roy	Section laborer	British Columbia Dist.	Wounded
Jones, Robert Harold	Yardman	McAdam Junction	Wounded
Keith, James	Locomotive fireman	Fort William	Concussion
Latimer, John	Carpenter	West Toronto	Wounded
Lea, Stanley Thos.	Locomotive fireman	British Columbia Dist.	Wounded
Levitt, James	Signalman	Saskatoon	Wounded
Linning, Hamilton	Drill boy	Lethbridge	Wounded
Lucas, James	Floorman	Montreal	Killed in action
McColloagh, Hugh	Tinsmith's helper	Winnipeg	Wounded
MacDuff, George	Car repairer	Lethbridge	Died of wounds
McPhee, Dougall	Clerk	Montreal	Wounded
McSporran, Duncan	Locomotive fireman	Moose Jaw	Wounded
Maddocks, Wm.	Locomotive fireman	Lambton	Wounded
Main, Thomas	Towerman	Calgary	Wounded
Matte, Adelard	Agent	Mont Tremblant	Wounded
Mayers, Joseph	Cleaner	Glen Yard	Wounded
Medlicott, Thomas	Painter	Medicine Hat	Wounded
Mein, Fred	Operator	Carberry	Wounded
Mills, Philip	Hostler	Broadview	Wounded
Milner, George	Painter	Ogden Shops	Shell shock
Mitchell, Wm. John	Wiper	Victoria	Wounded
Morrell, George	Painter	West Toronto	Wounded
Morrison, Jesse Edwin	Section foreman	Ronalane	Wounded
Morton, James Henderson	Deck hand	B.C. lake steamers	Wounded
Mudd, Lloyd K.	Trainman	Winnipeg	Wounded
Munro, Jas. Robert	Clerk	Calgary	Killed in action
Nicoll, George	Waiter	Toronto	Wounded
Noakes, Burt	Inspector	Glen Yard	Wounded
Nokes, John Hy.	Car inspector	Toronto	Wounded
Oakes, Bertram James	Pantryman	Montreal	Killed in action
Olliver, David Bertram	Trainman	Winnipeg	Died of wounds
Osbourne, Archie	Fireman	Winnipeg	Wounded
Owen, Hugh	Patternmaker's appren.	Ogden shops	Killed in action
Oxborough, John Campbell	Train baggageman	Calgary	Killed in action
Padgham, Bert	Porter	B.C. coast steamers	Wounded
Parkinson, Askew	Locomotive fireman	London	Wounded
Peagram, Arthur George	Clerk	Montreal	Wounded
Perkins, Stephen G.	Clerk	Winnipeg	Wounded
Peterson, David Edgood	Operator	Gladstone	Wounded
Petrie, William	Checker	Winnipeg	Presumed dead
Phillips, Frederick	Bridgeman	Brandon	Wounded
Phillips, Percy Woodville	Miner	Calgary	Killed in action
Pickering, Thomas	Locomotive fireman	Red Deer	Wounded
Ralph, Harry Robert	Clerk	Montreal	Wounded
Razzell, Edwin	Waiter	Winnipeg	Wounded
Rutherford, Albert	Operator	Toronto	Wounded
Sanger, Herbert George	Furnace helper	Angus	Killed in action
Shackell, Samuel Willis	Transitman	Montreal	Wounded
Sigurdson, Ollie	Locomotive fireman	Kenora	Wounded
Sinnock, Samuel	Fitter's helper	Winnipeg	Wounded
Stenson, Francis Wilfred	Draftsman	Montreal	Wounded
Strachan, Andrew Ritchie	Stenographer	Winnipeg	Wounded
Taylor, William	Maintainer	Winnipeg	Died of wounds
Tilson, Wm.	Car cleaner	Ottawa	Wounded
Treller, Jas.	Boilermaker's helper	Winnipeg	Wounded
Watt, Donald M.	Cleaner	North Transcona	Wounded
Whitehead, Alfred	Stower	Vancouver	Wounded
Whyles, Joseph	Locomotive fireman	Toronto	Died of wounds

Shown on Honor Lists to date: Killed, 592; wounded, 1,326; total, 1,918.

### The Proper Operation of the Superheater Damper.

One of the most important requirements in obtaining the full effectiveness of a superheater is the proper operation at all times of the damper and its rigging. Attention has often been called to the damage done, and the failures caused, because of plugged flues, leaky steam joints and other defects which affect the steaming of the locomotive, and to the fact that these conditions reduce superheat, but very little has been said about the trouble arising from a damper working improperly. It may be just as detrimental to the locomotive as any of the foregoing.

The damper controls the draft, and, therefore, the flow of gases through the large flues. It is located just below the bottom row of large flues, usually on the same level with the table plate, and is operated by a small cylinder bolted on the side of the smoke box. This cylinder is connected either to the steam pipe or blower, as the case may be, by a ½ in. copper pipe, and works automatically upon the opening of the throttle or blower valve. Its operation opens the damper, which is held in the closed position by a counterweight when the throttle is closed. The damper, as thus operated, protects the superheater units from overheating when there is no steam passing through them. Failure of the damper to operate properly materially reduces the steaming

capacity of the boiler, and, consequently, reduces the degree of superheat. For instance, if the damper failed to open, it would obstruct the passage of gases through the tubes and flues above it, thus reducing the boiler evaporation considerably and preventing the effective superheating of the steam passing through the units.

It is also bad practice to wire up or block open the damper. If the damper is kept open continuously it is equivalent to having no damper at all. The firebox gases passing through the large flues and around the units, when no steam is in them, is very likely to burn the ends, warp the units and cause leaks, and generally shorten the life of the units.

Locomotive men have been known to deliberately tie up the damper, although it had proved to be in working condition when the locomotive left the locomotive house. Locomotive house employees have been known to do the same thing when firing up, and it is just such practices as these that lead to locomotive failures.

Dampers and rigging should be given a careful inspection at frequent intervals. This requires but little time. Search for irregularities. One of the first things to ascertain is whether the damper closes tightly, and, also, whether it has its proper opening. See that the damper cylinder piston has a full stroke, and be particular to see that the connecting link between the damper shaft and the cylinder arm is of the correct length and that there is no lost motion in any part of the rigging that would tend to prevent full opening or closing. Keep the small copper steam pipe leading from the steam chest or steam pipe to the damper cylinder well protected against the effects of cold weather. This can readily be done by wrapping it with ¼ in. asbestos rope and covering it with canvas. See that there are no pockets in this pipe, where water can accumulate and freeze. Pipe the drain from the damper cylinder to the exhaust passage of the locomotive cylinders and cover it in the same manner as the steam pipe. See that the cylinder and the connections in the rigging are lubricated. Paint the counterweight white, so that it is easily visible to the locomotive men. If the damper cylinder is so located that the counterweight is not visible, use a small target of any description on the counterweight arm and place it above the running board where it can easily be seen. Bring home to the locomotive man that the correct functioning of the damper is essential, if the hands on the steam gauge and pyrometer are to indicate the correct steam pressure, and temperature, because the proper steaming of the locomotive depends largely on the proper action of the damper.

**G.T.R. Pensioned Employees.**—There are now 1,233 former G.T.R. officials and employees drawing pensions, 79 having been added to the list during 1917. Of the recent additions, 28 had seen 40 years service and over, 9 had seen 45 years service, and 3 had seen over 50 years service. The present pension plan was adopted in 1908, since which the company has contributed \$1,750,000 to the fund, its present rate of contribution being over \$225,000 a year.

**Punished for Fraud.**—A. H. Strickland, a Mountain View, Alta., school teacher, was sentenced to three months imprisonment at Lethbridge, Mar. 5, for attempting to defraud the C.P.R. He made a trip to Cardston, taking with him a trunk, which he secured on arrival, without the station agent's knowledge, and then put in a claim for \$300 for loss of the trunk.



# The Erection of Kettle Rapids Bridge, Hudson Bay Railway.

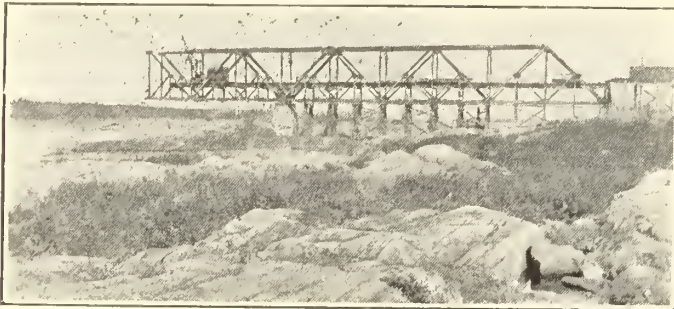
The Kettle Rapids Bridge, on the Hudson Bay Ry., crosses the Nelson River about 332 miles north of Pas, Man. The Nelson River, at this point, forms a deep, narrow gorge, through which flow swift rapids, directly in the way of the site chosen for the crossing. The banks on both sides consist of solid rock for a considerable distance back of the shores, and were a determining factor in selecting the continuous girder type of truss adopted. The design consists of a single track through truss structure, 1,000 ft. long, continuous over 4 supports. These piers are built on small islets of rock, between

and in place economically, formed one of the chief considerations. The following erection programme was adopted:—

The south arm, between piers 1 and 2 was erected on wooden staging, with an ordinary derrick car, the only unusual features being that L0 was erected 10 in. lower than its normal elevation in order to allow for deflection in cantilevering. The truss, as a whole, was also erected on the permanent pier member rollers, about 5 ins. closer to the shore than its normal position. The main joints were then completely riveted, and the derrick car erected the balance of the south half

ler until L-0 was reached. The traveller was then jacked up, so as to bring the trucks level with the top chord of the span, and the balance of the steel for the north anchor arm completed, going forward from U-2 to U-12. After riveting this anchor arm, the cantilever portion of the truss between panels 12 and 20 was easily completed, with the traveller running out on the top chord.

The whole of the south half of the bridge was then jacked forward on the permanent pier member rollers, and a coupling made at L-20. After this joint was riveted, jacks were applied at the



Kettle Rapids Bridge. The completed structure.

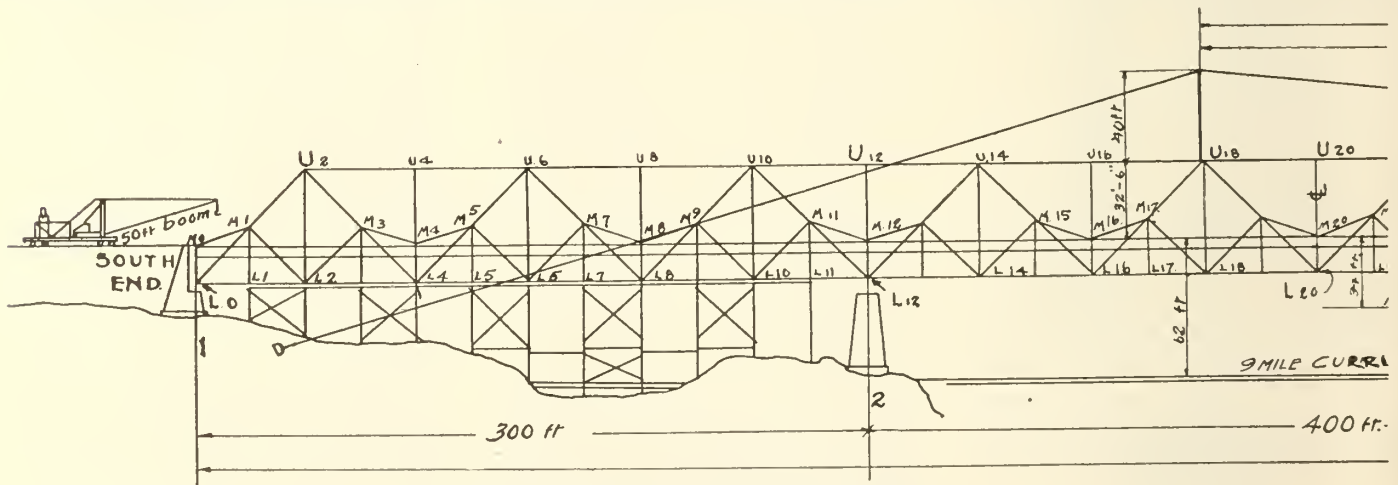
which and the adjacent shores the stream is shallow, with a slow current. The channel span is 400 ft. long, c. to c. of pier members, and the two flanking arms 300 ft. each. The trusses are the Warren type, having 50 ft. main panels, subdivided to form two 25 ft. stringer panels. They are 50 ft. deep, c. to c. of chords, and are spaced 24 ft. apart. All truss joints are riveted throughout. The floor system is the ordinary open floor type, having wooden ties carried on two lines of built up stringers, which frame into the webs of the floor beams. The simplicity of the design greatly facilitated the fabri-

cation and erection of the bridge. The cantilever was then erected from L-12 to L-20. The riveting followed the erection very closely, so as to take care of the erection stresses.

A cableway tower was then erected on the north shore, materials for it being hauled by team over the ice some distance from the crossing. A short cableway bent was also erected on the completed truss at U-18, and a double cableway made of two 2 1/4 in. diameter cables was erected on these towers and securely anchored at both ends. These two cableways were operated by two double drum hoisting engines, and carried a flexible equalizer

two extreme ends of the bridge, points L-0 north and south ends. These ends were raised until the joint at U-20 was closed, after which the four corners were raised simultaneously until a load of 118 1/2 tons was registered on each of the 4 jacks, which fixed the distribution of the dead load stresses throughout the entire structure.

Work on the piers was started in 1916 by the general contractors for the whole line from Pas to Port Nelson, but owing to floods, but little work was done until February and March, 1917. The entire work was under the general supervision



Kettle Rapids Bridge. General erection diagram.

cation and erection and has many commendable points.

The method of erecting the bridge is of special interest, as it was out of the question to use staging of any kind for the channel span; the channel being of great depth, with a current of 9 miles an hour. Furthermore, the remoteness of the site, being at the end of a long construction line leading from Pas, precluded the possibility of bringing material for the north end in from that side, and the problem of getting this half of the structure across,

designed for lifting fifteen tons. The materials for the north end were then taken out on cars to the extreme end of the cantilever truss on the south side, and materials transferred by means of this cableway to the north side.

The staging for the north anchor arm was erected first and on this a light double boom traveller assembled. The steel work was then transferred and placed with this traveller, starting at L-12, and erecting the lower half of the anchor truss, backing up with the travel-

of W. A. Bowden, M.Can.Soc.C.E., Chief Engineer, Railways and Canals Department, Ottawa. The bridge was designed by W. Chase Thomson, M.Can.Soc.C.E., Montreal. The superstructure was fabricated and erected by Canadian Bridge Co., Ltd., Walkerville, Ont.

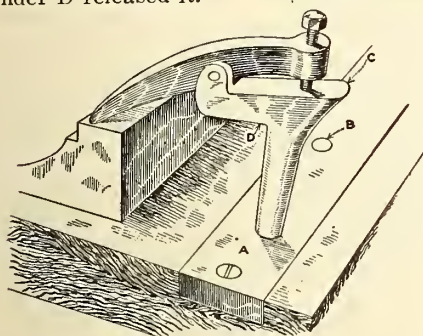
Quebec & Saguenay Ry.—A press report states that construction on this railway was resumed Mar. 15, and that it is hoped to complete the section to Baie St. Paul, by the end of May.



### A Bench Clamp.

A very useful and simple form of bench clamp or holdfast came to my notice during a recent visit to a small shop. It is shown in the illustration.

A piece of  $\frac{1}{2} \times 2$  in. steel stock A was set into the centre of the bench, and ran its full length. A series of holes B were drilled to permit the clamp being used at the most convenient places. A few taps with a hand hammer at C made the device secure in the hole where needed, and when it was desirable to change it, a few taps under D released it.



A Bench Clamp.

There is a wide variety of work that cannot be satisfactorily held in a bench vise. This class of work is easily secured to the bench with this device.—C. H. Willey, in American Machinist.

### Track Section Prize Competition on Eastern Lines, Canadian Pacific Railway.

Canadian Railway and Marine World for January contained general particulars of the above mentioned competition for 1917, and gave the names of the section foremen who won the General Manager's and general superintendent's prizes. We have since been provided with particulars of the awards of the superintendent's and roadmaster's prizes. Following is a com-

plete list of the successful section foremen: General Manager's prize, H. Hoyst, section 6, Havelock Subdivision, Ontario District.

New Brunswick District:—General Superintendent's prize, \$50, Wm. Hunter, section 12, St. John Subdivision; Superintendent's prize, Brownville Division, \$25, O. Zelkan, section 9, Moosehead Subdivision; Superintendent's prize, Woodstock Division, \$25, A. Peluse, section 4, Aroostook Subdivision; roadmaster's prizes, \$10 each, J. Conley, section 8, Moosehead Subdivision; W. Alexander, section 2, Fredericton Subdivision; T. Gidden, section 2, Shore Line Subdivision; J. H. Bogler, section 6, Shogomoc South Subdivision; S. Tompkins, section 13, Shogomoc North Subdivision; J. Mockler, section 3, Aroostook Subdivision.

Quebec District:—General Superintendent's prize, T. Mattingly, section 3, Chalk River Subdivision. Farnham Division—Superintendent's prize, A. St. Louis, section 8, Drummondville Subdivision; roadmaster's prizes, A. Cloutier, section 21, Sherbrooke Subdivision; P. W. Delaire, section 17, Megantic Subdivision; J. Partridge, section 7, Newport Subdivision; F. Gauthier, section 5, St. Guillaume Subdivision. Montreal Terminals Division—Superintendent's prize, D. Lavoie, Mile End; roadmaster's prize, A. Belec, Montreal West. Laurentian Division—Superintendent's prize, D. Proteau, section 18, Trois Rivières Subdivision; roadmaster's prizes, J. Rochon, section 1, St. Lin Subdivision; O. Geroux, section 8, Ste. Agathe Subdivision; A. Fiset, section 3, Trois Rivières Subdivision; J. Bureau, section 25, Trois Rivières Subdivision. Ottawa Division—Superintendent's prize, R. Resauriers, section 5, M. & O. Subdivision; roadmaster's prizes, N. Huno, section 11, M. & O. Subdivision; M. Daly, section 4, Maniwaki Subdivision; P. Cassidy, section 9, Waltham Subdivision. Smiths Falls Division—Superintendent's prize, D. J. McMillan, section 11, Winchester Subdivision; roadmaster's prizes, J. Cochrane, section 14, Chalk River Subdivision; H. Timleck, section 10, Brockville Subdivision; J. Rioux, section 10, Winchester Subdivision.

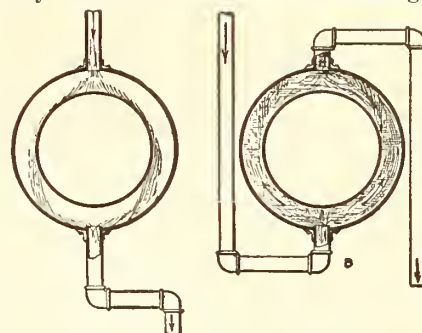
Ontario District:—General Superintendent's prize, G. Muma, section 11, Galt Subdivision. Trenton Division—Superintendent's prize, W. Lowes, section 7, Peterboro; roadmaster's prizes, R. Crawford, section 7, Kingston Subdivision; J. Dowdell, section 14, Belleville Subdivision; M. Connors, section 8, Oshawa Subdivision; L. Linton, section 12, Peterboro Subdivision; W. Lillie, section 2, Havelock Subdivision; B. Locking, section 5, Port McNicholl Subdivision. London Divi-

section 10, O. & T. Subdivision. Toronto Terminals—Superintendent's prize, L. Francis, section 1, Don; roadmaster's prize, R. Gollinger, section 9, Hamilton.

Lake Superior District:—General Superintendent's prize, J. Purich, section 6, White River Subdivision. Superintendent's prizes—North Bay Subdivision, section 3, H. Gunning; Nemegos Subdivision, section 24, M. Hakkinen; Heron Bay Subdivision, section 12, L. Lerwill. Roadmaster's prizes—Thessalon Subdivision, section 16, A. Archambault; Parry Sound Subdivision, section 18, H. G. Roefs; Cartier Subdivision, section 13, P. Ross; North Bay Subdivision, section 12, E. Morin; Nemegos Subdivision, section 4, C. Asialia; White River Subdivision, G. Kusik; Heron Bay Subdivision, section 16, J. Milani; Nipigon Subdivision, section 19, B. Michaud.

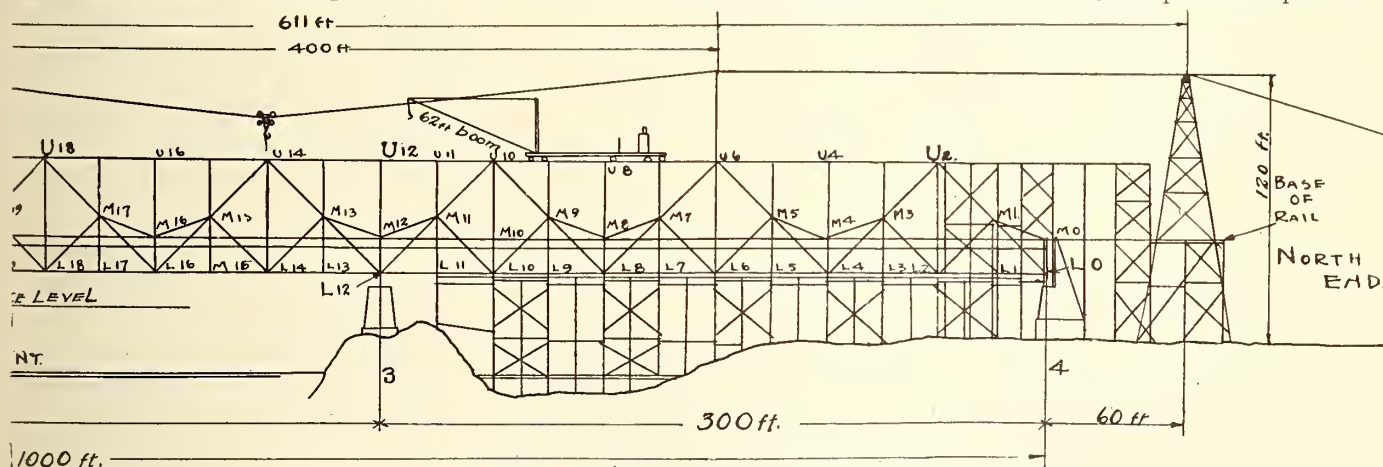
### Cooling a Small Air Compressor.

In a small machine shop with which the writer was connected, considerable difficulty was encountered in maintaining a



Original and rearranged piping.

sufficient supply of air because the compressor persisted in heating up. We had decided that the compressor was too small, and were about to order a larger unit when the writer decided to make a more complete investigation. While going over the water-cooling connections an air compressor erector stopped in, and after a brief inspection explained the



Kettle Rapids Bridge. General erection diagram.

plete list of the successful section foremen: General Manager's prize, H. Hoyst, section 6, Havelock Subdivision, Ontario District.

New Brunswick District:—General Superintendent's prize, \$50, Wm. Hunter, section 12, St. John Subdivision; Superintendent's prize, Brownville Division, \$25, O. Zelkan, section 9, Moosehead Subdivision; Superintendent's prize, Woodstock Division, \$25, A. Peluse, section 4, Aroostook Subdivision; roadmaster's prizes, \$10 each, J. Conley, section 8,

sion—Superintendent's prize, A. Fairbanks, section 4, Windsor Subdivision; roadmaster's prize, T. Wilson, section 7, Windsor Subdivision; G. Muma, section 15, Galt Subdivision; J. Schmidt, section 9, H. & G. Subdivision; E. Allen, section 8, St. Thomas Subdivision; F. Broadbent, section 3, Galt Subdivision. Bruce Division—Superintendent's prize, W. Nealy, section 11, Owen Sound Division; roadmaster's prizes, H. Crowther, section 14, Owen Sound Subdivision; L. D'Angio, section 19, MacTier Subdivision; R. Hewett,

cause of our trouble.

The original water connection was made as per sketch A. With this system of piping, a body of cooling water could not be maintained around the cylinder, but instead merely ran over the cylinder in a thin film, and out to waste. The compressor erector advised revising the water cooling connection as per sketch B, from which it will be observed that the water jacket would be completely filled with water at all times.—W. A. Lailor, in American Machinist.



## Birthdays of Transportation Men in April.

Many happy returns of the day to:—

F. G. Adams, Commercial Agent, G.T.R., and Division Freight Agent, Grand Trunk Pacific Ry., Winnipeg, born at St. John's, Nfld., Apr. 6, 1878.

W. H. Ardley, Comptroller, G.T.R., and Grand Trunk Pacific Ry., Montreal, born at London, Eng., Apr. 24, 1858.

Jas. Black, Freight Claim Agent, C.P.R., Vancouver, B.C., born near Seaforth, Ont., Apr. 19, 1858.

C. G. Bowker, General Superintendent Eastern Lines, G.T.R., Montreal, born at Medford, N.J., Apr. 21, 1871.

G. C. Briggs, Supervisor of Buildings, Eastern Lines, Canadian Northern Ry., Toronto, born at Cockermouth, Eng., Apr. 23, 1886.

A. V. Collins, Travelling Auditor, Canadian Steamship Lines, Ltd., Toronto, born at Island Pond, Vt., Apr. 21, 1868.

R. J. Collins, Chief Dispatcher, Edmonton Division, Alberta District, C.P.R., Edmonton, born at Winnipeg, Apr. 30, 1883.

G.T.R., Montreal, born at Uxbridge, Ont., Apr. 22, 1866.

G. W. Lee, Commissioner, Timiskaming & Northern Ontario Ry., North Bay, Ont., born at Renfrew, Ont., Apr. 15, 1871.

J. D. McMillan, acting Superintendent, Belleville Division, Ontario Lines, G.T.R., Belleville, born in Eldon Tp., Ont., Apr. 5, 1858.

J. A. Macgregor, Superintendent, Edmonton Division, Alberta District, C.P.R., Edmonton, born at Dufftown, Scotland, Apr. 5, 1873.

B. R. Marsales, District Freight Agent, Canadian Northern Ry., Calgary, Alta., born at Guelph, Ont., Apr. 13, 1887.

P. Mooney, General Freight and Passenger Agent, Halifax & South Western Ry., Halifax, N.S., born at St. Catharines, Que., Apr. 19, 1871.

Paul J. Myler, President, Canadian Westinghouse Co., Ltd., Hamilton, Ont., born at Pittsburg, Pa., Apr. 24, 1869.

J. H. Norton, Division Freight Agent,

E. W. Smith, Superintendent, Dining and Parlor Car Service, G.T.R., Toronto, born at North Bridge, Mass., Apr. 21, 1869.

David A. Starr, M.I.E.E., General Manager, Clyde Valley Electrical Power Co., Glasgow, Scotland, born at Halifax, N.S., Apr. 11, 1858.

D. F. Thomas, ex-General Manager, Algoma Eastern Ry., now at Sault Ste. Marie, Mich., born in Halton County, Ont., Apr. 20, 1867.

W. S. Tilston, Chief of Montreal Board of Trade Transportation Bureau, born at Manchester, Eng., Apr. 14, 1877.

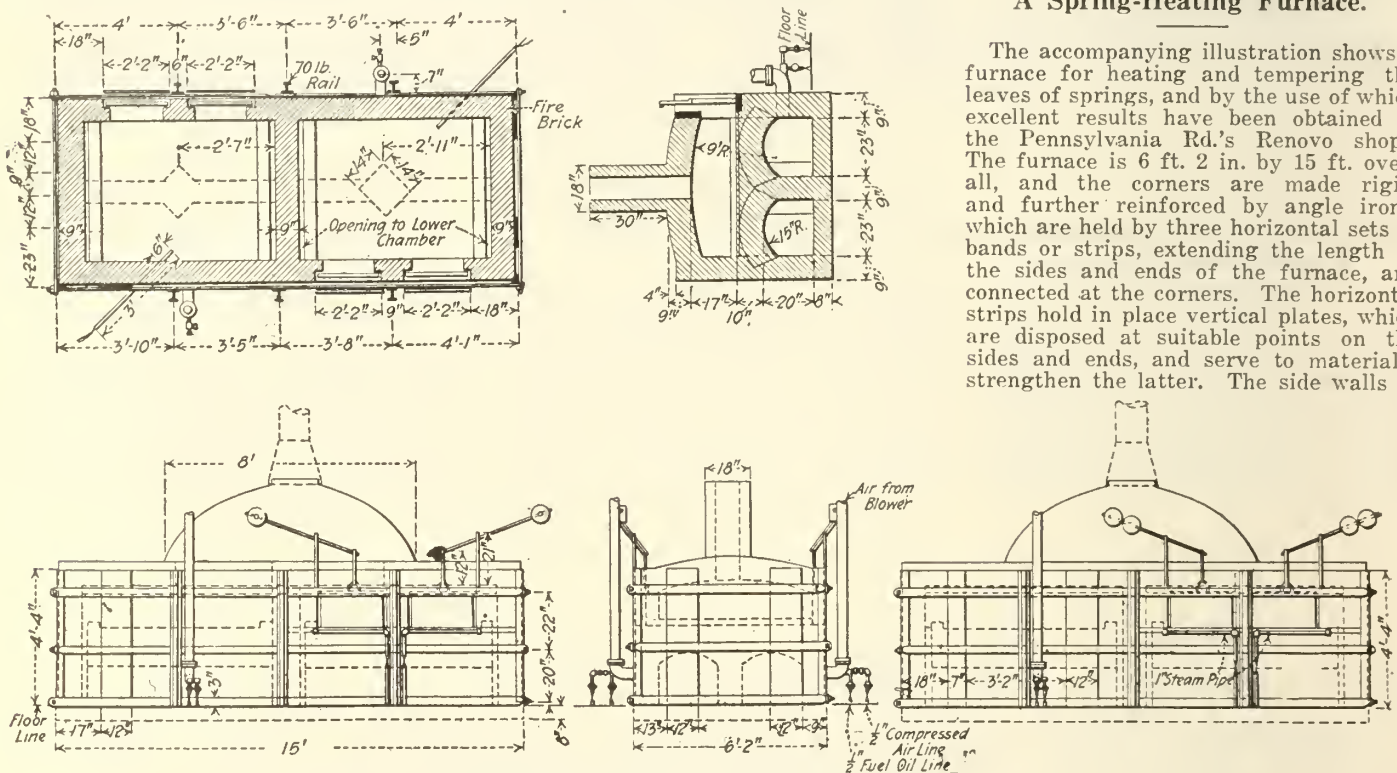
C. H. Towle, Assistant Superintendent, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at Enfield, Me., Apr. 13, 1878.

E. D. Toye, ex-Storekeeper, Ontario Division, Canadian Northern Ry., Trenton, born at Dalston, Ont., Apr. 27, 1891, now on active service overseas.

W. Woollatt, Vice President and General Manager, Essex Terminal Ry., Walkerville, Ont., born at Weedon, Hertfordshire, Eng., Apr. 2, 1855.

## A Spring-Heating Furnace.

The accompanying illustration shows a furnace for heating and tempering the leaves of springs, and by the use of which excellent results have been obtained in the Pennsylvania Rd.'s Renovo shops. The furnace is 6 ft. 2 in. by 15 ft. overall, and the corners are made rigid, and further reinforced by angle irons, which are held by three horizontal sets of bands or strips, extending the length of the sides and ends of the furnace, and connected at the corners. The horizontal strips hold in place vertical plates, which are disposed at suitable points on the sides and ends, and serve to materially strengthen the latter. The side walls of



Kettle Rapids Bridge. South half under construction.

Sir Henry L. Drayton, K.C., Chief Railway Commissioner for Canada, Ottawa, Ont., born at Kingston, Ont., Apr. 27, 1869.

W. A. Duff, M.Can.Soc.C.E., Assistant Chief Engineer, Canadian Government Railways, Moncton, N.B., born at Hamilton, Ont., Apr. 20, 1877.

A. Gaboury, Superintendent, Montreal Tramways Co., Montreal, born there, Apr. 6, 1875.

B. C. Gesner, Moncton, N.B., formerly Air Brake Inspector, I.R.C., now Eastern Sales Agent, Galena Signal Oil Co., born at Cornwallis, N.S., April 23, 1859.

J. Murray Gibbon, General Publicity Agent, C.P.R., Montreal, born at Udevela, Ceylon, Apr. 12, 1875.

V. A. Harshaw, Manager, Fredericton & Grand Lake Coal & Ry. Co., and New Brunswick Coal & Ry. Co., Fredericton, N.B., born at Mono, Ont., Apr. 26, 1865.

J. H. Johnston, Superintendent of Bridges and Buildings, Eastern Lines,

Canadian Government Railways, Halifax, N.S., born at Shaftesbury, Eng., Apr. 21, 1884.

G. D. Perry, General Manager, Great North Western Telegraph Co., Toronto, born at Whitby, Ont., Apr. 19, 1858.

R. A. Pyne, Superintendent of Motive Power and Car Department, Eastern Lines, C.P.R., Montreal, born at Toronto, Apr. 10, 1874.

Lieut. R. S. Richardson, formerly Superintendent, District 3, Transcontinental Division, Canadian Government Railways, Fort William, Ont., now of No. 13 Light Railway Company, Royal Engineers, British Expeditionary Force, born at Napanee, Ont., Apr. 9, 1865.

F. Rioux, Assistant to President, Reid Newfoundland Co., St. John's, Nfld., born at Trois Pistoles, Que., April 18, 1867, now on active service overseas.

W. A. Ritchie, District Superintendent, Pullman Co., Montreal, born at Edinburgh, Scotland, Apr. 13, 1854.

the furnace are further reinforced by the use of 70 lb. steel rails, vertically located at required intervals.

Large pipes for supplying air from the blower enter the sides of the furnace in a straight line, as this has been found more satisfactory than when the pipes are led in on an angle. The furnace can be supplied with air from the compressed air system, by means of a connection entering at the same point as the fuel oil. This arrangement is made to provide against a possible breakdown of the blower system. The blower pipe line is 3 in., and the oil and compressed air lines, each ½ in.

The doors of the compartments, of which there are two on each side and at opposite ends of the furnace, are raised and lowered by pivoted levers having ball weights, and which hold the doors in an open position when raised. Each of the compartments is equipped with an electrical pyrometer.



## Questions About Draw-Bar Pull.

A Canadian Railway and Marine World subscriber wrote recently asking the following questions:

"How much power applied at the draw-bar is necessary to move a train of given weight on a level track?"

"How much more power is required to start this train in motion?"

"How much should be added to the above for variations in the track i.e., if the track has been roughly laid or improperly ballasted?"

We referred the enquiry to Alfred Price, Assistant General Manager, Eastern Lines, C.P.R., who has favored us with the following information:

"The draw-bar pull necessary to keep a train moving at a uniform velocity on straight, level track depends chiefly upon the nature and condition of the track and equipment, the velocity, and the average weight of the cars comprising the train.

"On good track and under favorable quired may vary from 7¼ lb. ton at 5 miles an hour, to 12¼ lb. a ton at 35 weather conditions, the draw-bar pull remiles an hour, for an empty flat car weighing 15 tons, and from about 3 lb a ton at 5 miles an hour to 5 lb. a ton at 35 miles an hour, for a loaded car having a total weight of 75 tons.

"The draw-bar pull necessary to start a train is even more variable than that required to keep it in motion. On level track the pull may vary from about 6½ lb a ton to over 20 lb. a ton for the individual cars. A locomotive will not usually have to start the whole at the same moment, and therefore the starting resistance per ton for the whole train may be somewhat less.

"Poor track may increase train resistance 100%."

H. D. Cameron, Mechanical Engineer, Canadian Northern Ry., to whom the questions were also referred, has favored us with the following replies:—"In order to reply intelligently to these questions it will be advisable to recall the principal factors that enter into the calculation in determining train resistance. Train resistance may be defined as the sum of all resistances which constitute a tax on the adhesion of the locomotive, and may be considered under the following heads:—

"Grade resistance is due to the retarding of gravity, is an invariable factor, and can be calculated exactly by resolving the triangle of forces which act when a train moves up a known incline. This works out to 20 lb. a ton for 1% grade.

"Curve resistance is made up of several different factors, which are difficult to determine exactly, and different authorities give figures which vary from 0.5 of a pound per degree to 1.75. For ordinary purposes we have used 0.8 of a pound as a fair average for resistance on curves.

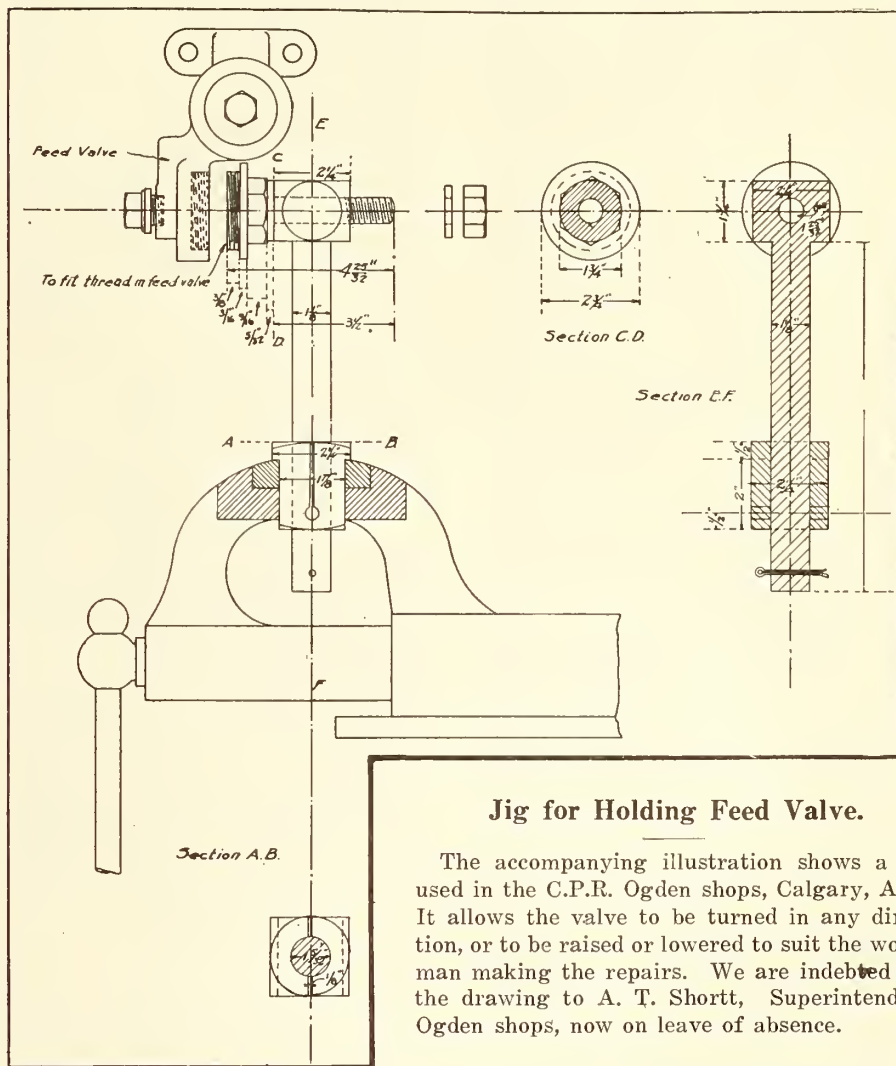
Speed resistance is comprised of the following variable factors which always act together, and are, therefore, usually considered under the one heading of speed resistance. These factors are:—1, Journal friction, between journal and bearing; 2, Rolling friction, between rail and wheel; 3, Resistance due to weather conditions; 4, Flange friction, due to oscillation and concussion; 5, Resistance due to change in velocity. These variables, with the exception of resistance due to change in velocity, are rather hard to isolate and determine accurately, and for ordinary rough calculation we assume about 6 lb. per ton for speed resistance other than that required for change in velocity. The

latest tables on speed resistance, compiled by the American Locomotive Co., show the resistance of freight cars comparatively constant between 5 and 30 miles an hour, and varying only according to the weights of car as follows:—

Weight of car in tons (tare & contents)	Resistance (pounds per ton)
20 .....	7.84
25 .....	6.62
30 .....	5.78
40 .....	4.65

"To summarize, the power required, in pounds per ton, to move a train on straight level track would have to be sufficient to overcome rolling resistance and resistance due to change in velocity. For example, a train composed of 50 units started from rest, and brought to a speed of 20 miles an hour in a distance of 2,000 ft. requires:—

"Resistance to overcome inertia = $\frac{10 \times 20^2}{2000}$	20 lb. per ton
"Speed resistance (see table =	4 lb. per ton
"Total power required = ...	24 lb. per ton



Jig for Holding Feed Valve.

The accompanying illustration shows a jig used in the C.P.R. Ogden shops, Calgary, Alta. It allows the valve to be turned in any direction, or to be raised or lowered to suit the workman making the repairs. We are indebted for the drawing to A. T. Shortt, Superintendent Ogden shops, now on leave of absence.

50 .....	3.94
60 .....	3.44
70 .....	3.06
70 .....	3.00

"The resistance due to change in velocity can be determined with reasonable accuracy from the formula  $P = \frac{70V^2}{S}$

where V represents the change in velocity in miles per hour, and S the distance in which it is acquired.

"Referring again to questions 1 and 2. The writer is not very clear as to the difference between power required 'to move' a train on level track and power required 'to start this train in motion.' Probably your correspondent wanted to distinguish between speed resistance, and resistance required to overcome inertia or change in velocity. The other question regarding allowance for variation in track is liable to vary between such wide limits that it is not possible to give a definite answer. In practice it would be determined by experiment.

Railway Lands Patented.—Letters patent were issued during February, respecting Dominion railway lands in Manitoba, Alberta and British Columbia, as follows:—

	Acres
Alberta & Great Waterways Ry.....	246.20
Calgary & Edmonton Ry.....	2,533.00
Canadian Northern Ry.....	3,864.39
Canadian Northern Alberta Ry.....	6.00
Canadian Pacific Ry. roadbed and station grounds.....	9.73
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.....	1,122.00
Total.....	7,781.38

Nova Scotia Society of Civil Engineers.—Subject to the approval of both societies, a resolution has been adopted by this society favoring its amalgamation with the Canadian Society of Civil Engineers. It has also been decided to make application for the formation of a branch of the C.S.C.E. in Halifax, N.S.

Ontario Railway and Municipal Board. The Ontario Legislature has voted \$41,200 for the board's estimates for this fiscal year.



# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 214-C. Feb. 25.—Approving, subject to provisions of order in council P.C. 229, Jan. 30, following Standard Tariffs of Maximum Mileage Tolls for passengers.—Elgin & Havelock Ry. C.R.C. 5, and Northern Pacific Ry. C.R.C. 317.

General order 215-B. Feb. 25.—Approving, subject to provisions of order in council P.C. 229, Jan. 30, following Standard Freight Tariffs of Maximum Mileage Tolls.—Elgin & Havelock C.R.C. 5; Essex Terminal Ry. C.R.C. 457; and Northern Pacific Ry. C.R.C. 376.

General order 221. Feb. 26.—Prescribing minimum carload weights of tan bark, when carried under special commodity tariffs. Schedules filed to take effect by Mar. 11.

26992. Feb. 16.—Recommending to Governor in Council for sanction, rules and regulations for London & Port Stanley Ry. Co. employees.

26993, 26994. Feb. 12, 18.—Approving Bell Telephone Co. agreements with United Telephone Co., Middlesex County, Ont., Jan. 31; East Wakefield Telephone Co., Ottawa County, Que., Sept. 14, 1917, and rescinding previous agreement in latter case.

26995. Feb. 18.—Dismissing application of The Freight and Express Underwriters, Toronto, to change last paragraph rule 6 of Canadian Car Demurrage Rules, prescribed by general order 201, Aug. 1, 1917.

26996. Feb. 16.—Authorizing C.P.R. to discontinue operation of train 35, westbound local, due at Finch 9.35 a.m.; and eastbound local 36, due 5.53 p.m.; no. 19, due 10.46 a.m., and no. 20, due 5.02 p.m., to be operated in lieu thereof; and suspending from Feb. 24 to Apr. 28 inclusive, order 23657, May 4, as amended by order 23738, May 25, 1915.

26997. Feb. 18.—Relieving Canadian Northern Ry. from providing further protection at highway on south boundary of River Lot 7, Fort Saskatchewan Settlement, Alta., mileage 808.6 from Winnipeg.

26998. Feb. 19.—Authorizing C.P.R. to remove station agent at Brora, Sask.

26999. Feb. 18.—Relieving Michigan Central Rd. from maintaining day and night watchmen at second crossing west of Highgate, Ont.

27000. Feb. 19.—Approving Canadian Northern Quebec Ry. plan, showing station to be erected at St. Alexis.

27001. Feb. 18.—Authorizing Canadian Northern Ry. to withdraw train no. 15, leaving Kingston at 7 p.m. and Deseronto at 9.15, arriving at Belleville, Ont., at 9.45; and train no. 18, leaving Belleville 6 p.m., arriving Deseronto, Ont., at 6.35 p.m.; effective until Apr. 28.

27002. Feb. 19.—Approving plan of rearrangement of G.T.R. yard at Central Station, Ottawa; work to commence by May 1, and be completed by Sept. 15.

27003. Feb. 18.—Authorizing Canadian Northern Ry. to build spur for D. Rouleau & Fils, St. Tite, Parish Co.

27004. Jan. 28.—Authorizing Bell Telephone Co. to lay telephone lines in underground conduits, in certain streets in Ottawa, and to attach two iron pipes to Cummings Bridge abutments, and lay 6 conduits across Cummings Island, with manhole in centre.

27005. Feb. 18.—Authorizing Military Hospitals Commission to connect its tracks with G.T.R. at Whitby, Ont.

27006. Feb. 18.—Authorizing C.P.R. to build spur for Pembroke Machinery Co., Pembroke, Ont.

27007. Feb. 18.—Authorizing Canadian Northern Ry. to build spur for M. Lacombe, St. Canut Parish.

27008. Feb. 12.—Authorizing C.P.R. to divert road allowances on eastern boundary of n. e. ¼ Sec. 5, Tp. 22, Range 7, and on west boundary of sec. 35, Tp. 21, Range 8, w. 4th meridian, Alta.

27009. Feb. 18.—Approving Michigan Central Rd. plan V-56, showing changes to be made in interlocking tower at Windsor, Ont.

27010. Feb. 20.—Authorizing Canadian Northern Ry. to cross and divert highway between Secs. 21 and 22, Tp. 38, Range 26, west 2nd meridian, Sask.

27011. Feb. 20.—Authorizing British Columbia Public Works Department to build highway over Esquimalt & Nanaimo Ry. 1 mile north of Colwood, Vancouver Island.

27012. Feb. 20.—Authorizing G.T.R. to build sidings and spurs for Dominion Shipbuilding Co., Toronto.

27013. Feb. 20.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Granby Consolidated Mining, Smelting & Power Co. at mileage 64.8, Victoria Subdivision, Vancouver Island, B.C.

27014. Feb. 20.—Authorizing Canadian Northern Ry. to build spur for Capital Coal & Wood Co., Regina, Sask.

27015. Feb. 20.—Ordering G.T.R. to install facilities at Brockville or Prescott, Ont., for housing and repairing locomotives; plans be filed for approval within 15 days from date; work to be

commenced by Mar. 25 and completed by September.

27016. Feb. 21.—Ordering that telephone be installed by Union Station Co., in Union Station, Toronto, for direct communication between upper waiting room and train sheds, to enable depot master to furnish gateman and train announcer with information as to location and movement of trains and when ready to receive passengers.

27017. Feb. 21.—Ordering C.P.R. to stop all passenger trains on flag, unconditionally, at Blairton, Ont. See also order 27029.

27018. Feb. 20.—Authorizing Canadian Northern Ry. to open for traffic its line from Victoria to Patricia Bay, B.C., 15.49 miles.

27019. Feb. 21.—Approving Bell Telephone Co. agreements with Euphrasia Tp., Ont., Jan. 21, 1910, and June 30, 1916.

27020. Feb. 22.—Approving location and plans of G.T.R. standard enclosed waiting shed at Ellatton, Ont.

27021. Feb. 22.—Relieving Michigan Central Rd. from maintaining day and night watchmen at crossing near Springfield, Ont.

27022. Feb. 21.—Ordering Canadian Northern Ry. to maintain present service of trains 1 and 2, Quebec to Chicoutimi, Que., until further order.

27023. Feb. 22.—Rescinding, for duration of war, par. 8 of order 13605, Apr. 24, 1911, re operation of trains over Canadian General Electric Co.'s crossings at Peterborough, Ont.

27024. Feb. 23.—Relieving Canadian Northern Ry. from providing further protection at highway crossing east of milepost 194, Hartney Subdivision, Man.

27025. Feb. 23.—Approving agreement between Bell Telephone Co. and Missouri Telephone Co., Oxford County, Ont.

27026. Feb. 23.—Authorizing G.T.R. to operate over Toronto, Hamilton & Buffalo Ry. to National Abrasive Co., Hamilton, Ont.

27027. Feb. 22.—Authorizing York Tp., Ont., to make highway across G.T.R. and Toronto & Niagara Power Co. lines at Eileen Ave.; and reserving rights of seniority of the companies.

27028. Feb. 25.—Approving form of release of liability of travelling in non-passenger cars, for use by Toronto, Hamilton & Buffalo Ry., and rescinding order 24887, Apr. 11, 1916.

27029. Feb. 26.—Ordering C.P.R. to stop trains 35 and 36 on flag, unconditionally, at Blairton, Ont.; and rescinding order 27017, Feb. 21.

27030. Feb. 26.—Authorizing Steel Co. of Canada to erect overhead crane runway and supports across G.T.R. Lachine Canal Branch.

27031. Feb. 25.—Authorizing G.T.R. to build spur for D. S. Bachand, Barnston Tp., Que.

27032. Feb. 25.—Recommending to Governor in Council for sanction, agreement between G.T.R. and Quebec, Montreal & Southern Ry., Sept. 26, 1917, agreement not to continue in force longer than 21 years.

27033. Feb. 22.—Authorizing Toronto, Hamilton & Buffalo Ry. to build freight yard near Bridgeburg, Ont., to cross road allowances between Cons. 4 and 5 and 6 and 6; to divert Michigan Central Rd. Niagara Bch.; change interlocking plant at Niagara Jct.; to connect with M.C.R. near Bridgeburg, and to cross M.C.R., as diverted, Per Marquette Ry. lands; work to be done by T. H. & B. Ry.; and reserving right to Bertie Tp., Ont., to apply for protection at crossings.

27034. Feb. 22.—Authorizing Toronto, Hamilton & Buffalo Ry. to build three spurs across Newport St., Brantford, Ont.

27035. Mar. 1.—Authorizing C.P.R. to build extension to spur for T. Eaton Co., Regina, Sask.

27036. Feb. 26.—Authorizing special mileage tariff of Dominion Express Co. for carriage of cream in British Columbia. This order is given fully on another page under "Among the Express Companies."

27037. Mar. 1.—Relieving C.P.R. from providing further protection at 11th Ave. East, Swift Current, Sask.

27038. Mar. 1.—Amending order 26991, Feb. 18, to provide that C.P.R. train 509 leave Montreal for Ottawa at 4.45 p.m. instead of 4.30 p.m.; and that morning train leave Montreal at 8.20 instead of 8.15 a.m.

27039. Mar. 1.—Relieving G.T.R. from providing further protection at crossing between Beaver-ton and Lorneville Jct., Ont.

27040. Feb. 25.—Ordering G.T.R. to lower culvert near St. Francois-Xavier St., Farnham, Que., at expense of Dominion Agriculture Department; to be completed within 60 days from date.

27041. Mar. 2.—Relieving G.T.R. from providing further protection at Edward St., Stirling, Ont.

27042. Mar. 1.—Authorizing New York Central Rd. to rebuild bridge A-46 over Trout River, near Huntingdon, Que.

27043. Mar. 2.—Amending order 27019, Feb. 21, 1918, re Bell Telephone Co.'s agreements with Euphrasia Tp., Ont.

27044. Mar. 4.—Authorizing Hull Electric Co. to build spur for Electric Smelting Co. of Brantford, Ltd., Hull, Que.

27045. Mar. 5.—Authorizing Hull Electric Co. to build Y at Deschenes, Que.

27046. Mar. 4.—Authorizing Canadian Northern Quebec Ry. to build extension to spur on Sixth St., Charlesburg Parish, Que.

27047. Mar. 4.—Authorizing G.T.R. to use bridge 112 across Sauhle River, Arran Tp., Ont.

27048. Mar. 6.—Authorizing C.P.R. to cross Sixth Ave., Regina, Sask., with temporary spur for T. Eaton Co. during building construction.

27049. Mar. 6.—Authorizing Alberta Public Works Department to build highway over Edmonton, Dunvegan & British Columbia Ry. on north boundary of n. w. ¼ Sec. 13, Tp. 72, Range 6, west 6th meridian; cost to be paid by rural municipality 740.

27050. Mar. 6.—Amending order 15149, Sept. 8, 1911, re express collection and delivery in Calgary, Alta.

27051. Mar. 7.—Authorizing Canadian Northern Ry. to cross and divert Rosebud River, in n. e. ¼ Sec. 12, Tp. 27, Range 22, west 4th meridian, Alta.

27052. Mar. 7.—Approving form of release of liability in respect of travelling in non-passenger cars, for use by Kettle Valley Ry.

27053. Mar. 6.—Authorizing G.T.R. to build spur for Hunt Bros., London Tp., Ont.

27054. Mar. 7.—Authorizing G.T.R. to rebuild bridge over its tracks at Laurier Ave., Ottawa.

27055. Mar. 8.—Authorizing G.T.R. to rebuild bridge 68, over public road between Lots 28 and 29, Con. 2, Saugeen Tp., Ont.

27056. Mar. 7.—Authorizing Saskatchewan Highways Department, for Harris rural municipality 316, to make highway over Canadian Northern Ry. Goose Lake Branch surveyed road through Sec. 20, Tp. 31, Range 12, west 3rd meridian.

27057. Mar. 8.—Authorizing Canadian Northern Ry. to cross and divert highway between Secs. 22 and 23, Tp. 26, Range 23, west 3rd meridian, Sask., and rescinding order 19968, Aug. 6, 1913.

27058. Mar. 6.—Ordering Alkoma Central & Hudson Bay Ry. to amend special local commodity tariff, C.R.C. 388, applying on cordwood; authorizing it on due notice to cancel special local freight tariff on charcoal wood, C.R.C. 417.

27059. Feb. 10.—Authorizing British Columbia Public Works Department to make highway over Esquimalt & Nanaimo Ry. at mileage 28.12, Vancouver Island.

27060. Mar. 8.—Amending order 27040, Feb. 25, 1918, re changes in culvert at Farnham, Que., by G.T.R. by substituting Central Vermont Ry. for G.T.R.

27061. Mar. 9.—Ordering G.T.R. to build elevated cabin at Barton St., Hamilton, Ont., as per order 24029, July 28, 1915.

27062. Mar. 9.—Dismissing Canadian Northern Ry. application to make certain reductions in passenger service between Quebec and Chicoutimi.

27063. Mar. 15.—Ordering G.T.R. to flag all trains over Toronto St., Port Credit, Ont.

27064. Mar. 15.—Approving agreement, Feb. 25, between Bell Telephone Co. and Boat Lake Telephone Co., Bruce County, Ont.

27065. Mar. 15.—Approving Canadian Northern Pacific Ry. plans of July 11, 1917, showing station layout at Vancouver, B.C.

27066. Mar. 15.—Relieving G.T.R. from providing further protection at second crossing east of Ingersoll station, Ont.

27067. Mar. 15.—Ordering Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to install box car body as shelter at Manning Siding, B.C., to be completed by May 1, and rescinding order 26990, Feb. 16.

27068. Mar. 16.—Ordering Pere Marquette Ry. to file joint commodity tariff applying third-class rates from Wallaceburg, Ont., to Toronto and Montreal on cut glass.

27069. Mar. 16.—Authorizing Pere Marquette Ry. to cancel Canadian Northern Ry. as party to tariff C.R.C. 2048.

27070. Mar. 15.—Extending, for 30 days from date, time within which New York Central Rd. shall install bell at highway near St. Stanislas, Que.

27071. Mar. 15.—Extending, for 60 days from date, time within which C.P.R. shall install bell at crossing at McAdam Jct., N.B.

27072. Mar. 18.—Extending to Nov., 1919, time within which G.T.R. shall provide suitable accommodation for handling all traffic offered at Summerstown, Ont., as required by order 21549, Mar. 24, 1914.

27073. Mar. 18.—Ordering Great Northern Ry. to rebuild and repair right of way fence and install cattle guards at crossings in use on Victoria & Sidney Ry., from northern boundary of Victoria to McKenzie Ave.; and make necessary repairs between McKenzie Ave. north and Sidney, to be completed by May 31.

27074. Mar. 18.—Authorizing C.P.R. to build spur on Pardee Ave., Toronto, for E. W. Gillett Co.

27075. Mar. 18.—Authorizing Sandwich West Tp., Ont., to build crossings over Essex Terminal Ry. at Maple and Gladstone Aves.

27076. Mar. 19.—Amending order 8408, Oct. 20, 1909, by substituting John McMillan for James Kent, in order.

27077. Mar. 15.—Authorizing Emo municipality, Ont., to build crossing over Canadian Northern Ry. at Jessie St.

27078. Mar. 15.—Authorizing Alberta Public Works Dept. to build crossing over Edmonton, Dunvegan & British Columbia Ry. in River Lot 49, Tp. 77, R. 5, w. 6th meridian, Alta.



27079. Mar. 19.—Dismissing application of R. W. Hannah, Toronto, for cancellation of clause on order bill of lading approved by Board, re inspection of goods covered by bill not permitted unless provided by law or unless permission is endorsed on original bill or given in writing by shipper. The order is given in full on another page.

27080. Mar. 20.—Authorizing Laval Electric Co. to erect wires along C.P.R., at mileage 17 of Lachute Subdivision, Que.

27081. Mar. 21.—Disallowing rates on coal, in carloads, from Buffalo, Black Rock and Suspension Bridge, N.Y., to Preston, Hespeler and Guelph, Ont., in G.T.R. tariff, C.R.C. no. E-3766, and M.C. R. tariff, C.R.C. no. 2478, effective Mar. 15, and ordering other following rates in lieu thereof. This order is given in full on another page.

27082. Mar. 21.—Amending order 26219, June 18, 1918, re watchmen's wages at G.T.R. crossing at Winchester Ave., Toronto.

27083. Mar. 20.—Authorizing Bank of British North America, West Toronto, to repay to Gibson, McCormack, Irvin Co., \$400 deposited to board's credit, with interest, if any.

27084. Mar. 19.—Disallowing stop-over charge of \$5 a car for completion of loading of live stock; and ordering Pere Marquette Ry. to file new tariff showing stop-over charge of \$3 a car. This order is given in full on another page.

27085. Mar. 18.—Re transit arrangements at

Montreal applicable to grain from Western Canada handled by C.P.R. via all rail, or lake and rail routes, products of which are reshipped to destinations on or via Intercolonial Ry., or for export via Halifax. This order is given in full on another page.

27086. Mar. 21.—Relieving C.P.R. from providing further protection at Prince de Galles St., at Laval Rapids, Que.

27087. Mar. 23.—Ordering C.P.R. not to exceed 10 miles an hour over highway crossing near station at Lacombe, Alta.; no cars to be left standing closer than 50 ft. from highway on tracks 2 and 3, and 100 ft. on track 1; if trains are cut closer, highway to be protected by employee while train is standing; sign posts to be erected on each side of crossing, showing clearances to be observed.

27088. Mar. 23.—Approving clearances of platform shelter at Manitoba Cold Storage Co.'s spur, Winnipeg.

27089. Mar. 23.—Authorizing Canadian Northern Ry. to build spur for Henderson & Shaw Coal Co. in south  $\frac{1}{2}$  sec. 7, Tp. 28, R. 19, west 4th meridian, Alta.

27090. Mar. 23.—Authorizing G.T.R. to change location of spur for Clifton Sand, Gravel & Construction Co., Stamford Tp., Ont.

27091. Mar. 22.—Authorizing C.P.R. to build two spurs for Polson Iron Works at Toronto.

in wages and in the cost of fuel and materials of every description.

Subject to your approval, your directors have authorized expenditures on capital account during the present year of \$3,200,000, apportioned to the following works, viz.:—Replacement of temporary structures on branch lines by permanent work, \$512,000; transfer slip at Vancouver, additional coaling plants, small stations and section houses, \$815,000; interlocking and protective signal apparatus, \$160,000; additional terminal and side track accommodation, \$450,000; and a variety of additions and improvements to the property designed to secure greater convenience and economy, \$1,263,000.

The undermentioned directors will retire from office at the approaching annual meeting. They are eligible for re-election. J. K. L. Ross, Lord Shaughnessy, Sir Thos. Skinner.

### Canadian Northern Railway Construction, Betterments, Etc.

The passenger station on Lagauchetiere St., Montreal, is practically completed. This building is for temporary use only, pending the erection of the permanent station on the Dorchester St. side of the block. It is expected that trains will be run through the tunnel into the new station in the autumn.

The Toronto, Niagara & Western Ry. is applying to the Dominion Parliament for an extension of time for the construction of its projected railway from Toronto to Hamilton, and an extension from Hamilton, via St. Catharines, to the International Boundary, with a branch to Port Colborne, Ont.

The Canadian Northern Ontario Ry. is asking the Dominion Parliament to extend the time for building its projected railway from some point on its line between Port Arthur and Sudbury, near Long Lake, northerly and westerly to a junction with the National Transcontinental Ry. east of Lake Nepigon, Ont.

A delegation waited on the Alberta Government, Mar. 12, and urged that steps be taken to have the company lay track on the branch line from Onoway, from the present rail head at Robinson's Crossing to Rochford, 3.5 miles, at once, and the early construction of an extension to the Peace River. The Premier advised the delegation to apply to the Minister of Railways at Ottawa, and stated that the Alberta Government had \$3,000,000 of the proceeds of guaranteed securities lying in a bank for the completion of certain partially constructed lines in the province.

The British Columbia Railways Department report states \$1,864,808 were spent on the company's projected terminals during the year. The amount of work completed on each terminal at the date of the report was: Vancouver, 59%; New Westminster, 80%; Port Mann, 93%; Stevenson, 81%; Patricia Bay, 98%.

In connection with the provincially owned bridge over the Fraser River at New Westminster, an extension of the interlocking system had been arranged for and will be installed during April. The cost, \$3,043, will be borne jointly by the B.C. Government, the C.N.P. Ry. and the Great Northern Ry. During the year 26,745 passenger cars, 48,231 freight cars, and 9,230 cars in mixed trains crossed the bridge. (Mar., pg. 102.)

**Timiskaming & Northern Ontario Ry.** The Ontario Legislature has voted \$686,711.82 to defray the expenses of the T. & N.O.R. Commission.

## Canadian Pacific Railway Company's Annual Report.

Following are extracts from the report for the year ended Dec. 31, 1917. The accounts show the following results:—

Gross earnings .....	\$152,389,334.95
Working expenses .....	105,843,316.50

Net earnings .....	\$46,546,018.45
Deduct fixed charges .....	10,229,154.43

Surplus .....	\$36,316,875.02
Contribution to pension fund .....	500,000.00

\$35,816,875.02

Deduct net earnings of Pacific Coast steamships, commercial telegraph, and news department, transferred to special income account .....	1,968,682.56
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\$33,848,192.46

From this there has been charged a half-yearly dividend on preference stock of 2%, paid Oct. 1, 1917 \$1,613,638.42

And three quarterly dividends on ordinary stock of 1% each, paid June 30, 1917, Oct. 1, 1917, and Dec. 31, 1917..... 13,650,000.00

15,263,638.42

\$18,584,554.04

From this there has been declared a second half-yearly dividend on preference stock, payable April 1, 1918..... \$1,613,638.42

And a fourth quarterly dividend on ordinary stock of 1%, payable April 1, 1918 4,550,000.00

6,163,638.42

Leaving net surplus for the year... \$12,420,915.42

In addition to the above dividends on ordinary stock, 3% was paid from special income.

#### Special Income Account.

Balance at Dec. 31, 1916 .....	\$12,872,451.54
Less dividend paid Mar. 31, 1917 .....	1,950,000.00

\$10,922,451.54

Net revenue from investments and available resources .....	2,010,911.76
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Interest on deposits, and interest and dividends on other securities .....	2,697,087.20
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Net earnings ocean and coastal steamship lines .....	3,724,720.27
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Net earnings commercial telegraph and news department, rentals and miscellaneous .....	2,280,580.09
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\$21,635,750.86

Less payments to shareholders in dividends, 1917 .....	5,850,000.00
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\$15,785,750.86

From this a dividend has been declared payable April 1st, 1918.....	\$1,950,000.00
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The working expenses for the year were 69.46% of the gross earnings, and the net earnings 30.54%, as compared with 63.88 and 36.12%, respectively, in 1916.

The sales of agricultural land in the year were 789,055 acres for \$14,330,811,

an average of \$18.16 an acre. Included in this area were 58,681 acres of irrigated land which brought \$45.99 an acre, so that the average price of the balance was \$15.92 an acre. Before the adoption in 1913 of the policy of selling lands to settlers only, considerable areas had been bought by land companies and others for speculative purposes. Nearly all of these purchasers were in default and nothing was being done with the lands. To remedy this your directors negotiated the cancellation of the contracts and the restoration of the lands to the company. Some of these have already been resold to settlers, and through the company's agency, purchasers will be found for the balance at prices somewhat better than those specified in the cancelled contracts. The cancellations have been adjusted in the accounts submitted.

Besides the substantial amount already invested in the securities of, and loans to, Great Britain, Canada and the allies, your company subscribed to \$10,000,000 of the recent Canadian Victory Loan. A sufficient amount has been set aside to meet the instalments of the allotment payable in the current fiscal year.

The arrangement for the creation by the company of collateral trust bonds to be loaned to the Imperial Treasury was abandoned for the reasons given at the last annual meeting. As stated by the President in his address to the shareholders, the company did, however, with due authority, issue and deposit by way of loan with the nominees of the Imperial Treasury, \$40,000,000 currency 4% consolidated debenture stock. The loan is for 5 years from Jan. 1, 1917, but the Lords of the Treasury reserved the right to return the stock to the company at any time after Jan. 1, 1919, on giving three months notice, or to purchase the stock in whole or in part at 80% of its face value in New York funds or their equivalent. The annual premium of  $\frac{1}{2}\%$  resulting from this transaction was not taken into the revenue of the year, but was written off against the face value of the security. Apart from this, the capital account remains unchanged, all capital expenditures during the year having been met from surplus revenue.

The gross earnings of your transportation system in the fiscal year 1917 exceeded those of the previous year by \$13,000,000, but the net earnings were less by \$4,000,000. This large addition of \$17,000,000 to the working expenses may be attributed almost entirely to the advance



# Railway Rolling Stock Notes.

The Timiskaming & Northern Ontario Ry. has received 100 box cars from Canadian Car & Foundry Co.

The G.T.R. received the following additions to rolling stock during February: 3 snow ploughs from Russell Snow Plow Co., and 34 box cars, 80,000 lbs. capacity, from American Car & Foundry Co.

The C.P.R., between Feb. 14 and Mar. 14, received the following additions to rolling stock from its Angus shops, Montreal: 59 steel underframe coal cars, 1 steel underframe stores supply car, and 2 decapod locomotives.

The Timiskaming & Northern Ontario Ry. has been voted by the Ontario Legislature as follows:—\$50,000 for betterments to locomotives, superheaters, brick arches, etc., and \$10,000 for betterments to passenger cars, etc.

New York reports indicate that the U. S. Government will place some large rolling stock orders during the current year, probably covering 300,000 cars, and that the first instalment of about 60,000 will be placed during April. It is stated that master car builders have been devoting their time to the standardization of

bataan or Mexican mahogany. The window screens, sash locks, heating system, trap doors, steel vestibules, platforms, trucks and two-piece berth curtains, are all of the Pullman standard type. Following are other details:—

Length over end sills.....	73 ft. 6 in.
Length between truck centres.....	57 ft. 6 in.
Length over buffers.....	82 ft. 4½ in.
Hoppers.....	Duer Co.
Lighting.....	Electric and gas
Train connector.....	2 finger type, 30 voltage
Brakes.....	Westinghouse clasp type
Brake beams.....	Simplex clasp
Trucks.....	6 wheel
Journals.....	5 x 9 in.
Journal boxes.....	McCord

The illustration on this page shows one of the 10 consolidation locomotives being built for the Canadian Northern Ry., by Canadian Allis-Chalmers, Ltd., Toronto, some details of which have been given in previous issues. Four of these locomotives have already been delivered and the balance is expected to be delivered shortly. Following are the chief details:

Total weight.....	220,000 lb.
Weight on drivers.....	195,000 lb.
Tractive effort.....	39,684 lb.
Boiler, type.....	Extended wagon top
Boiler pressure.....	180 lb.
Firebox.....	64¼ by 110 13/16 in.
Grate area.....	49 sq. ft.

truck with McCord tender boxes, Simplex high speed tender brake beam, Westinghouse ET 6 brake with cross compound air pump and special air strainer. Other details are as follows:—

Weight on drivers.....	212,500 lb.
Weight, total.....	283,000 lb.
Wheel base of engine, rigid.....	16 ft. 6 in.
Wheel base of engine, total.....	35 ft. 1 in.
Wheel base of engine and tender.....	.68 ft.
Heating surface, firebox.....	242 sq. ft.
Heating surface, tubes.....	3,398 sq. ft.
Heating surface, total.....	3,640 sq. ft.
Driving wheels, diar.....	.63 in.
Journals, main.....	11 x 20 in.
Journals, others.....	10 x 20 in.
Cylinders, diar. and stroke.....	27 x 30 in.
Boiler, type.....	Extended wagon top, radial stay
Boiler pressure.....	180 lb.
Tubes, no. and diar.....	240—2 in.; 32—5½ in.
Tubes, length.....	20 ft.
Grate area.....	55.5 sq. ft.
Weight of tender loaded.....	166,000 lb.
Water capacity.....	9,000 U.S. gall.
Coal capacity.....	12 tons
Tank, type.....	Water bottom with vestibule connections
Truck wheel diar.....	.34 in.
Journals.....	6 x 11 in.
Brake beam.....	High speed, M.C.B. heads

## Dominion Government Orders for Rolling Stock.

The Minister of Railways has been devoting considerable time recently, to se-



Consolidation Locomotive for Canadian Northern Railway

freight cars, and that eight different types, known as M.C.B. cars, have been agreed upon, with a view to evolving one standard type of car suitable to all roads. The average price of the standard type, agreed upon at present, is given as \$3,000 each.

The Canadian Government Railways dining cars, 7 of which have been ordered from the Pullman Co., will be of steel, underframe, superstructure and exterior, and the interior finish will be of quarter cut oak with steel plates in the pantry and kitchen, and there will be seating capacity for 30 persons. Following are the chief details:—

Length over end sills.....	73 ft. 6 in.
Length between truck centres.....	57 ft. 6 in.
Length over buffers.....	81 ft. 10½ in.
Heating system.....	Pullman standard
Lighting.....	Electric and gas
Platforms.....	Pullman standard
Brakes.....	Westinghouse clasp type
Brake beams.....	Simplex clasp
Trucks.....	6 wheel Pullman standard
Journals.....	5 x 9 in.
Journal boxes.....	McCord malleable

The Canadian Government Railways sleeping cars, 14 of which have been ordered from the Pullman Co., as mentioned in our last issue, will contain 10 sections and 2 drawing rooms. They will be of steel, underframe, superstructure and exterior, and the interior finish will be of

Tubes, no. and diar.....	262-2 in.; 26-5¾ in.
Tubes, length.....	15 ft. 3 in.
Heating surface, firebox.....	180 sq. ft.
Heating surface, tubes.....	2,946 sq. ft.
Superheater type.....	Locomotive Superheater
Co.'s top header	
Driving wheel base.....	16 ft. 6 in.
Wheel base, engine and tender total.....	60 ft. 27½ in.
Length, engine and tender over all.....	68 ft. 7½ in.
Cylinder, diar. and stroke.....	24 x 32 in.
Driving wheels, diar.....	.63 in.
Journals, main.....	10 x 14 in.
Journals, others.....	5½ x 10 in.
Coal capacity.....	10 tons
Water capacity.....	6,500 imp. gall.

Canadian Government Railways have recently received 34 Mikado (2-8-2) locomotives from Canadian Locomotive Co. These are a portion of an order for 50 placed in the autumn, and some of them are being rented to the C.N.R. and G.T.R., to relieve the pressure on these companies motive power. The illustration given on pg. 145 is from one of those recently delivered, and the type built includes a number of the latest devices, covering the Locomotive Superheater Co.'s latest type of superheater, Tate flexible stay-bolts, brick arch, vanadium steel frames, metallic packing, Walschaert valve gear, power reverse gear, Franklin hard grease cellars, Franklin fire door, radial buffers, extended driving box, vestibule cab, detroit lubricator, incandescent headlight, side boiler checks, pedestal type tender

curing extra rolling stock necessary, not only for the Canadian Government Railways, but also for the Canadian Northern Ry., which is now owned by the government. The latter road, owing to its financial difficulties, has not been in a position to make any purchases for some time past, and is in fact more in want of rolling stock than the Canadian Government Railways, so that the bulk of the orders placed recently, and to be placed in the near future, are for the C.N.R. Early in March, a series of conferences were held in Ottawa between the Minister and various officials, the Railways Department being represented by G. A. Bell, Assistant to the Minister; A. E. Warren, Chief Operating Officer; and L. Lavoie, Purchasing Agent; the Canadian Northern Ry., by D. B. Hanna, Third Vice President; A. J. Mitchell, Assistant to Vice President; S. J. Hungerford, General Manager, Eastern Lines; and A. L. Graburn, Assistant Superintendent of Motive Power, and the Canadian Government Railways, by W. U. Appleton, Superintendent of Motive Power, and G. E. Smart, Superintendent of Car Department. W. D. Robb, Vice President, G.T.R., also attended, as that company is to lease some of the locomotives to be ordered. Since then, a large number of orders have been



placed and others are being put through. Under the system in vogue at Ottawa, the Minister decides on the orders to be given, subject to ratification by the Privy Council, and no official announcement is made until the passing of the necessary orders in council.

We are officially advised that up to Mar. 20 orders in council had been passed authorizing the following orders:

Canadian Car & Foundry Co., Montreal, 5,000, forty-ton, standard, steel frame, single sheathed, box cars, \$2,750 each, total \$13,750,000.

Eastern Car Co., New Glasgow, N.S., 750, steel underframe, 41 ft., 40 ton, flat cars, \$2,370.40 each, total \$1,777,800.

Eastern Car Co., 650, fifty-ton, enterprise composite coal cars, \$3,179.50 each, total \$2,066,675.

Hart-Otis Car Co., Montreal, 250 ballast cars, with side dump only, \$3,040 each, total \$760,000.

Hart-Otis Car Co., 200 ballast cars, with side and centre dump, etc., \$3,125 each, total \$625,000.

National Steel Car Co., Hamilton, Ont., 1,000, forty-ton steel frame box cars,

that, expeditiously. Full details of what we propose will be given at a later date."

### Meritorious Services by Canadian Pacific Railway Employees.

The educational bulletins issued by the general superintendents of the company's various districts, record the following meritorious services performed by employees recently:—

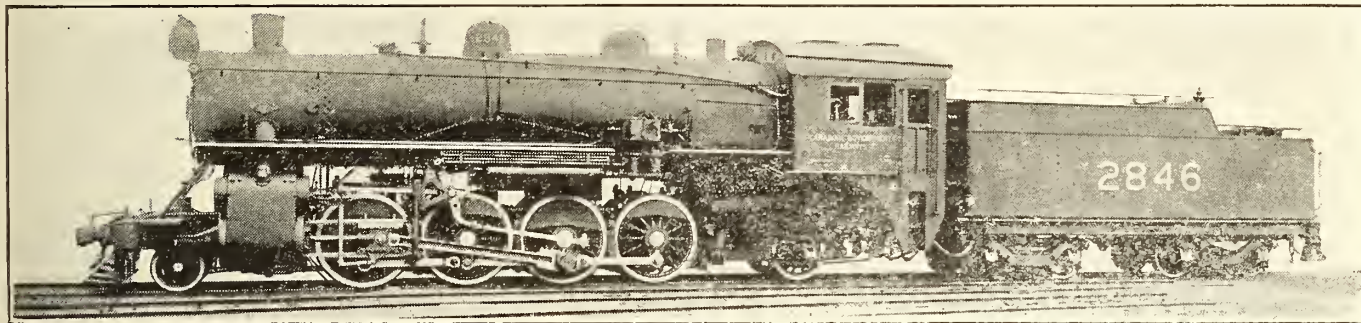
Conductor F. V. Perry ran a snow plough during a heavy storm recently, when the regular man deserted the plough. His action is commendable.

Conductor Knapp, while in charge of a freight train recently, discovered 10 in. broken off switchpoint at Spicer siding. He immediately reported it to the section foreman and dispatcher in order that special attention could be given.

Locomotive man P. McLaren, Kenora Division, while running locomotive on passenger train, observed on opposite track what seemed to be a broken rail. He slowed down an approaching train, which he met, and told the crew to look

man Lyons, when approaching Tompkins station, noticed coal shed opposite station on fire. On arrival in yard, locomotive was cut off train and with assistance of conductor Simmons and trainman MacDonald, coupled on to flat car and dump car of coal that were standing in front of shed and they were hauled out of danger. A hole was chopped in the side of the building and locomotive spotted with blow-off cock opposite, blow-off cock opened, and this, together with aid of squirt hose and by shoveling snow on the roof, fire was brought under control, and almost extinguished before the citizens arrived to assist. It is almost certain that the building, as well as the two cars and contents, would have been completely destroyed had it not been for the prompt action on the part of the locomotive and train crew, as with the wind that was blowing at the time it would have been impossible for the citizens to have extinguished the fire.

**False Creek Seawall Suit.**—The Imperial Privy Council, according to a press cable of Mar. 20, has dismissed the Van-



Mikado Locomotive for Canadian Government Railways

\$2,750 each, total \$2,750,000.

Pressed Steel Car Co., New York, 50 tank cars, 8,000 imp. gal., with 50-ton trucks, etc., 25 for general service, \$3,926 each, total \$98,150, and 25 for water service, \$3,770 each, total \$94,250.

The orders above mentioned aggregate \$22,603,175.

The Canadian Car & Foundry Co. has an order for 250 standard, all wood, refrigerator cars, with metal draft arms, at \$4,097 each, and further orders are to be placed for both freight and passenger cars.

Canadian Locomotive Co., Kingston, Ont., has orders for 60 Mikado freight locomotives at \$62,000 each, and 10 switching locomotives at \$40,500 each.

Montreal Locomotive Works has orders for 50 consolidation freight locomotives at \$58,000 each, and 30 Pacific passenger locomotives at \$60,000 each.

The consolidation locomotives will be assigned to the Canadian Northern Ry., and the Mikado locomotives will be rented to the G.T.R., with the option of buying them.

Sir Robert Borden, in speaking in the House of Commons, on Mar. 19, said: "The Minister of Railways has had under very serious consideration the provision of rolling stock and equipment for railways. We are confronted with the immediate acquisition of some 10,000 miles of railway, which will bring the total state railway mileage of this country up to about 15,000. It is useless for us to have that railway unless it is properly equipped. The great crops that we hope for during the present year and next year, which are so essential for war purposes, must be transported—and, more than

out for the spot indicated. They did so and found a broken rail. His judgment and interest are commendable.

Conductor R. F. Nixon, Woodstock Division, while walking over the top of his train, noticed a car badly canted. He went down the side ladder of the car to investigate, and upon finding an arch bar broken, immediately stopped the train, removed the brake and rigging, and had the car moved carefully to the next siding, where it was set out. His vigilance and prompt action doubtless prevented an accident.

Conductor C. R. Rupp, Brandon Division, noticed corner of baggage car take a slight drop when train moving. He pulled the air and on examination it was found that bolt which holds spring hanger had broken, and allowed sand board to drop to rail. With the assistance of locomotive man W. L. Glendenning, the sand board was jacked up and car taken through to terminal. If the conductor had not been attentive and had not taken prompt action, a serious derailment might have occurred.

The valve crank and rod on low pressure side broke accidentally at noon hour, resulting in compressor getting beyond control (or in common terms, running away). The 8 ft. fly wheel was turning 500 revolutions a minute (normal 80 revolutions a minute). The noise, which was terrific, attracted Geo. Singleton, aged 18, formerly call boy, now hostler's helper at Schreiber, Ont., who immediately ran to the engine room and had to face the large fly wheel and turned off the steam, thus avoiding the possible loss of life of others and also the destruction of compressor, engine, dynamos and building.

Locomotive man Jas. Wilks and fire-

couver City Council's petition for leave to appeal the Supreme Court of Canada's decision in the action by Champion & White relative to the False Creek flats site. This was an action in which the Supreme Court held that the building of the sea wall by the Canadian Northern Pacific Ry. on an area granted by the city, had cut off entrance to plaintiffs' wharf. The reclamation work at this point was held up during the hearing of the action, and will be stopped entirely unless some arrangement can be made.

**Railways & Canals Department Salaries.** The estimates submitted in the House of Commons recently provided for the following increases in salaries, among others: Graham A. Bell, C.M.G., Assistant to Minister, and Financial Comptroller of Department, from \$4,500 to \$5,000; E. E. Fairweather, Solicitor, from \$4,500 to \$5,000. Alex. Ferguson, Inspecting Engineer, has been transferred from the outside to the inside service, at his previous salary, \$4,000.

**U. S. Exports through Canada.**—A St. John, N.B., press dispatch of Mar. 14 states that it is reported that the U. S. Government has asked the C.P.R. if it will be able to handle 200,000 tons of export freight a month during the coming summer, and haul it to St. John for shipment. The C.P.R. is stated to have replied in the affirmative.

The Northern Ex. Co. has been registered under the British Columbia Companies Act, as an extra provincial corporation, to carry on business within that province, with head office at Vancouver, and H. Swinford, General Agent, Northern Pacific Ry., Vancouver, as its attorney.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alaska Ry.**—Since the United States Government undertook the build a railway in Alaska, the railway mileage of that district has been considerably increased. The Susitna route, which has been adopted, extends from Seward, on Resurrection Bay, to Fairbanks, on the Tanana River, 471 miles. This route includes the existing Alaska Northern Ry., which runs from Seward through the Kanai Peninsula, for 71 miles, to Turnagain Arm. The Alaska Northern Ry. has been purchased by the government for \$1,150,000. From Turnagain Arm, the route extends through the Susitna Valley and across Broad Pass to the Tanana River, and from there to Happy Station, at mile 460, where it connects with the Tanana Valley Rd., and from there on to Fairbanks. The Tanana Valley Rd. is being operated by the government under lease, pending its purchase. The work done to date includes the renovation of the old railways, and the construction of additional mileage, bringing the total mileage in operation after three years' work, to 299.5. In addition, 51 miles is completely graded and ready for track-laying, and 107 miles are partially graded, making altogether 457.5 miles completed or under construction. About 14 miles of a gap remains between the present end of construction and the Tanana River. (Oct., 1917, pg. 395.)

**Calgary & South Western Ry.**—The Alberta Legislature has incorporated a company with this title to build a railway from Calgary to the western boundary of the province, in Tp. 18, 19 or 20, with a branch to the C.P.R. Calgary-Edmonton line at Okotoks. It is also given power to acquire by purchase, lease or otherwise, the portion of the right of way of the projected Alberta-Hudson Bay Ry., covering generally the authorized route of the C. & S.W. Ry., together with any plans of surveys, and any authorization of the Government for the building of any line owned by the A. & H. B. Ry. The company's authorized capital is fixed at \$2,500,000; its office is at Calgary, and its provisional directors are: A. L. Smith, W. C. Robertson, R. E. Manning, all barristers of Calgary.

When the measure was before the legislature Mar. 5, it was stated that the route of the projected railway would be from Calgary via Priddis, to Millarville, thence through the oil fields district to Black Diamond, and from there westerly to the anthracite coal fields, the leases for which were held by P. Burns; that in order to avoid unnecessary duplication of railways in the vicinity, it was proposed to purchase the rights of the Alberta-Hudson Bay Ry. where the two routes coincided, or to arrange for the joint use of tracks; that it was not desired that any provincial aid be given the line; that the money for construction was already available, and that the line would be built as speedily as possible.

P. Burns is reported to have stated in Calgary, Mar. 8, that the coal areas would be definitely opened during the summer, and the railway located; that during next winter the rock work and side hill cuts on the right of way would be done, so as to have things ready for finishing up the grading and track laying in the spring of 1919. The coal mines which would be first opened up would be those at the head waters of Sheep Creek. (Mar., pg. 98.)

**Canadian Niagara Bridge Co.**—The Dominion Parliament is being asked to

incorporate a company with this title to construct a railway and general traffic bridge across the Niagara River, with the necessary approaches and terminal facilities. The proposed starting point of the bridge in Canada is not more definitely located, than from some point in Bertie or Welland Townships. Cahill & Soule, Hamilton, Ont., are solicitors for the applicants.

**Canadian Government Railways.**—Tenders are under consideration for the construction of a frame station building at Belledune, N.B.

A press report states that some additional siding facilities are to be provided at Sackville, N.B., to take care of mail, express and baggage traffic to and from Prince Edward Island by the car ferry route.

It is reported that during this year about 130 miles of light rails on the line are to be taken up and will be replaced with 80 lb. rails at present on the St. John & Quebec Ry. The rails taken up from the I.R.C. will be relaid on the St. J. & Q. Ry., which is owned by the Province of New Brunswick, and operated by Canadian Government Railways.

Tenders were received to Mar. 26 for building 51 section houses at various points between Moncton, N.B., and Winnipeg, Man. (Jan., pg. 12.)

**Central Canada Ry.**—A press report of Mar. 18, stated that the work on the piers of the bridge at Peace River Landing had been completed, and that everything was being got ready for the starting of the steel superstructure. (Mar., pg. 98.) See also Edmonton, Dunvegan & British Columbia Ry.

**Central Vermont Ry.**—The Board of Railway Commissioners has directed the company to lower a culvert on its line near Farnham, Que., upon the application of the Department of Agriculture to promote the cultivation of land in the vicinity.

**Eastern Maine Rd.**—W. H. Manfield, Bangor, Me., President, was in Fredericton, N.B., Mar. 9, in consultation with the New Brunswick Government with, it is said a view of building a branch line from his projected line to the St. John & Quebec Ry. The report states that the government did not look favorably on the proposal.

**Edmonton, Dunvegan & British Columbia Ry.**—J. D. McArthur, President, is reported to have said in Vancouver, B.C., Mar. 8, that no new construction will be gone on with this year, on the E.D. & B.C.R., nor on the Central Canada Ry. and Alberta & Great Waterways Ry., but that it is intended to finish up all work in hand, and to proceed with betterments and the development of traffic. (Mar., pg. 98.)

**Grand Trunk Pacific Ry.**—The Dominion Government has granted to the G.T.P. Branch Lines Co., lot 11, north side 16th St., east of Central Ave., Battleford, Sask., for terminals for the company's Cutknife Branch. (Feb., pg. 57.)

**Grand Trunk Ry.**—The company has completed its new brick freight shed at the corner of Sandwich St., and Maren-telle Ave., Windsor, Ont., and has begun the tearing down of the old shed at Brock St., on the river front. This old building was erected in 1853, by the old Great Western Ry., and was first used for traffic Jan. 31, 1854, it being the company's original passenger station in Windsor. (Feb., pg. 57.)

**Great Northern Ry.**—The company's new cut off along Brunette Creek, near Vancouver, B.C., has been completed, and a train service has been operated over it since Mar. 1. The work included the strengthening of the tracks along the creek, and the building of a steel and concrete bridge to carry the north road at Coquitlam. The cut off eliminates a level crossing and saves half a mile between Vancouver and New Westminster. (Feb., pg. 57.)

**International Bridge & Terminal Co.**—The Dominion Parliament is being asked for power to construct railway lines, not exceeding 6 miles in any one case, to connect the company's projected bridge with the works and railways of other companies. It is also desired that power be given to issue bonds for \$40,000 a mile in respect of the lines to be built. Mac-craken, Henderson, Green and Herridge, Ottawa, are solicitors for applicants.

**Kettle Valley Ry.**—The question of taxation is said to be holding up the development of the Copper Mountain district. The matter is now before the B.C. Legislature, and if a satisfactory settlement can be made, the development will, it is said, go on. The works include the building of a branch line from Princeton to Copper Mountain. A Vancouver press report of Mar. 21 said a contract for building the branch had been let to a Vancouver man. (Mar., pg. 98.)

**Lacombe & Blindman Valley Ry.**—A delegation of residents of Rimbey and vicinity waited upon the Alberta Government Mar. 11, to urge the completion of this partially constructed railway. The grading has been finished to Rimbey, and ties have been placed thereon. Track has been laid to Bentley, from Lacombe, but the remaining 17 miles still requires the rails and ballasting in order that the line might be operated. (Oct., 1917, pg. 393.)

**Montreal, Joliette & Transcontinental Jct. Ry.**—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Montreal northerly through the counties of Hochelaga, L'Assomption and Montcalm to Joliette, thence northerly and westerly to St. Michel des Saints, in Berthier county, and thence to the National Transcontinental Ry., a distance of about 180 miles. L. J. Kehoe, Ottawa, is solicitor for applicants.

**Port Canada Docks Ry. Co.**—The New Brunswick Legislature is being asked to extend for two years the time within which this company may build its projected railway. The company was originally incorporated in 1907 as the Canadian Terminal Ry. Co., to build a line from L'Etang Harbor to St. Croix, with branch lines. In 1912 an extension of time for construction was granted to a new set of provisional directors, of whom G. W. Marsh, St. George, N.B., was the most active. A further extension of time for construction was granted in 1915, and the name of the company was changed to Port Canada Docks Ry. (Mar., 1915, pg. 84.)

**Prince Edward Island Ry.**—C. A. Hayes, General Manager, Eastern Lines, Canadian Government Railways, with a number of other officials, returned to Moncton, N.B., Mar. 7, after a trip of inspection over the P.E.I.R. and the car Tormentine. A Charlottetown press report, Mar. 7, stated that Mr. Hayes made a statement there for publication to the effect that some preliminary steps would



be taken this year towards standardizing the gauge of the railway, but he could not say when the main work would be started. Ditching machines would be provided and the whole of the lines on the island would be ditched. The branch line from Emerald to Borden, which now carries the bulk of the traffic, would be practically rebuilt. The shortage of ties and rails would delay the widening of the gauge. (Oct., 1917, pg. 394.)

**St. John & Quebec Ry.**—The Lieutenant Governor in his speech at the opening of the New Brunswick Legislature, Mar. 7, said:—"The construction of the St. John & Quebec Ry. between Gagetown and Westfield has proceeded during the year as rapidly as labor conditions and scarcity of material would permit. On account of the extraordinary demand for steel rails for use overseas, as well as in this country, the Canadian Government Railways were unable to carry out their undertaking to provide the rails necessary for the completion of this section, but arrangements have recently been made preliminary to the taking up of the steel rails upon the Northern New Brunswick & Seaboard Ry., authority for which was given at the last session of the legislature. Construction of the road is at such a stage that with the assurance of steel for the track-laying, the company is able to look forward to completion of the railway, ready for transportation for the next fall and winter."

A press report Mar. 8, stated that arrangements have been made with the Dominion Government, under which 130 miles of the heavy steel rails on this line between Gagetown are to be taken up and handed over for use as relaying rails on the Intercolonial Ry., and that the rails taken up from that line will be laid on the St. J. & Q. Ry. (Jan., pg. 12.)

**Timiskaming & Northern Ontario Ry.** A deputation from the Gowganda district waited on the Ontario Government, Mar. 1, and asked for a grant of about \$7,000 a mile, towards the building of a 50 mile railway from Elk Lake to the Gowganda mining area. The deputation said if the government would not build a branch of the T. & N.O. Ry., it might be possible with such a grant to finance the undertaking privately. It was reported that possibly a grant of \$100,000 could be arranged. The legislature, however, was prorogued without any provision being made.

**British Columbia's Railway Liabilities.** British Columbia's financial statement for 1917, shows its railway liabilities financing under two heads, the first consisting of amounts paid for interest and on loan account, and the second showing the authorized and issued securities for which the province is liable both for principal and interest. The first section shows a total of \$267,056.93, of which are termed "deferred assets," made up as follows:—Nakusp & Slocan Ry., paid for interest, \$296,374.80; Pacific Great Eastern Ry., paid for interest, \$1,053,826.27; P.G.E. Ry., loan account, \$1,319,366.86. The second section comprises the following:—Canadian Northern Pacific Ry., securities due April 2, 1950, authorized \$47,975,000, issued \$40,157,524; Pacific Great Eastern Ry., due July 15, 1942, authorized and issued, \$20,160,000; Nakusp & Slocan Ry., due July 1, 1918, authorized and issued, \$647,072.

The annual tours of circuses round the country will not take place this year, the United States railways having issued notices that they will not handle circus trains.

## Increases in Freight and Passenger Rates Approved by Dominion Government.

The following order in council, P.C. 632, was passed at Ottawa, Mar. 14:—The Governor General in council, pursuant to the provisions of sec. 56 of the Railway Act, chap. 37, Revised Statutes of Canada, 1906, has had under consideration the petitions referred to in the order in council P.C. 229, of Jan. 30, 1918, and other petitions appealing from the Board of Railway Commissioners order, dated Dec. 26, 1917, providing for a general advance in freight and passenger rates, and has heard counsel for the petitioners and others, and has heard a further argument advanced at the adjourned hearing of such appeal on Mar. 1, 1918, and has considered all cases filed and all replies and rejoinders, and is pleased to order that the said order of the Board of Railway Commissioners be amended, by providing that it shall cease to operate one year after the declaration of peace following the present war.

The Governor General in council is further pleased to order that the going into effect of the said order as herein amended be not further postponed. Whereof the Board of Railway Commissioners and all other persons whom it may concern are to take notice and govern themselves accordingly. Certified copies hereof shall forthwith be transmitted to the Board of Railway Commissioners to counsel for the petitioners and other interested parties.

## Freight Rates on Clay, Sand, Gravel and Crushed Stone.

The Chief Railway Commissioner's judgment in the so-called 15% rate case, published in Canadian Railway and Marine World for February, on pg. 51, contained the following paragraph:—"Common clay and sand, gravel and crushed stone are commodities which cannot, in my view, stand a 15% increase. I would, however, permit the companies to increase their rates on these commodities both in eastern and western territories, by adding to existing rates not more than 5c a ton."

A circular issued by the board's secretary says:—"The reference to common clay and sand, gravel and crushed stone . . . was intended to be understood in the collective and not the particular sense; that is to say, the specific increase of not more than 5c a ton is to be understood to apply to all the commodities which have hitherto been carried under the special mileage scale, or under specific commodity items of the tariffs, at the same rates as those particularized in the judgment. Any tariffs in conflict with this announcement which have already been filed to take effect on Mar. 15, 1918, or which, bearing an earlier effective rate, were postponed in compliance with the order in council, must be amended in accordance herewith."

## Special Taxation of Canadian Pacific Railway.

The following order in council, P.C. 661, was passed at Ottawa, Mar. 14:—The Governor General in council, on the recommendation of the Prime Minister, is pleased, under the authority of the War Measures Act 1914, to order as follows:

The Canadian Pacific Ry. Co. shall pay to the Government of Canada, the following special taxes:—

One-half of its net earnings from railway operation, in excess of 7% on its common stock (after paying fixed charges, appropriation for pension fund, and dividends on preferred stock).

Income tax on its special income (inclusive of all its income, except earnings from railway operations), under the provisions of the Income War Tax Act, 1917, or any amendment thereof, hereafter enacted.

Provided, that the total amount to be paid each year by the company shall not be less than its net earnings in such year from railway operations, and from special income as defined above, in excess of 10% on its common stock (after paying fixed charges, appropriation for pension fund and dividends on preferred stock) up to \$7,000,000, or the amount by which its net earnings from railway operations exceed the net earnings from railway operations for the fiscal year ended Dec. 31, 1917, due to the increase in freight and passenger rates granted by the Board of Railway Commissioners order, dated Dec. 26, 1917.

The Governor General in council may make such regulations to provide for the full and effective carrying out of the provisions of these orders and for the collection, periodically, of the taxes herein imposed as to the Governor General in council may seem fit.

Payment in full of special taxes under this order shall in respect of earnings from and after Jan. 1, 1918, relieve the company of liability under the Business Profits War Tax Act, 1916, and any other Dominion act of like nature hereafter enacted, and (save as hereinbefore provided), under the Income War Tax Act, 1917.

This order shall be deemed to have come into force and effect on Jan. 1, 1918, and to continue in force and effect during the present war, and until further ordered.

## Railway Finance, Meetings, Etc.

**Greater Winnipeg Water District Ry.** Following is a report of operations for 1917:—Earnings for carrying freight, etc., \$396,402; cost of operation of railway, \$231,235; interest charges on capital invested in railway construction, \$90,855, and railway equipment, \$11,876, a total of \$102,731. Net credit on operating for the year, \$62,437. The debit balance on Dec. 31, 1916, was \$14,584, and the credit balance at the end of 1917, after paying all costs of operation, maintenance and interest on cost of railway equipment, \$47,851. For the period to Mar. 9, 1918, receipts from freight and passenger traffic are reported to have been \$11,845, and operating expenses \$5,715. There were 878 passengers carried east, and 842 west.

**Lacombe & Blindman Valley Electric Ry.**—The Premier of Alberta is reported to have informed a delegation Mar. 12, that this light railway from Lacombe towards Rimbey was paying operating expenses, and that as soon as it was completed to Rimbey, a profit might be expected.

**Timiskaming & Northern Ontario Ry.** Revenue from passenger traffic for January, \$44,130.48; from freight traffic, \$116,511.24; total revenue, \$160,641.72, against \$44,958.79 passenger, \$101,717.52 freight, and \$146,676.31 total revenue for Jan., 1917.

There was a further rearrangement and reduction of passenger trains on the principal lines Mar. 3 and 10, under the direction of the Canadian Railway Association for National Defence.



# Traffic Orders by Board of Railway Commissioners.

## Minimum Weights of Tan Bark.

General order 221, Feb. 26. Re Canadian Manufacturers' Association's application for an order disallowing increased carload minimum weights of tan bark, published in Supplement 8 to the C.P.R. Tariff C.R.C. no. E-3225, and Supplement 1 to G.T.R. Tariff C.R.C. no. E-3477, heard at Ottawa, Nov. 20, 1917: It is ordered that the minimum carload weights of tan bark, when carried under special commodity tariffs, be as follows: For cars not over 30½ ft. long, inside or platform measurement, 21,000 lb. For cars over 30½ ft. and not over 34½ ft. long, inside or platform measurement, 23,000 lb. For cars over 34½ ft. and not over 36½ ft. long, inside measurement for box and stock cars, and not over 36 ft. 10 in., platform measurement for flat cars, 28,000 lb. The schedules to give effect to this order to be published and filed to take effect not later than Mar. 11, 1918.

## Oleomargarine as a Packing House Product.

General order 222, Mar. 19. Re Canadian Manufacturers' Association's complaint, on behalf of the packing industry, that railway companies refuse to accept oleomargarine as part of minimum weight of packing house products, loaded in so-called pedlar cars on private sidings. Heard at Ottawa, Mar. 19, the Canadian Manufacturers' Association, Canadian Freight Association, Toronto Board of Trade, Pere Marquette Ry. and the Canadian Pacific, Grand Trunk, and Canadian Northern Railways being represented: It is ordered that the tariffs of the said railway companies, providing for the transportation of packing house products, fresh meats, and other articles in pedlar cars, be revised so as to include oleomargarine as packing house products.

## Stop-over for Completion of Live Stock Loading.

27034. Mar. 19. Re complaints of Toronto Board of Trade, the William Davies Co., of Toronto, against charge of \$5 a car by Pere Marquette Ry. for a stop-off for completion of loading of live stock. Heard at Ottawa, Mar. 19: It is ordered that the stop-over charge of \$5 a car for completion of loading of live stock be disallowed; and that the Pere Marquette Ry. be required, within one week from date of this order, to publish and file a new tariff showing a stop-over charge of \$5 a car.

## Express Rates on Cream in British Columbia.

27036. Feb. 26. Re complaints of Beechnut Creamery of Nelson, B.C., Nelson Board of Trade, Associated Boards of Trade of Eastern British Columbia, British Columbia Dairymen's Association, Curlew Creamery Co. of Curlew, Wash., C. Powlett, of Cowley, Alta., and Cranbrook Retail Merchants' Mutual Protective Association, against rates charged by Dominion Express Co. on cream in British Columbia. Heard at Victoria, B.C., June 5, 1917; Nelson, B.C., June 16, 1917, and Calgary, Alta., June 18, 1917: It is ordered that the Dominion Express Co.'s special mileage tariff for carriage of cream in British Columbia be extended beyond 75 miles, as follows:

Miles.	5 gal.	8 gal.	10 gal.
Over 75 and not over 100	40c.	45c.	60c.
Over 100 and not over 150	50c.	55c.	68c.
Over 150 and not over 200	60c.	65c.	75c.

The said new rates to be made effective not later than April 1, 1918. And it is

further ordered that the application for a reduction in the rates for the carriage of cream for distances not over 75 miles in British Columbia be refused.

## Cordwood Rates on A.C. & H.B. Ry.

27058. Mar. 6. Re complaint of Lyons Fuel & Supply Co., Steelton, Ont., against rates charged by Algoma Central & Hudson Bay Ry. on cordwood. Heard at Toronto Oct. 23, 1917, the A.C. & H.B. Ry. and the Standard Chemical Iron & Lumber Co. of Canada, being represented: It is ordered that the A.C. & H.B. Ry. forthwith amend its special local commodity tariff, C.R.C. 388, in so far as it applies on cordwood, in carloads, to provide the following rates, viz.: For distances not over 11 miles, 2c per 100 lb.; for distances over 11 miles and not over 20 miles, 2½c per 100 lb. That the said company be permitted, on lawful notice, to cancel its special local freight tariff on charcoal wood, C.R.C. 417, applicable only when the product of the said wood is shipped over the company's railway, and in place thereof and subject to the same application, to publish and file a special tariff to provide the following rates, viz.: Over 20 miles and not over 30 miles, 80c a cord; over 30 miles and not over 40 miles, 85c a cord; over 40 miles and not over 50 miles, 90c a cord. And whereas the C.P.R. and G.T.R., under the board's judgment of Dec. 26, 1917, increased their special charcoal wood rates by 15%; and whereas, by order in council P.C. 229, the time when the said increases were to become operative was extended until Mar. 15, 1918—It is therefore further ordered that, subject to the provisions of the said order in council, and such other order or orders in council as may issue in the premises, the A.C. & H.B. Ry. be permitted, on lawful notice, to increase its rates on charcoal wood as follows, viz.: Over 20 miles and not over 30 miles, to 92c a cord; over 30 miles and not over 40 miles, to 98c a cord; over 40 miles and not over 50 miles, to 103½c a cord.

## Cut Glass Rates.

27068. Mar. 16. Re Wallaceburg Cut Glass Works' application for lower rating than provided in Canadian Freight Classification 15 for cut glassware. Heard at Windsor, Ont., Nov. 22, 1917: It is ordered that the Pere Marquette Ry. publish and file a joint commodity tariff, applying the published and filed 3rd class rates from Wallaceburg, Ont., to Toronto and Montreal on cut glass jars, value not exceeding \$5 a doz., and so receipted for; and on cut glass tumblers, value not exceeding \$1 a dozen, and so receipted for, packed in barrels or boxes, and at owner's risk or breakage, in straight or mixed carloads, minimum weight 20,000 lb. a car. That the said tariff become effective not later than April 8, 1918. That the application for a reduction of the less than carload rating of Canadian Freight Classification of cut glassware be refused.

## Pere Marquette Railway Tariff.

27069. Mar. 16. Re Pere Marquette Ry.'s application for permission to cancel Canadian Northern Ry. as a party to its tariff C.R.C. 2048: Upon reading what is filed in support of the application, the Page Wire Fence Co., and the McGregor, Banwell Fence Co. offering no objections; and upon the recommendation of the board's Chief Traffic Officer, it is ordered that the P.M. Ry. be authorized to cancel the Canadian Northern Ry. as a party to its said tariff.

## Inspection of Goods Covered By Bill of Lading.

27079. Mar. 19. Re application of R. W. Hannah, of Toronto, for cancellation of the following clause on the order bill of lading approved by the board: "Inspection of goods covered by this bill of lading will not be permitted, unless provided by law, or unless permission is endorsed on this original bill of lading or given in writing by the shipper." Heard at Toronto, Feb. 15, 1918, the applicant, the Canadian Manufacturers' Association, Canadian Freight Association, the Toronto and Montreal boards of trade, the Grand Trunk, Canadian Pacific, and Canadian Northern Railways, and the Michigan Central Rd. being represented: It is ordered that the application be refused.

## Coal Rates to Preston, Hespeler and Guelph.

27081. Mar. 21. Re complaints of City of Guelph, the Preston, Hespeler, Kitchener, Waterloo, and Elmira boards of trade, and Hall-Zryd Foundry Co. and R. Forbes Co., that the rates on coal from the frontier gateways are excessive and discriminatory: Upon hearing the complaints at Toronto, Dec. 11, 1916, the City of Guelph, the Preston, Kitchener and Montreal boards of trade, the Dominion Sugar Co., Canadian Buffalo Forge Co., Consolidated Rubber Co., Canadian Manufacturers' Association, and Canadian Retail Coal Association being represented; and upon reading the further written submissions filed, and the recommendation of the Board's Chief Traffic Officer, it is ordered that the rates published on coal, in carloads, from Buffalo, Black Rock, and Suspension Bridge, to Preston, Hespeler and Guelph, Ont., in G.T.R. tariff C.R.C. no. E-3766 and Michigan Central Rd. tariff C.R.C. 2748, which became effective Mar. 15, 1918, be disallowed, and that in lieu thereof the following rates per ton of 2,000 lb. be published: To Preston, \$1.03; to Hespeler, \$1.03; to Guelph, \$1.08.

## Milling in Transit Arrangements at Montreal.

27085. Mar. 18. Re application of Montreal Board of Trade, on behalf of Dominion Flour Mills, Ogilvie Flour Mills, and St. Lawrence Flour Mills, for an order disallowing the portion of the following tariffs: Supplement 33 to C.R.C. no. E-1196; supplement 6 to C.R.C. no. E-3120; supplement 1 to C.R.C. no. E-3137; supplement 1 to C.R.C. no. E-3214, cancelling the milling in transit arrangement on grain milled at Montreal, and reshipped to points on the Canadian Government Railways, also to Halifax, N.S., for export; and re order 25904, Feb. 26, 1917: Upon reading what was filed subsequent to the hearing at Ottawa, Feb. 21, 1917, in support of the application, and on behalf of the C.P.R.; and upon the recommendation of the Board's Chief Traffic Officer, it is ordered that the transit arrangements at Montreal, applicable to grain from Western Canada handled by the C.P.R. via the all-rail or lake and rail routes, the products of which are reshipped to destinations on or via the Intercolonial Ry., or for export via Halifax, which were sought to be cancelled and withdrawn by the C.P.R. by certain supplements to its tariffs appearing in the recital hereto, be continued on a uniform basis of a charge of 2c per 100 lb. for the stop-over services at Montreal; the said charge to be an addition to the published tariff rates from Port Arthur and Fort William, or from the lake ports, as the



case may be, to the destinations of the products of the said grain; and it is also ordered that, upon the publication and filing of the tariffs to give effect to this order, order 25904, Feb. 26, 1917, be rescinded.

### Canadian Pacific Railway Construction, Betterments, Etc.

**Manitoba District.**—Tenders were received to Mar. 27, for the construction of reinforced concrete piles and slabs, rail concrete culverts, concrete arches and bridge piers required on the Manitoba District.

**Automatic Protection Signal Installation.**—We are officially advised, in connection with the installation of automatic protection signals at Rosser, Poplar, Bradbury, Winnipeg Beach and Whyte-wold, Man., referred to in Canadian Railway and Marine World for March, that the signals are to be three position, upper right hand quadrant, top of mast, low voltage electric, of the permissive type, designated by pointed end blades and staggered lunar white marker lights. The control will be by continuous track circuits extending through the station limits. The current for each track circuit will be supplied from three cells of primary battery connected in multiple, with a resistance unit in series with positive side of battery and rail, each circuit averaging about 3,000 ft. long. All track relays will be wound to 4 ohms resistance and uniform to Railway Signal Association specifications. Switch boxes at switches will shunt at the relay side of the track circuit and break the continuous circuit when the switch is thrown. No. 9 solid R.C.S.D. copper of the Railway Signal Association's specifications will be used for all leads from battery to track, track to relays, track to switch boxes and battery to signals; No. 14 wire as above will be used for cable from pole line to functions; no. 10 copper clad double braid weather proof wire will be used for line work.

**Saskatchewan District.**—Tenders are under consideration for the erection of a 100 ft. extension to the brick freight shed at Regina; the erection of brick boiler houses at Weyburn and at Swift Current; the erection of frame freight sheds at Varwood and Assiniboia; the extension of the car shops, ice house, and stockyards and the erection of concrete ash pits at Moose Jaw; the erection of a frame locomotive house at Colonsay; the laying of pipe lines at different points in the district, and the construction of three large concrete culverts.

We are officially advised that the present car shop at Moose Jaw is 165 x 65 ft., and that the addition will be a 100 ft. extension at the eastern end, with the necessary additional trackage.

**Grant Hall, Vice President and General Manager, Western Lines,** was in Regina, Mar. 12, where he was waited upon by a delegation representing various sections of the southwestern part of the province, to urge the construction of a branch line there as a war and greater food production measure. This is the district south of the Weyburn-Lethbridge line, through which a number of surveys have been made, one of them being for a line to the International Boundary.

**Alberta District.**—A press report states that the coaling plant at Lethbridge will be moved to Bow Island. As stated in Canadian Railway and Marine World for March, a new coaling plant is to be erected at Lethbridge.

We are officially advised that it is not contemplated to do anything in the way of the completion of the line between Manyberries and Altawan at present. This is the 32 mile uncompleted link of the Weyburn-Lethbridge line.

**British Columbia District.**—We are officially advised that the details of the projected transfer slip at Vancouver have not yet been decided upon; and that the passenger car repair shop to be built at Vancouver will be a leanto, on one side 225 x 12 ft. wide, and 75 x 25 ft. on the end of the present building, and that the necessary track extensions will also be made. (Mar., pg. 102.)

### Freight Rate Increases in the United States.

Washington, D.C., press dispatch, Mar. 10:—Following the recent 15% increase of class and commodity rates in Canada, the Interstate Commerce Commission has authorized a proportionate increase in rates from points in the U.S. to Canada on the leading railways. The lines affected directly are the Grand Trunk, Minneapolis, St. Paul and Sault Ste. Marie, Great Northern, Canadian Northern, Canadian Pacific and Duluth, Winnipeg and Pacific.

Washington, D.C., press dispatch, Mar. 15:—A general increase of 15% in commodity rates was granted today by the Interstate Commerce Commission to railways west of the Mississippi and north of the Ohio and Potomac Rivers, supplementing a similar increase allowed last June in class rates. The order applies only to articles shipped in large quantities, such as coal, brick, grain, food-stuffs, oil, stone, cement, lumber and other staple products shipped under the commodity classification. The new rates will go into effect as soon as railways file new tariffs, probably within a few weeks. The action will add about \$58,000,000 to the revenue of the eastern roads, although it will not actually increase their earnings, since the sum will revert to the government under the system of common operation, and railways will be paid on the basis of a fixed compensation outlined in the railway bill, just passed by Congress.

### Grand Trunk Railway Dividends Discontinued.

London, Eng., cablegram, Mar. 17: The Grand Trunk Ry. has issued a statement deeply regretting their inability to pay dividends on guaranteed or preference stocks owing to the exceedingly unfavorable results of the operations in the past year, arising out of circumstances entirely beyond the control of the management, notwithstanding that the company carried by far the largest traffic in its history. The enormous increase in wages, fuel, and all materials due to war conditions caused an immense increase in working expenses. Every effort was continuously made throughout the year to obtain an increase in rates to meet in some measure these serious conditions. Although these efforts were unsuccessful, the directors are hopeful that looking to the precedent established by Great Britain at the commencement of the war for the protection of British railway interests, and proposed in the legislation now under consideration by Congress regarding U.S. railways. The Canadian Government will in the near future take such action as will enable the companies to meet the present unparalleled war conditions.

### Dominion Aid for Canadian Northern and Grand Trunk Pacific Railways.

In the main estimates presented to the House of Commons, Mar. 22, provision is made for a loan of \$7,500,000 to the Grand Trunk Pacific Ry., \$3,000,000 of which is a revote of the unused portion of the loan voted in 1917. This loan is to be repayable on demand and to bear interest, payable half-yearly, at the rate of 6% a year. It is to be used for the payment of interest on G.T.P.R. and G.T.P.R. branch lines bonds, to meet deficits in the operations of the G.T.P.R., and to pay for betterments and equipment for that system. It is to be secured by a mortgage upon the company's undertaking, and it is to be expended subject to the government's direction. The company has agreed that it will constitute its board of directors as may be required from time to time by the government.

Another item provides for a loan of \$25,000,000 for the Canadian Northern Ry. The appropriation is made by way of loan, because, although the government has acquired the whole of the C.N.R. common stock, it has continued the C.N.R. Co. as a corporate entity. The government is thus making a loan to a company which it controls. The loan is to be made on the same terms as to payment of interest and repayment of principal as that to the G.T.P.R., and is to be secured by a mortgage on the C.N.R. The money is to be used to pay interest on debentures and maturing loans of the C.N.R., and to meet the cost of construction, betterments and equipment. Material for betterments and new equipment is being procured by the government.

The House of Commons, without discussion as to details, has voted one-sixth of the total amount of all the estimates.

In connection with the votes above mentioned, a return has been made by the Department of Railways, showing the distribution of the \$25,000,000 loan to the Canadian Northern Ry. in 1917. The return states that \$1,750,000 was paid to the Central Trust Co., New York, in payment of a loan to the C.N.R. The Guaranty Trust Co., New York, was paid \$300,000 in reduction of a loan, and the Columbia Trust Co., New York, received \$1,500,000.

The railway's rolling stock securities demanded a payment of \$4,976,500 for principal of equipment bonds, and of \$1,075,002, interest on equipment bonds. The remainder of the \$25,000,000, amounting to approximately \$15,400,000, was divided between the 13 companies forming the C.N.R. system. The \$25,000,000 was paid as follows:—

Nov. 19, 1917.....	\$12,500,000.00
Nov. 28, 1917.....	2,540,421.97
Dec. 10, 1917.....	54,750.60
Dec. 27, 1917.....	1,983,503.47
Jan. 9, 1918.....	1,250,000.00
Jan. 18, 1918.....	2,000,000.00
Jan. 24, 1918.....	2,090,000.00
Jan. 30, 1918.....	2,017,460.77
Feb. 4, 1918.....	653,863.79
Total .....	\$26,000,000.00

The Grand Trunk Pacific Ry. started a double weekly steamship service between Seattle, Victoria, Vancouver and Prince Rupert, Mar. 17, and announced that the direct service to Alaska would be resumed June 24.

The C.P.R. has been authorized by the Board of Railway Commissioners to start its morning train 509 from Montreal for Ottawa at 8.20, instead of 8.15 a.m., and to start its afternoon train from Montreal for Ottawa at 4.45 instead of 4.30.



## Canadian Transportation Men, Engineers, Etc. in the War.

Canada Steamship Lines, Ltd., honor roll shows 5 employes to have been killed in action, 9 to have been wounded and 111 as being on active service.

**Grand Trunk Pacific Ry. Employes.**—A press report states that 759 G.T.P.R. employes enlisted for military service; of these 87 have been reported killed or died from wounds, 10 are prisoners and 77 have been discharged from various causes.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, up to Nov. 30, 1917, had contributed \$19,656.75 to the Red Cross; \$24,534.61 to the Canadian Patriotic Fund, and \$13,765.16 direct

worth of British and German shells and hauled them back to the rear on their now famous light railways. Late one afternoon one large dump caught fire through spontaneous combustion, or perhaps a defective shell, and in the first explosion half a score of men were wounded. A young Canadian locomotive man, a sergeant, who in peaceful days used to drive the C.P.R. Imperial Limited from Moose Jaw to the west, in spite of the bursting ammunition, backed his little locomotive into the middle of the dump where the fire was blazing most fiercely. He connected a hose with his main steam

troops declare with confidence that they will."

The young locomotive man mentioned in Roland Hill's dispatch is said to be Sergeant Jack Manahan of Moose Jaw, Sask., who was mentioned in a previous dispatch for gallantry under fire. He comes from Perth, Ont. His wife and family live in Moose Jaw.

**The March Record.**—The Militia Department issued early in March a summary of the work done by Canadian railway troops in France and Belgium in January, as follows:—"Nine miles of broad gauge track were laid and 33 miles of narrow gauge. The average number of miles of broad gauge track maintained during the month was 49, and of the narrow gauge, 141 miles. The men were employed in locating, grading, ballasting, and laying lines. About 6,100 Canadians were engaged on the narrow gauge and 1,100 on broad gauge lines."

### PERSONAL NOTES.

**Lieut. F. P. V. Cowley**, who has been transferred from junior to associate member of the Canadian Society of Civil Engineers, was, prior to enlistment with the Canadian Expeditionary Forces, in the City Engineer's Department, Victoria, B. C., and was at one time a rodman on District F, National Transcontinental Ry., and later, assistant hydrographic surveyor on the Pacific Coast under the Marine Department.

**Lieut. L. I. Easton**, 14th Field Company, Canadian Engineers, C.E.F., who has been transferred from student to junior member, Canadian Society of Civil Engineers, was, prior to enlistment, Resident Engineer, Hudson Bay Ry., and prior to that was engaged as instrument man on harbor survey at Port Nelson, Man., and had also served with the Canadian Northern Ry. and Grand Trunk Pacific Ry., on preliminary location and construc-



On the Western Battle Front.  
Canadian Railway Troops passing through the ruins of a town after laying track. From Canadian official photograph loaned by C.P.R.

to employes of the railway who have enlisted. The commission operating the railway has, in addition to the foregoing, contributed \$20,000 to the funds named.

### Canadian Railway Troops Work.

Roland Hill has sent the following from the war correspondents' headquarters in France to the Militia Department at Ottawa:—"The men who drive the big locomotives of Canada's ocean-to-ocean trains across the prairies and through the mountains are made of stern stuff and have nerves as steady as the steel roads they travel. You meet many of them here at the war.

"There is the story of one of these men—in charge, too, of a built-in-Canada locomotive—whose great hospital train had just complete loading at a siding when the Huns opened deliberate fire on the casualty clearing station. They said it was a reprisal for the 'bombing of German hospitals' by British airmen (British airmen, of course, do not bomb hospitals). The track ahead had been hit, but not broken, by the shells which were ranging closer to the hospital with every shot. Without hesitation the Canadian locomotive man piloted his train safely over the damaged track to a clear line ahead and hundreds of helpless wounded were carried to safety. If the locomotive had ditched it meant certain destruction for the train.

"Another locomotive man, who had charge of a Canadian construction train at Gouzeaucourt when the Huns broke through after Cambrai, stayed with full steam up until all possible men and material had been loaded, and although the enemy were actually on the track behind him, tore down the grade to a safe siding well behind the new British line.

"The Canadian railway troops in their spare time have been assisting the hard-worked salvage corps. After Passchendaele they collected thousands of pounds

pipe and for half an hour pumped a stream into the burning mass, finally getting the fire under control. His little locomotive was pitted with shrapnel holes and his own escape was nothing short of miraculous. Several of the flying fragments tore his clothes. His example rallied other men and the fire was subdued before very great damage had been done. 'There was \$200,000 worth of British shells



On the Western Battle Front.  
A Canadian narrow gauge track crossing a French railway near Lens. From Canadian official photograph loaned by C.P.R.

in that dump. We couldn't stand by and see that go up,' he explained afterwards. And when the dump was safe he and his companions gathered the wounded into empty dinky cars and rushed them back along the little line to the safety of a dressing station.

"If the much-advertised German offensive does come there is no branch of the service will be more ready than these little bands of railway pioneers. These seems to be no end to the traffic their lines can carry. For months they have been preparing to play a bigger part than ever on the western front and the fighting

tion, and in the Bridge Department, C.N. R.

**Lieut. J. S. Galbraith**, son of the late John Galbraith, Dean of Applied Science Faculty, Toronto University, who went overseas with the 123rd Battalion, and was awarded the Military Cross, returned to Toronto early in March, with a number of other convalescing officers.

**Sec.-Lieut. R. G. Hall**, Royal Flying Corps, accidentally killed while flying in England recently, was son of the President of the Hall Engineering Works, Montreal, and a nephew of the Minister of Marine.



**Flight-Lieut. Ross Harrison**, who was recently reported to have been killed in a flying accident at Fort Worth, Texas, was at one time an inspector on construction on the Canadian Northern Ontario Ry., and later engaged on munitions work with the Canadian Locomotive Co., Kingston, Ont.

**Sergt. A. Hunter** of the Canadian Railway Troops, was awarded the Distinguished Conduct Medal recently for conspicuous gallantry and devotion to duty. While repairing a light railway line, his party was almost wiped out by heavy shell fire. He removed the wounded, collected another party and returned and repaired the line under heavy fire. He set a splendid example and showed an utter disregard of danger.

**Capt. R. H. Jarvis** of the Royal Flying Corps, who was accidentally killed in England, recently, had seen considerable service in France, having been mentioned in dispatches six times, and received the Military Cross in Nov., 1917. He had been in service at different times with the Grand Trunk Pacific Ry., Canadian Northern Ry. and the Toronto Harbor Commission.

**K. E. McLeod**, City Ticket Agent, Canadian Northern Ry., Victoria, B.C., has enlisted for military service overseas.

**Brig.-General A. D. McRae**, who has been appointed Director of Organization under the recently formed Ministry of Information, in Great Britain, and who was formerly a partner of the firm of Davidson & McRae, Land Agents, Canadian Northern Ry., has been granted a certificate of naturalization by the Dominion Government. He was born in the U.S.

**Sergt. O. Murphy**, Canadian Railway Troops, who has been awarded the Distinguished Conduct Medal for conspicuous gallantry and devotion to duty, took over the work on a light railway under very heavy shell fire when the officer was wounded, and he himself slightly wounded. He carried the line through successfully, so that ammunition could be delivered to the batteries, the wounded evacuated and the working parties disposed where they were required. He has repeatedly shown great skill in his work and an utter disregard of personal danger.

**Lieut. Norman Lowden**, Railway Construction Corps, Royal Engineers, B.E.F., who has been elected an associate member of the Canadian Society of Civil Engineers, was, prior to enlisting in 1916, Assistant Engineer in the City Engineer's office, Victoria, B.C., and was for some time engaged on railway location and construction in Northern Nigeria, as Assistant Engineer of the Public Works Department there. He is at present working on gauge railway construction at the front.

**Lieut. J. Phippen**, son of F. H. Phippen, K.C., General Counsel, Canadian Northern Ry., Toronto, is home on two months leave.

**Lieut.-Col. Blair Ripley**, D.S.O., Officer Commanding 1st Canadian Overseas Railway Construction Battalion, in France, and formerly Engineer of Grade Separation, C.P.R., Toronto, has been elected a member of the Institution of Civil Engineers, of England.

**D. DeC. Ross-Ross**, Assistant Chief Engineer, H.M.C.S. Hochelaga, has been transferred from student to junior member of the Canadian Society of Civil Engineers.

**Sapper G. W. Shanks**, Canadian Railway Troops, was awarded the distinguished conduct medal recently for con-

spicuous gallantry and devotion to duty. When a train load of ammunition had been set on fire by shelling, and severe explosions were taking place, he ran to the burning train, smothered the flames with sandbags, and kept them under control until water was brought, when he completely extinguished the fire. He did this, standing on the burning train, with splendid coolness, and utter disregard of personal danger, and it was due to him that many lives were saved.

**Lieut. J. G. Scott**, R.N.V.R., whose sudden death whilst serving at a Royal Navy depot in England, was reported recently, was educated at St. Catharines, Ont., and Toronto, graduating from the School of Practical Science with honors in 1914. He was subsequently in the office of the Chief Engineer of the Welland Ship Canal for about a year, and then joined the Royal Naval Air Service and took his pilot's certificate at Eastbourne, Eng., in 1916, and transferred to the R.N.V.R.



Major J. J. Sullivan  
Canadian Railway Troops.

**Brig.-General J. W. Stewart**, of Vancouver, B.C., now in the Canadian Railway Troops, gave a dinner in London, Eng., recently while on leave, at which Lord Beaverbrook proposed the health of General Smuts, who was the guest of honor.

**J. J. Sullivan**, formerly Construction Engineer and Roadmaster, C.P.R., who enlisted with the Canadian Railway Troops as a lieutenant, and is now a major, had to leave the front and go to England some little time ago, on account of stomach trouble, and returned to Canada in February on a 10 weeks furlough. Following is an extract from a letter written to his brother, J. G. Sullivan, M. Can.Soc.C.E., Chief Engineer, Western Lines, C.P.R., by a friend at the front:—"Our work is most interesting at times, particularly when the armies are advancing and the Hun is on the run. You can scarcely imagine the situation, and yet our good fellows take up the work just as if they were working on the Canadian prairies, under ordinary conditions. It is

surprising what men will and can do when they make up their minds. There is no one I can speak more highly of than your own brother; he really surprises me, as he is full of energy. Angus was evacuated to England some time ago and was operated on for kidney trouble; he is now in Scotland convalescing. I hardly think that he will be fit to return here any more. Immediately he left, I promoted Jerry to the rank of major and put him in charge of Angus' company. He did splendidly, but owing to the constant strain under shell fire, he broke down later and was evacuated to England about three weeks ago. I called to see him on several occasions and pointed out to him that he was trying to do too much, and told him to let the younger men keep more in the advanced areas, but you know what Jerry is, he wanted to be always at the front, and between shell shock and a general nervous condition, he broke down completely. In his collapse I have no hesitation in saying that Col. Macdonald lost one of his most efficient officers. We hope that with a few months rest he will be fit again, but I am afraid that his age is against him, as this is not an old man's game. I know that I am older than Jerry, but my job is easy, in comparison to the fellows that are constantly under the strain, as I go and come when I like. Barber is another man that has done nobly; I cannot find words that would half tell you of the splendid work he is doing."

**Lieut. J. G. Troup**, M.C., who was recently reported to have been admitted to one of the stationary hospitals in France, was, prior to the war, in C.P.R. service, having been stationed at various places between the Atlantic and Pacific coasts, the latter portion of his service being in the Superintendent's office at Winnipeg.

**G. E. Walkem**, formerly Managing Director, Vancouver Machinery Depot, Vancouver, B.C., received his commission as a lieutenant in the Royal Engineers, July, 1916, and was ordered to Egypt, where he was assigned to work on the railway and water pipe line for the Egypt Expeditionary Force operating in the Sinai desert. He followed up the work of that force and was promoted to captain in 1917, and has now reached the rank of lieutenant-colonel. He is in charge of railway construction with the British force in Palestine. He is a graduate of McGill University, a member of the Institution of Mechanical Engineers, Eng.; the Canadian Society of Civil Engineers, and of the American Institute of Electrical Engineers.

**Fraser River Bridge, New Westminster.** The tolls received by the British Columbia Government as tolls for traffic over the bridge across the Fraser River at New Westminster for the 9 months ended Dec. 31, 1917, were \$32,580.57. The bridge is leased for railway purposes to the Great Northern Ry., and is used also by the Canadian Northern Pacific Ry., those two companies contributing the largest amount of revenue.

**Accident Reports.**—The Board of Railway Commissioners has revised its form, schedule A, of the return required by order 7472, July 8, 1918, and has advised railway companies that the new form is to be used as soon as their existing supply of forms is exhausted.

**Naming of C.P.R. Locomotives.**—It is semi officially announced that the C.P.R. will name a number of its locomotives after locomotive men who have in the management's opinion rendered long and meritorious service.



# Mainly About Railway People Throughout Canada.

**R. S. Elsworthy**, General Agent, C.P.R., Minneapolis, Minn., has been elected President of the Minneapolis Passenger Association.

**John Cameron**, who died at Toronto, Mar. 18, aged 88, was in G.T.R. service for about 45 years, as a car builder, and later as a car inspector.

**Lord Shaghnessy**, President, C.P.R., has presented the Canadian Club, New York, with a number of books, to form the nucleus of a library.

**James Hardwell**, Chief Traffic Officer, Board of Railway Commissioners, Ottawa, and Mrs. Hardwell, are spending a short time at Atlantic City, N.J.

**E. W. Oliver**, B.A.Sc., M.Can.Soc.C.E., Assistant Engineer, Canadian Northern Ry., was in the Toronto General Hospital for about a week during March, for a minor operation.

**Hon. John Oliver**, Minister of Railways, and of Agriculture, for British Columbia, has also been appointed Prime Minister of that province, succeeding Hon. C. H. Brewster, deceased.

**A. D. MacTier**, General Manager, Eastern Lines, C.P.R., returned to Montreal, Mar. 21, after a brief visit to England and France, where his son is with the Canadian Expeditionary Forces.

**James McGeough**, chief clerk, City Ticket Office, C.P.R., Toronto, was presented with a purse of money by his associates, on leaving to take up his new appointment as City Passenger Agent, C.P.R., Boston, Mass.

**H. Stephenson**, shop foreman, Grand Trunk Pacific Ry., Regina, Sask., was presented with a gold watch by the shop staff, Mar. 15, on leaving for Prince George, B.C., where he has been transferred in a similar capacity.

**W. F. Tye**, M.Can.Soc.C.E., has been awarded, by the Canadian Society of Civil Engineers, the Czowski medal for the best contribution to Canadian engineering literature during the past year, viz.: his paper on Canada's railway problems.

**Lord Shaghnessy**, who underwent an operation at the Royal Victoria Hospital, Montreal, March 18, for cataract, was reported, at the time of writing, to be progressing satisfactorily, with excellent prospects of saving the sight of the eye affected.

**Helen Ham**, who died following an attack of appendicitis, and was buried at Whitby, Ont., Mar. 8, was daughter of C. N. Ham, Secretary, Express Traffic Association of Canada, and granddaughter of George Ham, of the C.P.R. headquarters staff, Montreal.

**S. C. Stickney**, Assistant to Vice President, Erie Rd., New York, who died at Englewood, N.J., towards the end of February, aged 53, was son of the late A. B. Stickney, formerly President, Chicago & Great Western Ry., and first General Superintendent of the C.P.R., at Winnipeg, in 1881.

**Herbert R. Yates**, C.E., who died at Brantford, Ont., Mar. 25, aged 63, was the only surviving son of the late Henry Yates, C.E., at one time Chief Engineer of the Grand Trunk Ry. He was born at Hamilton, Ont., and was for some time engaged with his father as a railway contractor, chiefly in Michigan.

**R. J. Swain**, City Electrician, St. Boniface, Man., who was elected an associate member of the Canadian Society of Civil

Engineers, recently, was, at different periods in service with the Toronto Ry., Montana Power & Light Co., Cascade Power & Light Co. in British Columbia, C.P.R. Telegraphs in Manitoba, Bell Telephone Co., and Winnipeg Electric Ry.

**W. W. Butler**, Vice President and Managing Director, Canadian Car & Foundry Co., Montreal, was taken ill in Ottawa early in March, being threatened with pneumonia, and was laid up at the Chateau Laurier for about a week. He was sufficiently recovered to be able to return to Montreal, Mar. 15, and left there shortly afterwards for Florida, intending to be absent some weeks.

**W. P. Brereton**, City Engineer, Winnipeg, who has been transferred from associate member to member of the Canadian



**G. E. Smart**  
Superintendent of Car Department, Canadian Government Railways

Society of Civil Engineers, is a member of the Winnipeg and St. Boniface Harbor Commission. He was Assistant Engineer, under Smith, Kerry & Chace, on the construction of the hydro electric power plant for Winnipeg, and has had considerable experience in Canada and the U.S.

**A. J. Meyers**, until recently Chief Draftsman, Quebec Bridge Board of Engineers, who has been transferred from associate member to member of the Canadian Society of Civil Engineers, has served at different periods, as draftsman, Dominion Bridge Co., Hamilton Bridge Works, Locomotive & Machine Co., now Montreal Locomotive Works, Structural Steel Co., and from 1909 with the Quebec Bridge Board of Engineers.

**M. B. Atkinson**, until recently assistant chief draftsman, Board of Engineers, Quebec Bridge, who has transferred from associate member to member of the Canadian Society of Civil Engineers, has served at various periods, as follows: in structural department, Locomotive & Machine Co., now Montreal Locomotive

Works; designing substructure and superstructure for Grand Trunk Pacific Ry. bridges between Winnipeg and Prince Rupert, and from 1910 in service of Quebec Bridge Board of Engineers.

**A. E. Foreman**, B.C. Public Works Engineer, Victoria, who has been transferred from associate member to member of the Canadian Society of Civil Engineers, has served with the British Columbia Electric Ry., Vancouver, B.C., the Canadian General Electric Co., Peterborough, Ont., Resident Engineer in charge of the construction of the hydro electric plant at Revelstoke, B.C., Supervising Engineer of the Dallas Road sea wall, Victoria, B.C., and as Assistant City Engineer, Victoria, B.C.

**Frederick A. Rutherford**, who has been appointed Inspector of Transportation, G. T.R., Montreal, was born at Parkhill, Ont., Sept. 16, 1877, and entered G.T.R. service Jan. 18, 1894, since when he has been, to July, 1894, assistant to agent, Aylmer, Ont.; July, 1894, to July, 1900, telegraph operator, at various stations; July, 1900, to Jan., 1908, dispatcher, London, Ont.; Jan., 1908, to Mar., 1914, Chief Dispatcher, London, and Stratford, Ont.; Mar., 1914, to June 1917, Trainmaster, Battle Creek, Mich.; June, 1917, to Feb. 1, 1918, Trainmaster, Durand, Mich.

**Colin D. MacKintosh**, who has been appointed Superintendent, Lethbridge Division, Alberta District, C.P.R., Lethbridge, was born at Auckland, New Zealand, Sept. 24, 1882, and entered C.P.R. service in Sept., 1905, since when he has been, to 1906, in junior positions in the engineering department; 1906 to 1909, transit man on location survey; 1909 to 1910, Resident Engineer; 1910 to 1911, Locating Engineer; 1911 to 1913, Assistant Engineer on Construction; 1913 to June, 1915, Division Engineer; June, 1915, to Mar. 1, 1918, Superintendent, Medicine Hat Division, Alberta District, Medicine Hat.

**Richard H. L'Hommedieu**, formerly General Manager, Michigan Central Rd., who died at Detroit, Mich., Mar. 18, was born at Cincinnati, Ohio, Dec. 29, 1850, and entered railway service in 1870, since when he had been, to 1872, apprentice in locomotive machine shops, Cincinnati, Hamilton & Dayton Ry.; 1872 to 1873, clerk to Division Superintendent, Chicago, Burlington & Quincy Rd.; 1873 to 1887, Trainmaster, Michigan Central Rd.; 1887, chief clerk to Superintendent, same road, Jackson, Mich.; 1877 to 1879, Trainmaster, same road, Jackson, Mich.; 1879 to 1890, Superintendent, Western Division, same road, Chicago, Ill.; Sept., 1890, to Apr., 1896, Assistant General Superintendent, and from Apr., 1896, General Superintendent, and subsequently, to his retirement, General Manager, same road.

**J. M. Jones**, City Engineer, Port Arthur, Ont., who has been transferred from associate member to member of the Canadian Society of Civil Engineers, was born at Dowlais, Wales, Nov. 18, 1882, and entered C.P.R. service in Apr., 1900, since when he spent two months in the Engineering Department, Winnipeg; two months as clerk and draftsman; 13 months as rodman and draftsman, Fort William, Ont.; 1903, instrument man on elevators, Canadian Northern Ry., Port Arthur, Ont.; Oct. to Dec., 1903, on renewal of piers, Broadway bridge, Winnipeg; Dec., 1903, to Mar., 1906, in charge of civil engineering work, Winnipeg Electric Ry.; Apr. to June, 1906, in charge of survey party, Manitoba Lines, C.P.R.; and since



the latter date, associated with municipal engineering at Port, Arthur, Ont.

**Herbert Gates Reid**, who has been appointed Superintendent of Rolling Stock, Canadian Government Railways, Transcona, Man., was born at Pembroke, Ont., Oct. 27, 1863, and entered railway service in 1884, since when he has been, to Nov., 1884, wiper, C.P.R., North Bay, Ont.; Nov., 1884, to Nov., 1887, fireman, C.P.R., North Bay, Ont.; Nov., 1887, to Dec., 1905, locomotive man, C.P.R., North Bay, Ont.; Dec., 1905, to June, 1906, relieving Road Foreman of Locomotives, C.P.R., North Bay, Ont.; June, 1906, to Feb., 1907, locomotive man, C.P.R., North Bay, Ont.; Feb. to Apr., 1907, Locomotive Foreman, C.P.R., Chapleau, Ont.; Sept., 1907 to Oct., 1908, District Master Mechanic, District 1, Lake Superior Division, C.P.R., North Bay, Ont.; Oct., 1908, to Apr., 1915, Master Mechanic, Lake Superior Division, C.P.R., North Bay, Ont.; Apr., 1915, to May, 1916, Master Mechanic, Saskatchewan Division, C.P.R., Moose Jaw; May to Sept. 30, 1916, Master Mechanic, District 3, National Transcontinental Ry., Transcona, Man.; Sept. 30, 1916, to Mar. 15, 1918, Assistant Superintendent of Rolling Stock, Canadian Government Railways, Transcona, Man.

**W. J. Hamilton**, who has been appointed Locomotive Foreman, G.T.R., Brockville, Ont., entered railway service in 1883, since when he has been, to Oct., 1906, laborer, stripper and engine tester, G.T.R., Stratford, Ont.; Oct., 1906, to July 1, 1907, Road Foreman of Locomotives, Central Vermont Ry., St. Albans, Vt.; July 1, 1907, to June 30, 1908, Locomotive Foreman, G.T.R., Palmerston, Ont.; June 30, 1908, to Dec. 31, 1909, Locomotive Foreman, G.T.R., Stratford, Ont.; Dec. 31, 1909, to Oct. 6, 1910, Master Mechanic, G.T.R., Battle Creek, Mich.; Oct. 6, 1910, to Mar. 18, 1911, Master Mechanic, G.T.R., Stratford, Ont.; Mar. 18, 1911, to Dec. 23, 1913, Master Mechanic, Canadian Government Railways, Cochrane, Ont.; Dec. 23, 1913, to Mar. 1, 1914, Night Locomotive Foreman, G.T.R., Stratford, Ont.; Mar. 1 to Nov. 16, 1914, Master Mechanic, Canadian Government Railways, Cochrane, Ont.; Nov. 16, 1914, to May 4, 1915, Machinist, G.T.R., Stratford, Ont.; May 4, 1915, to Aug. 1, 1917, Master Mechanic, Canadian Government Railways, Cochrane, Ont.; Aug. 1, 1917, to Feb. 28, 1918, machinist, G.T.R., Stratford, Ont.

**C. A. Cotterell**, who has been appointed Superintendent, Medicine Hat Division, Alberta District, C.P.R., Medicine Hat, was born at Enden, Eng., Jan. 18, 1877. He entered C.P.R. service as a messenger at Montreal in June, 1888, and in Feb., 1894, was appointed an operator on the Farnham Subdivision, south of Montreal, and until 1898 occupied various positions as operator, relieving agent and station agent on Eastern Lines, after which he transferred to the Crowsnest Subdivision and acted as agent at various points, and as dispatcher at Cranbrook, B.C., until 1901, when he was transferred to Fort William, Ont., as dispatcher, and subsequently served in that capacity at various points on the Western Lines, and as Chief Dispatcher at Fort William, Ont., Regina and Saskatoon, Sask., and Revelstoke, B.C., as Trainmaster at Revelstoke, B.C., Terminal Trainmaster at Vancouver, B.C., acting Superintendent at Revelstoke, Nelson and Vancouver, B.C., until Sept. 1, 1913, when he was appointed Superintendent, District 2, British Columbia Division, Vancouver. From Apr. 1, 1916, to Mar. 1, 1918, he has been Superintendent, Lethbridge Division, Alberta District, Lethbridge.

**John A. Clancy**, who has been appointed Trainmaster, Districts 27 and 28, Detroit Division, Western Lines, G.T.R., Durand, Mich., was born at Walkerton, Ont., June 8, 1884, and entered G.T.R. service June 2, 1901, since when he has been, to Sept. 26, 1901, office boy, Local Freight Office, Toronto; Sept. 26, 1901, to July 1, 1902, stenographer to Terminal Superintendent, Toronto; July 1 to Sept. 23, 1902, stenographer to District Passenger Agent, Toronto; Sept. 23, 1902, to Apr. 6, 1903, stenographer and clerk, Bridge and Building Department, Durand, Mich.; Apr. 6, 1903, to Nov. 21, 1905, chief clerk to Trainmaster, Durand, Mich.; Nov. 21, 1905, to Mar. 1, 1906, clerk to Master of Transportation, Durand, Mich.; Mar. 1, 1906, to July 1, 1910, Car Distributor, Durand, Mich.; July 1, 1910, to Jan. 2, 1911, chief clerk, Car Demurrage Bureau, Detroit, Mich.; Jan. 2, 1911, to Feb. 8,

draftsman, Nine Elm Works, L. & S.W.R., London, Eng.; June, 1906, to Jan., 1907, supervising locomotive statistics and operation, same company; Feb., 1907, to Mar., 1909, fitter, Angus Shops, C.P.R., Montreal; Mar. to Oct., 1908, in tests department, Angus Shops, C.P.R., Montreal; Oct., 1908, to July, 1909, Assistant Locomotive Foreman, C.P.R., North Bay, Ont.; Aug., 1909, Assistant Locomotive Foreman, C.P.R., Chapleau, Ont.; Sept., 1909, to Sept., 1912, Locomotive Foreman, C.P.R., Schreiber, Ont.; Sept., 1912, to July, 1914, Locomotive Foreman, C.P.R., Hochelaga, Que.; July, 1914, to Mar., 1918, Master Mechanic, Montreal Terminals Division, Quebec District, C.P.R., Montreal.

## The Work of the Canadian Railway Association for National Defence.

**Bulletin 3.**—The association issued this bulletin to the public Mar. 1, dealing with the following subjects:—Where the Canadian freight car spends its days. What demurrage figures indicate. New methods of handling l.c.l. freight. Re routing and through billing. Cold weather and car movement.

### City and Town Ticket Offices.

The association's attempt to close all city and town ticket offices and to restrict the sale of tickets to station offices, which appears to have been taken somewhat precipitately and without previous investigation, not having been successful, steps are now being taken to consider the question of a reduction in the number of "up-town" offices, with a view to conserving fuel and man power, and the railways have been asked to furnish the following information as to such offices they maintain:—Name of city or town. Population. Railways. Is office joint with express or telegraph company? Is rent paid by railway company or agent? Is remuneration paid agent by salary or commission?

### Guard Rails, Vestibule Doors and Platforms.

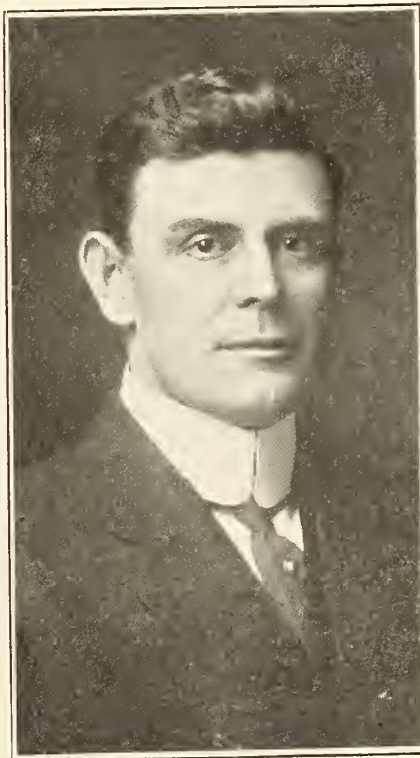
The Board of Railway Commissioners having urged that standard regulations be placed in effect on all railways governing the handling of guard rails, vestibule doors and platforms on passenger cars, the association has had a set of rules drafted which have been submitted to all railways, which have been asked to state whether they are agreeable to same being submitted to the board to be made applicable to all railways.

### Advertising On Cars.

In answer to a proposal that railways extend to certain organizations the privilege of displaying advertisements on railway cars, the applicants have been notified that such permission cannot consistently be given.

### Leasing of Freight Cars to Outside Concerns.

In view of the existing severe shortage of railway freight equipment of all classes, it has been suggested that regulations be promulgated prohibiting the leasing the freight cars to outside concerns, for local or intra-plant service. It has been found, furthermore, that in certain cases, in order to ensure their car requirements being filled, shippers having freight for regular movement between points a short distance apart, have leased cars from the railways, thus placing at a disadvantage other shippers who are unable to adopt this practice. In order that the matter may be fully considered, member lines have been asked to submit to the association a statement of all freight



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W. U. Appleton  
Superintendent of Motive Power, Canadian Government Railways

1912, Car Distributor, Durand, Mich.; Feb. 8 to Oct. 15, 1912, Travelling Car Service Agent, Detroit, Mich.; Oct. 15, 1912, to Jan. 23, 1913, Assistant Superintendent of Terminals, Detroit, Mich.; Jan. 23, 1913, to Apr. 20, 1914, chief clerk to General Superintendent, Chicago, Ill.; Apr. 20, 1914, to Feb. 1, 1918, Division Agent, Western Lines, Chicago, Ill.

**James Frederick Gildea**, who has been appointed Division Master Mechanic, Pennsylvania Division, Delaware & Hudson Co., Carbondale, Pa., was born at Strood Park, near Horsham, Sussex, Eng., and entered railway service in June, 1900, as an engineering apprentice, Nine Elm Works, London & South Western Ry., and on the conclusion of his apprenticeship, in June, 1904, he was presented by the directors with a special prize for the highest place in the apprentices technical examinations, with 100%. He was, from June, 1904, to June, 1905, fireman, all classes of service, L. & S.W.R., Salisbury, Eng.; June, 1905, to Jan., 1906, on engineering staff, Southampton Docks and R.M.S. Alberta, L. & S.W.R., Southampton, Eng.; Jan. to June, 1906, locomotive



cars leased by them to outside concerns, including the following information:—Number and class of cars leased; name and location of lessee; point or points at which cars being used; rate of rental per car per day; period of lease.

#### Labelling Delayed Freight Cars.

The commission on car service adopted the following resolution recently concerning use of labels on waybills accompanying delayed cars:

"This system of drawing attention to delayed shipments, and calling for preferred movement of such cars, is in vogue on a number of member lines which have submitted samples of labels, used by them. One of the most suitable is that of the New York Central Rd. The label used on this line measures an inch square, printed in red on white paper, as follows: "D. C.—This car has been delayed and must receive preferred attention."

In the commission's opinion, the adoption of a system of this kind should include means of guarding against indiscriminate or unauthorized use of labels, and local officials should examine waybills bearing labels, as opportunity offers, so as to ensure cars accompanied by same receiving the desired attention.

#### Steel Rail Supplies for Railways.

In consequence of the urgent demand for rails, for relaying, by practically all the principal Canadian railways, the Minister of Railways, under the authority of an order in council, has ordered from the Dominion Iron & Steel Co., Sydney, N.S., 1,000 tons, 85 lb. steel rails, Canadian Government Railways standard, delivery to start Apr. 1, and rolling to continue at full capacity of mill until completion of order, the cost of manufacture to be investigated and the price to be fixed at a later date. These rails will be apportioned by the Railways Department as follows: Canadian Government Railways, 140 miles; Canadian Northern Ry., 170 miles; Canadian Pacific Ry., 300 miles; Grand Trunk Ry., 140 miles.

In order to obtain further rails for relaying on the Canadian Government and Canadian Northern main lines, it is proposed to lift about 120 miles of 80 lb. rails from the St. John & Quebec Ry., in New Brunswick, and to replace them with lighter rails, either the Russian ones referred to further on in this article, or other light ones to be taken off the Intercolonial. It is probable that some at least of the heavy rails now laid on the Hudson Bay Ry., between Pas, Man., and the rail head, 340 miles, will be lifted and replaced with lighter rails, probably the Russian ones. A considerable quantity of heavy rails will also probably be lifted from yards and sidings on the National Transcontinental Ry.

The Minister of Railways has bought in the United States, for the Dominion Government, 37,375 tons of steel rails, which were rolled for the Russian Government, but were not delivered to it. They are of a Russian section, 67½ lb. to the yard, and will be sufficient to lay 355 miles of track, at 105 tons to the mile. Delivery is being taken as fast as cars can be obtained. A further supply of some 2,250 tons, sufficient to lay 150 miles, is being negotiated for. The Russian rails will be used on the Canadian Government Railways and the Canadian Northern for relaying branch lines and sidings, from which heavier rails may be lifted for main line purposes, and some may be used to replace heavier rails which may be lifted from the Hudson Bay Ry., as stated above.

#### Death of Sir Collingwood Schreiber.

The death took place at his home, Ottawa, Ont., Mar. 23, of Sir Collingwood Schreiber, K.C.M.G., Hon.M.Can.Soc.C.E., after an illness lasting some months. He was born in Essex, Eng., and came to Canada in 1852. In that year he was engaged on the Toronto & Hamilton Ry. engineering staff, and continued in that service until the completion of the road in 1856. From 1856 to 1860, he was in private engineering practice in the firm of Fleming, Ridout & Schreiber, at Toronto; 1860 to 1863, Superintending Engineer, Northern Ry.; 1863, Division Engineer for the Nova Scotia Government's Pictou Ry., and he remained in charge of that work until its completion in 1867. He was subsequently connected with the Intercolonial Ry., first in charge of the surveys for the route by way of Lake Temiscouata, and then in charge of the Eastern Extension Ry., as Superintending Engineer in 1869, and afterwards as Superintending En-



Sir Collingwood Schreiber, K.C.M.G.  
Consulting Engineer, Dominion Government

gineer and Commissioners' Agent for the entire road; 1873 to 1880, Chief Engineer and General Manager of railways operated by the Dominion Government, succeeding the late Sir Sandford Fleming as Chief Engineer, Canadian Pacific Ry., in 1880; 1892 to 1905, Chief Engineer and Deputy Minister, Department of Railways and Canals. Since July 1, 1905, he was Consulting Engineer to the Dominion Government, and until the completion of the road, Chief Engineer, Western Division, National Transcontinental Ry. He was appointed a member of the Royal Commission on Railways in 1886, and was created a Companion of the Order of St. Michael and St. George in 1893, and a Knight Commander in 1916. He was a member and one of the founders of the Canadian Society of Civil Engineers, of which he was a councillor in 1887 and 1888, and was made an honorary member in 1909. The funeral, which took place at Ottawa, was largely attended by Government officials and members of the engineering profession.

#### Freight and Passenger Traffic Notes.

The Northern Pacific Ry. has arranged with the Campbell Storage Co., Vancouver, to handle its entire cartage and baggage transfer business there.

The Canadian Northern Ry. has been ordered by the Board of Railway Commissioners to continue its present service of trains 1 and 2, Quebec and Chicoutimi, until further order.

The Saskatchewan Commissioner of Labor is reported to have made arrangements with the C.P.R., under which that company will carry farm laborers from Vancouver, New Westminster and Victoria, B.C., to Saskatchewan points at 1c. a mile.

The Newfoundland Government has announced that a passport must be produced, as a condition of entry, by all persons desiring to get into that island. Ticket agents should see that passengers buying tickets to Newfoundland points have the necessary document.

The C.P.R. has been authorized by the Board of Railway Commissioners to discontinue west bound local train 35, due at Finch, Ont., at 9.35 a.m., and east bound local 36, due there at 5.53 p.m., and to operate in lieu thereof train 19, due at 10.46 a.m., and train 20, due at 5.02 p.m.

The Canadian Northern Ry. has been authorized by the Board of Railway Commissioners to withdraw, until April 28, train 15, leaving Kingston, Ont., at 7 a.m., and Deseronto at 9.15 a.m., arriving at Belleville at 9.45 a.m., also train 18, leaving Belleville 6 p.m., arriving at Deseronto at 6.35 p.m.

The C.P.R. train from Montreal to Sault Ste. Marie, Ont., and beyond on the Minneapolis, St. Paul & Sault Ste. Marie Ry., which was taken off Feb. 24, has been again put on the schedule. It was found that no saving was being effected, as the Winnipeg train had to be run in two sections to accommodate the traffic.

The Moncton & Buctouche Ry. announced Feb. 22, that on account of track and other conditions beyond control, the regular movement of trains between Moncton and Buctouche, N.B., 32 miles, had been cancelled. A deputation of residents went to Ottawa early in March, to see if something could not be done to have traffic resumed, and it was reported, Mar. 14, that the Minister of Railways had informed the deputation that the government was working out plans for taking over this line as a branch of the Intercolonial Ry.

Arrangements are said to have been made between the G.T.R. and the Canadian Northern Ry. under which freight originating in Quebec and Ontario and intended for points in the west reached by the C.N.R., will be routed G.T.R. to North, thence C.N.R.; and freight originating on C.N.R. points in the west, intended for G.T.R. points in Ontario and Quebec, will be carried by the C.N.R. to North Bay, and there turned over to the G.T.R. This means that for long distance freight purposes, within certain limits the mileage of the two railways will be calculated as one.

**Canadian Society of Civil Engineers.**—Following are the officers elected for this year for the Montreal branch, which was established recently:—W. J. Francis, Chairman; A. Surveyer, Vice Chairman; F. B. Brown, Secretary-Treasurer; Committee—F. P. Shearwood, W. Chase Thomson, H. G. Hunter, L. G. Papineau, O. Lefebvre and K. B. Thornton.



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## Passenger Meetings at Buffalo.

The annual meetings of the Niagara Frontier Summer Rate Committee and Great Lakes & St. Lawrence River Rate Committee were held at Buffalo, N.Y., Mar. 12, 13 and 14. The rate representatives met on the first two days and arranged the schedules of rates, which were ratified at the general meetings on Mar. 14. H. J. Cudworth, G.P.A., Eastern Steamship Lines, Boston, Mass., was elected chairman, Niagara Frontier Summer Rate Committee, for this year, and Park Robbins, G.P.A., Goodrich Transit Co., Chicago, was elected chairman, Great Lakes & St. Lawrence River Rate Committee. Jas. Morrison, A.G.P.A., Canadian Northern Railway, Montreal, is permanent secretary of both committees.

The retiring president of the Niagara Frontier Summer Rate Committee, G. C. Wells, Assistant to Passenger Traffic Manager, C.P.R., Montreal, was presented with a gavel, the head of which was made from one of the first chairs placed in the Windsor St. station waiting room, Montreal, and the handle from a piece of the desk at which he worked for many years. The inscription plate and metal finishings were made from a cartridge shell manufactured at the C.P.R.'s Angus shops, Montreal, and the gavel was enclosed in a wooden case made from wood taken from a C.P.R. sleeping car.

The International Water Lines Passenger Association also met at Buffalo, Mar. 14. The following officers and committees were elected:—President, M. J. Powers, G.P.A., Champlain Transportation Co. and Lake George Steamboat Co., Albany, N. Y.; Vice President, W. F. Wasley, Manager, Muskoka Lakes Navigation & Hotel Co., Gravenhurst, Ont. Executive committee: W. H. Snell, G.P.A., C.P.R. Steamship Lines, Montreal; H. H. Cudworth, G.P.A., Eastern Steamship Corporation, Boston, Mass.; L. G. Lewis, G.P.A., Detroit & Cleveland Navigation Co., Detroit, Mich. The retiring president, E. W. Holton, G.P.A., Northern Navigation Co., Sarnia, was presented with a gavel, by the St. Louis & Tennessee River Packet Co.

The next annual meetings of the three organizations will be held at Montreal, probably in January, 1919.

## St. John & Quebec Railway Investigation.

The report on the investigation into certain charges made affecting the financing by the late New Brunswick Government of the construction of this railway, was presented to the Legislature Mar. 13. The commissioner finds "that while the evidence submitted does not warrant him in coming to the conclusion that any member of the government, or of the legislature, was improperly concerned in the negotiations which were carried on with reference to the two contracts awarded to the Nova Scotia Construction Co., and the sub-contracts awarded to Kennedy and McDonald and Smith and Merrithew, yet he has a suspicion that possibly some members of the government, or persons on behalf of the government, and with its approval, were improperly concerned in these negotiations with a view to raising campaign funds." The evidence as reviewed by the commissioner showed that \$100,000 of prospective profits was paid to Mr. Tennant by the Nova Scotia Construction Co., in connection with the securing of the contract; that there were

financial transactions between Tennant and G. B. Jones, M.L.A., for campaign purposes, and that J. D. Palmer, a director of the company (the directors being the nominees of the N. B. Government) handled campaign funds; and that the advance in price on a certain contract which was followed by a further provision of campaign funds, was not justified.

**Zone Fares for Edmonton.**—The section of the act passed by the Alberta Legislature recently granting the Edmonton City Council power to charge fares on the Edmonton Radial Ry. on the zone system, provides that notwithstanding anything to the contrary, the city shall have authority "to divide the territory along, over or through which any of its tramway lines are operated into zones, and charge separate freight and passenger tolls and fares for each zone into or through which freight or passengers may be transported, or may levy and collect such tolls and fares in accordance with the distance freight or passengers are transported."

**Increased Fares for London.**—In connection with the question of the increase of fares which has been brought before the London, Ont., City Council, the local trades and labor council took the matter up recently and passed a resolution favoring the increased asked, on the ground that the company is not in a position to grant any further increase of wages to its employees (and higher wages should be paid), unless its revenues are increased. The fares now charged were fixed by the agreement of 1895.

The C.P.R. has purchased the s.s. *Daily* from the MacDowell Transportation Co., Seattle, Wash., and she was delivered at Vancouver, about the end of February. There is no berthing accommodation, she being operated as a day boat only. On the passenger deck there is seating accommodation under cover, which runs practically the length of the ship, with accommodation for about 90 passengers, and for excursion traffic on Puget Sound. She was licensed to carry 300 passengers. She is equipped with triple expansion oil burning engine of about 500 h.p., for a speed of about 14 knots under 150 lbs. of steam. Her dimensions are: length 116.2 ft., breadth 25 ft., depth 8.5 ft.; tonnage, 254 gross, 172 register. It is intended to operate her in the Gulf Islands service, and before putting her on the run, she will be thoroughly overhauled and re-named.

**English Channel Car Ferry Service.**—During the war a car ferry service has been put into effect across the English Channel between England and France, for the transportation of loaded cars, thus saving time and expense in loading and unloading cars. For this purpose one or two of the car ferry masters from the Great Lakes were taken across to England, so that their experience might be utilized in getting the service successfully under way. Capt. Isaac Watts, a well known car ferry master, returned to Windsor, Ont., recently, from England, and is reported to have stated that 48 loaded cars, and about 20 guns were, at times, taken across on a trip.

The investigation into the wreck of the s.s. *Florizel*, near Cape Race, Feb. 24, has been held at St. John's, Nfld. The court consisted of Judge Blackwood of the Supreme Court, Capt. A. McDermott, R. N., attached to the Newfoundland station, and Capt. G. Spracklin, of the Reid Newfoundland Co.'s steamship service.



## The Pacific Great Eastern Railway Settlement in British Columbia.

The long drawn out differences between the British Columbia Government and the promoters of the Pacific Great Eastern Ry., were settled, when an agreement between the parties was signed Feb. 22. The history of the project in brief is:—An agreement was entered into in 1911, under which Foley, Welch and Stewart were to build a railway from Vancouver to Prince George, for which D'Arcy Tate had secured a traffic agreement with the Grand Trunk Pacific Ry., upon a guarantee of bonds by the B.C. Government. The Pacific Great Eastern Ry. was incorporated in 1912 to carry the agreement into effect, the members of the company being Timothy Foley, P. Welch, J. W. Stewart, members of the firm of contractors, and F. Wilson, D'Arcy Tate, and others nominated by them. The company acquired Howe Sound & Northern Ry., a short line running from Squamish, in the direction of Pemberton Meadows, which was overhauled, and extended towards Prince George. Construction was also started on a line from North Vancouver to Squamish, it being intended that this should be the last section of the line to be finished. Some years later the company got into financial difficulties, and obtained further assistance from the government. In 1916 additional assistance was asked for, which was granted, but owing to a political revolution in the province, the new government, instead of carrying out the provisions of the act, held an investigation into the company's affairs, which resulted in a finding, that overpayments in contravention of the statutes estimated at \$5,705,316.50 had been made to the contractors, altogether apart from overpayments from excessive profits, or upon wrong classification, and that it would take \$12,000,000 more to complete the line, which the contractors had undertaken to build upon a guarantee of \$20,160,000 of bonds. Certain of the directors and officers declined to answer questions asked by the commission, and were reported to the legislature. One was placed in the custody of the Sergeant-at-Arms, and some of the others went to the United States, from which they returned only recently.

As a result of the commission's report, the government, in May, 1917, issued writs against the P.G.E. Ry., its subsidiaries, the contractors, and against the individual directors, for an accounting; for an injunction restraining them from proceeding further with the work; for specific performance of the original agreement, and for damages for breach of the agreement. Since the date of issue of the writs, negotiations have been in progress for a settlement, which was only reached Feb. 22.

The agreement signed on Feb. 22, is between the B.C. Minister of Railways, who has since become also Premier, T. Foley, P. Welch and J. W. Stewart, doing business as Foley, Welch & Stewart; F. Wilson, D'Arcy Tate, and E. F. White, who together form the Pacific Great Eastern Ry. Co. and its subsidiary companies. The agreement provides that there shall be transferred to the province all shares not held by the province in the Pacific Great Eastern Ry., the Pacific Great Eastern Equipment Co., and the Pacific Great Eastern Development Co.; that the province shall be put in possession of the entire railway, and of all other properties and credits of the three several companies; that all lands and right of way contracted to be sold by the Development

Co. to the railway, and all land at Squamish, including the wharf, at present occupied as a terminal, shall be forthwith conveyed to the province; that a note for \$800,000 given by the railway to the Development Co. shall be delivered to the government for cancellation; that there shall be paid to the government, inclusive of money lying in the Union Bank, \$500,000 at once, \$250,000 additional in four months, and a further sum, subject to an option, of \$350,000; that all claims by the several parties named against either of the companies shall be released to the government forthwith; that upon the performance of these terms the government will release the other parties from their engagements; that the province, at any time during the continuance of the war, and for two years thereafter, may elect to retain all the shares of the Development Co. and all its assets, in which case the several parties will be released from the payment of the \$350,000 in cash mentioned above; that the several parties shall during the continuance of the war, and for five years thereafter, have the right to pay the province \$150,000 and surrender their rights to all the shares of Development Co. and its lands and assets, whereupon they shall be released from the payment of the \$350,000; no interest shall accrue on the \$150,000 if the option is exercised at any time up to within two years after the war, but 6% interest shall accrue if the option is exercised during the last three years of the option. If the province fails to exercise its option, the other parties to the agreement may, upon payment of the \$350,000 without interest, or with 6% interest, at any time within three years thereafter, elect to take over from the province all the Development Co.'s lands, except those specifically deeded to the province as above provided. If at the expiration of five years after the ceasing of the war, none of the options have been exercised by either party, all the shares of the Development Co. shall be retransferred, and all the lands, except certain ones specified, reconveyed to the parties of the second part, who shall then pay to the province \$350,000 with interest from the expiration of two years after the war; as security for the performance of the agreement, a bond of \$150,000 shall be furnished to the province. The several parties bind themselves to execute all documents necessary to carry the various terms into effect. All the rolling stock, equipment, plant and machinery now on the line, or adjacent thereto, or used for construction or operation of the line, or contracted for to be used on the line, are to be transferred to the government. The agreement is not to become operative until ratified by the legislature. The several parties agree, on request of the province, to apply for the necessary legislation. The parties of the second part declare that they have not encumbered the property in any way except as set out in a trust deed to which the province is a party; and it is agreed that the terms are binding upon the successors of the parties of the second part.

Upon the signing of this document, R. T. Elliott, solicitor for the parties of the second part, notified R. S. Thomas, Secretary of the P.G.E. Ry., to assign and deliver to the province the shares of the three companies named, to place the government's representative in possession of these companies' properties, and to advise the directors and employees of the same

companies, that all directions of the government were to be strictly attended to.

The legislature, on Mar. 15, passed a resolution confirming the terms of the agreement given above, and the legislation necessary to give full effect to it is now before the house. In dealing with the matter, Premier Oliver, after detailing the facts surrounding the formation of the company, the course of events during construction, and attending the investigation, and stoppage of the work, said: "In the agreement before you is contained the very best settlement, which, after many weary months of effort, I was able to obtain. I do not claim that it is what the province is entitled to. I simply claim that, in my opinion, it is a little the better of the only two courses open to us. This agreement was unanimously concurred in by my colleagues, and was approved by our late Premier by a telegram from Winnipeg when he was on his way home."

As to the working out of the terms of the agreement, Mr. Oliver estimated that the value of the equipment under the agreement was \$722,736; the lands in townsite as worth \$1,608,000; the interest paid on the bonds was \$382,000; the amount paid on the capital stock was \$40,000; the loss in connection with the operation and maintenance of the road was \$441,000; the sum owing to P. Welch for construction was \$1,892,563. These values totalled \$5,087,702, all of which was released to the government. In addition to this, the government was to receive \$750,000 in cash. As the total profit for P. Welch was \$5,705,000, it would be seen that the whole of these profits were wiped out under the agreement and the government was receiving in addition a balance of about \$120,000, which sum P. Welch would lose, without making a cent of profit in any way in connection with the railway.

In conclusion, the Premier outlined the plans which the government had decided upon working out for the future of the railway. The first section of the line from North Vancouver to Whytecliffe, 13 miles, will be placed in good operating condition as speedily as possible, and connected with the North Vancouver lines of the British Columbia Electric Ry. The line will either be electrified or operated by gas-electric engines, and the government will advise the abandonment of the West Vancouver ferry service. He said there is at present no justification whatever for the construction of the section of the line from Whytecliffe to Squamish. The completed line from Squamish to Clinton, 167.7 miles, will have to be put into good condition. A good lift of ballast is necessary, as well as considerable other work. The line from Clinton to Prince George, 185 miles, will be completed as speedily and as economically as possible. An effort will be made to bring the line to the river level at the old town of Quesnel, in order to connect there with the river steamboats; and the pusher grade north of Kelly Lake will be eliminated if possible. If this can be done, it will be advisable to bring the standard of the line up to that of the transcontinental lines. Once Prince George is reached, the line should be carried through to the Peace River as soon as possible. A connection should be made with either the C.P.R. or the Canadian Northern Pacific Ry. near Ashcroft, by a cut off from Clinton. A reconnaissance survey has been made for this cut off. With regard to the future



the government is of opinion that the line will have to pass either to the Dominion Government or to the C.P.R.

In connection with the reopening of traffic on the line, so far as the North Vancouver-Whytecliffe section is concerned, nothing definite had been settled to Mar. 20. It will be necessary to erect a temporary bridge over the Capilano River, to replace one which has been

washed out nearly a score of times since the line was opened. It was, however, expected to have this section of the line opened as a temporary measure early in April. Soon after the agreement was signed, the B.C. Railways Department put a large force of men on the line from Squamish, cleaning things up so as to restart the operation of trains. The first workers' train started out from Squamish

Mar. 15, and reached Mons, 37.4 miles from Squamish, Mar. 16, and subsequently left for D'Arcy, 86 miles, which was reached Mar. 19. It was arranged to operate a regular train schedule from Squamish as close as possible to the working train until Clinton was reached and the line cleared. The government engineers are preparing plans for starting work upon the line in April.

## Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—H. B. DRYDEN, heretofore locomotive fireman, has been appointed travelling fireman, vice T. W. McBeath, whose appointment as District Master Mechanic, Moncton, N. B., was announced in our last issue. Headquarters, Moncton, N.B.

H. G. REID, heretofore Assistant Superintendent of Rolling Stock, Transcona, Man., has been appointed Superintendent of Rolling Stock, Western Lines. Office, Transcona, Man.

**Canadian Northern Ry.**—G. CRONN has been appointed news storekeeper, Sleeping, Dining and Parlor Car and News Department, Winnipeg, vice H. E. Hunt, resigned.

**Canadian Pacific Ry.**—W. H. WINTER-ROWD, heretofore Assistant Chief Mechanical Engineer, has been appointed Chief Mechanical Engineer, vice W. E. Woodhouse, resigned. Office, Montreal.

W. J. MOULE, heretofore Auditor of Disbursements, has been appointed Assistant Comptroller. Office, Montreal.

E. E. LLOYD, heretofore Auditor of Stores and Mechanical Accounts, Montreal, has been appointed Auditor of Disbursements, vice W. J. Moule, promoted. Office, Montreal.

W. H. LANGRIDGE has been appointed Auditor of Stores and Mechanical Accounts, vice E. E. Lloyd, promoted. Office, Montreal.

W. WRIGHT, heretofore Division Master Mechanic, Toronto, has been appointed Division Master Mechanic, Brownville Division, New Brunswick District, vice C. Powers, transferred. Office, Brownville Jct., Me.

J. H. TODD, heretofore dispatcher, North Bend, B.C., has been appointed dispatcher, Brownville Jct., Me.

M. MILLER, heretofore Locomotive Foreman, Glen Yard, Montreal, has been appointed Master Mechanic, Montreal Terminals Division, Quebec District, vice J. F. Gildea, resigned to enter Delaware & Hudson Co.'s service. Office, Montreal.

J. PRENDERGAST, heretofore Locomotive Foreman, Hochelaga, Que., has been appointed Locomotive Foreman, Glen Yard, Montreal, vice M. Miller, promoted.

R. JOHNSTON, heretofore acting Locomotive Foreman, Sortin Yard, Montreal, has been appointed Locomotive Foreman, Hochelaga, Que., vice J. Prendergast, transferred.

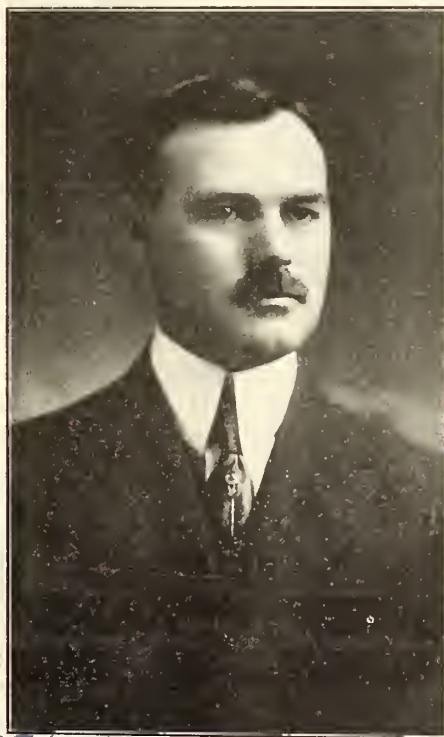
W. H. CAVERS, heretofore Chief Dispatcher, Chapleau Division, Algoma District, Chapleau, Ont., has been appointed Chief Dispatcher, Laurentian Division, Quebec District, Montreal.

C. POWERS, heretofore Division Master Mechanic, Brownville Jct., Me., has been appointed Division Master Mechanic, Toronto, vice W. Wright, transferred.

W. UNDERWOOD has been appointed chief ticket clerk, Toronto, vice J. McGough, promoted.

E. P. BARKER, heretofore Chief Dispatcher, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Chief Dispatcher, Chapleau Division, Algoma District, Chapleau, Ont., vice W. H. Cavers, transferred.

H. BROUGHTON, heretofore fitter, North Bay, Ont., has been appointed Locomotive Foreman, Chapleau, Ont., vice E. Freeman, promoted.



C. A. Cotterell  
Superintendent, Medicine Hat Division, Alberta District, Canadian Pacific Railway

J. L. ABEL, heretofore dispatcher, Smiths Falls, Ont., has been appointed Chief Dispatcher, Sudbury Division, Algoma District, Sudbury, Ont., vice E. P. Barker, transferred.

S. W. CRABBE, heretofore agent, Chalk River, Ont., has been appointed Superintendent, Schreiber Division, Algoma District, vice G. J. Fox, transferred to Western Lines. Office, Schreiber, Ont.

E. FREEMAN, heretofore Locomotive Foreman, Chapleau, Ont., has been appointed Division Master Mechanic, Schreiber Division, Algoma District, vice W. Wells, transferred. Office, Schreiber, Ont.

E. M. SMITH has been appointed Trainmaster, Wilkie Subdivision, Saskatoon Division, Saskatchewan District, vice S. C. Graham. Office, Wilkie.

W. P. CRAWFORD, heretofore Locomotive Foreman, Neudorf, Sask., has been

appointed Locomotive Foreman, Wilkie, Sask., vice R. B. Milne, who has left the service.

W. E. HAYWARD, heretofore machinist, Brandon, Man., has been appointed Locomotive Foreman, Neudorf, Sask., vice W. P. Crawford, transferred.

G. J. FOX, heretofore Superintendent, Schreiber Division, Algoma District, Schreiber, Ont., has been appointed Superintendent, Calgary Division, Alberta District, vice P. F. Weisbrod, on leave of absence. Office, Calgary.

E. J. LEMIEUX, heretofore Division Master Mechanic, Lethbridge Division, Alberta District, Lethbridge, has been appointed Division Master Mechanic, Calgary Division, Alberta District, vice A. E. Dales. Office, Calgary.

C. A. COTTERELL, heretofore Superintendent, Lethbridge Division, Alberta District, Lethbridge, has been appointed Superintendent, Medicine Hat Division, Alberta District, vice C. D. MacKintosh, transferred. Office, Medicine Hat.

C. D. MACKINTOSH, heretofore Superintendent, Medicine Hat Division, Alberta District, Medicine Hat, has been appointed Superintendent, Lethbridge Division, Alberta District, vice C. A. Cotterell, transferred. Office, Lethbridge.

D. M. SMITH, heretofore Road Foreman of Locomotives, Medicine Hat Division, Alberta District, Medicine Hat, has been appointed Division Master Mechanic, Lethbridge Division, Alberta District, vice E. J. Lemieux, transferred. Office, Lethbridge.

J. MCGOUGH, heretofore chief ticket clerk, Toronto, has been appointed City Passenger Agent, Boston, Mass.

**Delaware & Hudson Co.**—J. F. GILDEA, heretofore Master Mechanic, Montreal Terminals Division, Quebec District, C.P.R., Montreal, has been appointed Master Mechanic, Pennsylvania Division, D. & H. Co., Carbondale, Pa., vice J. J. Reid, resigned.

**Grand Trunk Ry.**—F. A. RUTHERFORD, heretofore Trainmaster, Districts 27 and 28, Detroit Division, Western Lines, has been appointed Inspector of Transportation. Office, Montreal.

W. J. HAMILTON, formerly of Stratford, Ont., is reported to have been appointed Locomotive Foreman, Brockville, Ont.

T. H. HAMILL has been appointed General Yardmaster, Hamilton, Ont., vice T. J. Wrennick, promoted.

D. W. HAYES has been appointed agent, Hamilton, Ont., vice A. M. Adams, transferred to Toronto, as announced in our last issue.

H. MACDOUGALL, agent, Stratford, Ont., is reported to have been appointed agent, London, Ont., vice D. M. Hayes.

T. J. WRENNICK, heretofore General Yardmaster, Hamilton, Ont., has been appointed Superintendent of Terminals, Black Rock N.Y., vice T. W. Saunders, resigned to enter another company's service.



**Grand Trunk Pacific Coast Steamship Co.**—W. H. FOGG has been appointed chief clerk and stationery agent, with general charge of the Manager's office at Vancouver, B.C.

F. R. HUNT, accountant, has been given general charge of accounts and finance, and all correspondence on these matters are addressed to him at Vancouver, B.C.

**Grand Trunk Pacific Ry.**—W. P. HINTON, Vice President and General Manager, Grand Trunk Pacific Ry., has also been appointed General Manager, Grand Trunk Pacific Development Co., Ltd., which controls the G.T.P.R. hotels, lands, townsites, steamships, etc. Office, Winnipeg.

H. STEPHENSON, heretofore shop foreman, Regina, Sask., is reported to have been appointed shop foreman, Prince George, B.C.

### Timiskaming and Northern Ontario Railway Betterments.

The Ontario Legislature, on Mar. 22, voted \$686,711.82 for new work, betterments, additional rolling stock and other facilities on the steam railway, and on the electric line operated by the Timiskaming and Northern Ontario Railway Commission. The items for expenditures on the electric line are given in the electric railway department on another page of this issue, under the heading Nipissing Central Ry., and the items for Timiskaming & Northern Ontario Ry. rolling stock are given under Rolling Stock Notes on another page. All the other items are for work on the T. & N.O. Ry., and of the \$585,211.82 voted, \$53,555.71 consists of items for which the provision made in 1917-18 has been revoked; \$445,156.11 is for items in respect of which \$332,825.75 was voted in 1917-18, and was unexpended, and \$868,500 consists of new votes. Following are the several works for which votes were made under these headings:—

Revotes:—	
Swastika siding .....	\$20,000.00
Monteith station and freight shed....	6,506.25
Porquois sidings .....	2,729.58
Iroquois Falls, sidings .....	476.78
South Porcupine extension.....	2,000.00
Cochrane, sidings .....	979.20
New sidings .....	12,473.21
Improvements, station grounds.....	2,390.69
<b>Total .....</b>	<b>\$53,555.71</b>

Partial revotes:—		
Kirkland Lake Branch....	\$125,000.00	\$150,000.00
North Bay car repair shed .....	3,720.00	10,000.00
Cochrane, ice house and track .....	3,000.00	6,500.00
Cochrane, baggage building .....	6,497.04	15,000.00
Replacing timber bridges with steel bridges.....	100,000.00	104,500.00
Fencing right of way.....	12,135.39	13,000.00
Additional road crossings .....	2,674.24	4,000.00
Additional weight rails, etc. ....	8,642.93	16,000.00
North Bay freight shed....	5,000.00	7,500.00
North Bay coal plant.....	27,000.00	30,000.00
North Bay, rearranging track .....	8,000.00	10,000.00
North Bay, machine shops, etc. ....	15,000.00	17,500.00
Change on line, curve reduction, mileage 63 to 66.5 and 80.8 to 81.2....	16,156.11	56,156.11

New Votes:—	
Connaught, station and agent's dwelling .....	\$ 4,500.00
Cochrane, section houses and agent's dwelling .....	20,000.00
Station buildings at unnamed points..	5,000.00
Heating, plumbing and electric lighting systems in existing dwellings and stations .....	7,000.00
Ballast crushing and screening plant..	15,000.00
Extension of water supply and improved equipment .....	15,000.00
Additional yard tracks.....	20,000.00
<b>Total .....</b>	<b>\$86,500.00</b>

### Co-operative Railway Building Proposed in Alberta.

At a meeting of representatives of Alberta rural municipalities recently, a proposition was discussed for the building of short branch lines of railway on the co-operative principle by municipalities. According to the promoters, it would cost \$17,000 to build a mile of good substantial road in normal times. If all the lands within one mile were assessed \$800 a quarter section, within two miles \$700, and so on till eight miles out on either side of the lines was reached, the 16 sections would be assessed at the average rate of \$400 a quarter section, and this would bring in \$25,600 for the 16 sections, and besides certain income would be derived from the disposal of townsites. By making the installments stretch over 20



W. E. Barnes  
General Master Mechanic, Canadian Government Railways

years, it would cost the owner of the nearest quarter sections \$40 a year; the owner of the quarter section eight miles out \$5 a year, and the rest of the owners at a proportionate rate. The saving of the cost of transporting the produce and supplies from the long haul of from 25 to 30 miles now necessary would, it was urged, make this plan appear to be a good one for the farmers. The project was discussed, but no action was taken.

### A Correction.

On page 140 there appears an article accompanied by an illustration, describing the arrangement of a spring-heating furnace in a railway shop. Owing to an error in make-up, which was not detected until the form containing the matter was printed, the caption placed under the illustration referred to the Kettle Rapids Bridge, Hudson Bay Railway, appearing on another page.

G. A. Skipton, Dominion Ex. Co. agent at Preston, Ont., for the past 12 years, died there, Mar. 18, aged 50.

### Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
Dec.	3,273,200	3,207,900	65,300	758,500
Jan.	2,715,300	3,290,300	x575,000	1,057,100
Feb.	2,691,000	3,171,400	x480,400	588,600
	\$27,263,100	\$24,983,400	\$2,279,700	\$4,606,700
Incr	\$ 440,400	\$5,047,100		
Decr			\$4,606,700	

x Deficit.  
Approximate earnings or three weeks ended Mar. 21, \$2,187,600, against \$2,126,400 for same period 1917.

### Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, compared with those of 1917, from Jan. 1, 1918:

	Gross Earnings	Expenses	Net Earnings	Decrease
Jan.	\$10,789,818	\$9,621,824	\$1,167,993	\$1,263,485
Feb.	9,574,302	8,983,404	590,898	1,396,151
	\$20,364,120	\$18,605,228	\$1,758,891	\$2,658,636
Incr	\$1,121,535	\$3,770,171		
Decr			\$ 2,658,636	

Approximate earnings for three weeks ended Mar. 21, \$7,959,000, against \$7,760,000 for same period 1917.

### Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan. 1 to Feb. 28:

	1918.	1917.	Decrease.
G.T.R. ....	\$6,014,854	\$6,825,821	\$810,967
G.T.W.R. ....	1,202,851	1,272,560	69,709
D.G.H. & M.R.	412,255	437,852	25,597
<b>Totals .....</b>	<b>\$7,629,960</b>	<b>\$8,536,233</b>	<b>\$906,273</b>

Approximate earnings for three weeks ended Mar. 21, \$3,462,601, against \$3,186,666 for same period 1917.

### Grand Trunk Pacific Ry. Earnings.

Approximate earnings for Feb., \$464,483, against \$295,512 for Feb., 1917; aggregate earnings for two months ended Feb. 28, \$904,685, against \$625,620 for same period 1917.



### COTTAGES AT GRAHAM

Department of Railways and Canals, Canada.  
Canadian Government Railways.

Sealed tenders, addressed to the undersigned and marked on the outside "Tenders for Cottages, Graham," will be received at this office up to and including Twelve o'clock noon, Thursday, April 11, 1918, for the construction of five frame cottages at Graham, Ont.

Plans, specifications and blank form of contract may be seen at the following offices: Chief Engineer, Dept. of Railways and Canals, Ottawa, Ont.; Chief Engineer, Canadian Government Railways, Moncton, N.B.; Resident Engineers at Fort William, Ont., and Cochrane, Ont.; the General Western Agent, Toronto, Ont., and the General Manager Western Lines, Winnipeg, Man.

All the conditions of the specifications and contract forms must be complied with.  
Tenders must be put in on the blank form of tender, which may be obtained from any of the offices at which plans are on exhibition.

Each tender must be accompanied by an accepted bank cheque payable to the Honorable the Minister of Railways and Canals for an amount equal to ten per cent. (10%) of the tender.

The lowest or any tender not necessarily accepted.

By order,  
J. W. PUGSLEY,  
Secretary.

Department of Railways and Canals,  
Ottawa, March 26, 1918.



# Electric Railway Department

## The Montreal Tramways Company's New Franchise.

Canadian Railway and Marine World for March devoted over 3 pages to details of the Montreal Tramways Co.'s franchise, which was signed on Jan. 28, after extended negotiations before the commission appointed by the Quebec Legislature and the company's representatives. Below we give the balance of the franchise agreement as ratified by the Quebec Legislature at its last session, our reason for giving so much space to it being that it is a new departure in many ways and will doubtless prove of great interest to electric railways generally. As stated in our last issue, the original bill before the legislature was in French, and the translation we have given was made hurriedly and is subject to revision. The following is the balance of the franchise agreement:—

If at the end of the first year of operation under this contract or at the end of any subsequent year, it shall appear to the commission's satisfaction that the maintenance allowance herein fixed is insufficient, such allowance shall be increased for the ensuing year and from year to year as may be deemed necessary. If at the close of any year the commission shall find that the maintenance allowance is excessive or that the maintenance and renewals fund is greater than prudent management of the tramways system required, then the commission may reduce such allowance to any extent which it may see fit: provided that the maintenance allowance shall never be so reduced as to cause a reduction in the maintenance and renewals fund, except temporarily, below \$500,000, and in case such fund is at the end of any year found to be reduced below such sum, then the commission shall forthwith increase the maintenance allowance in an amount sufficient to restore fund at least to \$500,000. Fund shall be under the commission's control and no monies in it shall be paid out or loaned or invested except with the commission's approval. In case the monies in fund are deposited in bank or invested, the interest or revenues therefrom shall be added to the fund. In case the city shall acquire the property at the termination of this contract, the maintenance and renewals fund as then existing, shall become the city's property, and the amount of the fund shall not be added to the purchase price, and any monies then due by the company to the fund shall be deducted from the purchase price.

**Return Upon Capital Value.**—The capital value of the tramways system is hereby fixed at \$36,286,295, including all physical assets added to the system up to Dec. 31, 1917. As its usual return upon the capital value so fixed, the company shall receive in quarterly payments out of gross revenues a sum equal to 6% on such capital value. From time to time hereafter as money is needed for betterments, additions and extensions of plant required by this contract or approved by the commission, such money except to the extent that monies for such purposes are payable at the time from the maintenance and renewals fund, shall be supplied by the company, and the amounts so supplied and actually expended for such purposes under the commission's supervision shall, plus net interest expenses during construction, be added to capital value,

and the company shall receive out of the gross revenues an annual return of 6% on such amount. For such purposes, however, the company shall be obliged to borrow temporarily from monies in the maintenance and renewals fund, except from monies already in that fund for same purposes and from the contingent reserve fund and the tolls reduction fund to the extent that in the commission's judgment the monies are available for loans, and upon monies so borrowed the company shall pay into such funds interest at 6% per annum. Monies so borrowed shall be reimbursed by the company as ordered by the commission.

Within 60 days after the coming into force of this contract, the commission shall ascertain and determine the amount of money expended by the company for all physical assets added to its system subsequently to Dec. 31, 1917, and the amount so determined shall be added to capital value and the company shall receive an annual return therefrom at the rate of 6% per annum to be taken out of gross revenues.

Upon all monies supplied for capital expenditure by the company, from other sources than the aforesaid funds, during the continuance of the present war, or within two years after its close, the company shall receive out of gross revenues an additional return of 1% per annum, provided such additional return shall not be paid for more than five years beyond the close of the war.

As the capital hereinbefore established at \$36,286,295, does not comprise any working capital, it is agreed that any working capital required shall, when ordered by the commission, be furnished by the company. Upon such working capital so furnished the company shall receive a return at the rate of 6% per annum. Should the commission so order, the company shall be obliged, for the purpose of creating or maintaining such working capital, to borrow from any or all the different funds created by the contract, in the same manner as hereinbefore established for monies borrowed by the company from said funds for betterments, additions and extensions of plant.

For the purpose of covering the expense to be incurred in procuring additional capital, the company shall, out of gross revenues, receive annually \$181,421.47 (being equivalent to  $\frac{1}{2}$  of 1% of \$36,286,295), provided said amount is expended solely for the following purposes: when issuing bonds or debenture stock, for discounts, commissions, printing and engraving, exchange, legal and other expenses incidental thereto; when issuing stock, for printing, engraving, transfer and registration fees and listing on stock exchanges. Any surplus over and above the said expenditure, and the interest or income therefrom shall belong to the company but shall be kept in a special account and shall not be distributed until the termination of this contract.

During this contract the company shall not pay dividends of more than 10% annually on its capital stock.

In procuring any amounts of additional capital required after the coming into force of this contract, the company shall limit its mortgages or issues of mortgage bonds or debenture stock in order that the

same do not aggregate more than 75% of the total additional capital then furnished under this contract, but this restriction shall not apply to securities which the company may issue to renew or replace loans contracted under the trust deeds in existence on June 30, 1917, and also the debentures amounting to \$1,500,000, and maturing on May 22, 1922.

**City Rentals.**—The city shall receive out of gross revenues and above all other amounts to which it may be entitled under this contract or otherwise, \$500,000 a year during the continuation of this contract, payable quarterly.

**Contingent Reserve Fund.**—A sum equal to 1% of the gross revenues shall be paid annually into a contingent reserve fund until such fund with its accretions, shall amount to \$500,000, and thereafter no further payments shall be made to this fund and the accretions thereof shall be paid into and become a part of the gross revenues; provided, that if the fund shall be diminished by any of the contingent payments hereinafter described, the accretions of the fund shall thereafter belong to it and the payment of 1% of the gross revenues into the fund shall be resumed as soon as the percentage is available, and shall so continue until the fund is again restored to the full amount of \$500,000. The fund shall be used whenever it may be necessary to make up any deficiency in the payment to be made as provided, and allowances provided.

Upon the termination of the contract, the company shall repay any monies borrowed from the fund and not previously repaid, and the total amount then in the fund shall be distributed as follows: To the city, 30%; to the company, 20%, and to the tolls reduction fund hereinafter established, 50%.

**Division of Surplus.**—All the portion of the gross revenues remaining after the payment of charges hereinbefore described, shall constitute the divisible surplus, and shall, at the end of each year, be distributed as follows: To the city, 30%; to the company, 20%, and to the tolls reduction fund, 50%. The portions distributed to the city and to the company shall belong to them and may be used or disposed of as they respectively see fit. The tolls reduction fund shall be held in trust for the company's patrons for the reduction of tolls, and shall be administered by the commission as herein provided. Whenever at the end of any year the amount in the tolls reduction fund shall exceed \$1,000,000, the commission may, and whenever the amount in said fund shall exceed \$2,500,000, the commission shall, reduce the fares or tolls on the tramways system. For the purpose of effecting said reduction, an amount not exceeding 25% of the total amount in the fund at the close of the year preceding the year when such reduction is to be made, shall be taken out of the tolls reduction fund and added to gross revenues, and the commission shall thereupon reduce the tolls to an extent that in the aggregate for the year is at least equal to the amount so taken out of the tolls reduction fund, but does not exceed such amount plus 75% of the amount which during the last preceding year flowed from gross revenues into the divisible surplus. Thereafter, at the beginning



of each year an amount shall be taken from the tolls reduction fund and turned into gross revenues equal to the amount so taken from the fund at the time of the reduction of tolls; but when the total amount remaining in the tolls reduction fund at the end of any year is less than the amount taken annually from the fund for the increase of gross revenues as above provided, the appropriation from the fund to gross revenues shall for the time being be discontinued, but the tolls shall remain as previously reduced until it shall be necessary as hereinafter provided, to increase them.

If the tolls reduction fund, in spite of its depletion for such reduction in tolls, shall again increase to an amount in excess of \$2,500,000, the tolls shall be further reduced in the same manner as before. If in any year the gross revenues shall be insufficient to provide for the payment of all sums payable under paragraphs 1 to 5, and if the contingent reserve fund is less than \$300,000, the commission shall forthwith from any monies in the tolls reduction fund, appropriate the amount necessary to bring the contingent reserve fund up to \$500,000, all deficits in the payments provided for under paragraphs 1 to 4 being made up, or if sufficient monies therefor are not available in said tolls reduction fund, then the commission shall forthwith increase the tolls to the extent necessary to provide at least sufficient gross revenues to meet all the payments provided for under paragraphs 1 to 5.

At the termination of this contract the tolls reduction fund shall be the city's property, and any amounts borrowed by the company from the fund and not previously repaid, shall forthwith, upon the city's demand, be paid into the fund by the company, and in case of purchase by the city of the tramways system, any amounts then due from the company to the fund shall be deducted from the purchase price.

Any loans made to the company from the maintenance and renewals fund, the contingent reserve fund or the tolls reduction fund, shall constitute, without registration, a lien upon the company's plant and property, superior to any other lien hereafter created by act of the company and not previously authorized by any mortgage or deed of trust in existence on June 30, 1917, affecting such plant and property; but the company may reimburse said loans for the purpose of replacing or renewing any lien created or authorized in virtue of any deed of trust existing on said date.

No monies taken from earnings, except surplus available to the company, shall be used to redeem any mortgage, lien, or other mortgage indebtedness of the company.

**Expropriation.**—On Mar. 24, 1953, and at the expiration of every subsequent five-years period, the city shall have the right, after six months notice given to the company within the 12 months immediately preceding Mar. 24, 1953, and also after a similar notice of six months and on the same conditions at the end of each subsequent five-years period, to appropriate for itself the company's railway, as well as the immovables and dependencies, plant and cars belonging to it and necessary for the operation of the railway, situate within and without the limits of the city, by paying the value thereof to be fixed by arbitrators and 10% over and above the estimate. Should the city exercise the right conferred upon it by this clause, then it is agreed that the valuation of \$36,386,295 fixed by this contract shall

in no way bind the arbitrators in establishing the purchase price payable by the city. The purchase price shall also comprise all the company's privileges, rights and franchises in any municipality wherein the assets so acquired are situated, and the city shall not pay for the value of such privileges, rights and franchises and shall further have the right to operate the system of tramways so purchased in any municipality wherein the same is located. No municipality other than the city shall have the right to purchase the company's railway system in whole or in part.

Within 30 days after the expiration of each year of operation the company shall furnish to the commission detailed statements of its expenditures made within the preceding year.

All the provisions of the contracts, agreements or arrangements concluded between the company and any municipal corporation outside of the city, incompatible with the provisions of this contract shall remain without effect counting from the putting into force of this contract.

In the event of the company, at any time failing to conform to or contravening any of the conditions or obligations which are imposed on it by this contract, or to any of the commission's decisions or orders, it shall be liable to a fine not exceeding \$40, with or without costs at the discretion of the court, for each and every day it neglects to so conform or contravenes any of the conditions, obligations, decisions or orders.

This contract shall form part of the securities furnished by the company under the trust deed in favor of the National Trust Co. and the Harris Trust and Savings Bank, dated July 1, 1911, and other trust deeds existing on June 30, 1917, to guarantee the loans and the issues of debenture stock made by the company under the authority of the said trust deeds.

This contract shall not take effect until ratified by the Quebec Legislature.

### Halifax Electric Tramway Employees Strike.

The Nova Scotia Tramways & Power Co.'s electric railway employees in Halifax, ceased work Feb. 23. On the same day the management issued a statement to the effect that the men did not give any notice of their intention to stop work, nor any reason for so acting. The wages agreement does not expire until May 20, and for two weeks prior to the date of ceasing work there had been negotiations between the company and the men as to a new agreement. On Feb. 18, the company submitted to the men a new scale of wages representing an advance of 12% upon the scale provided for in the unexpired agreement. There had been some differences with the men, owing to certain alleged acts of insubordination which the company's executive officer had dealt with. One employee, Conductor Zinck, being suspended, and the other, Motorman Lowe, being dismissed. It was stated by the Managing Director, H. R. Mallison, that there had been a good deal of insubordination, and defiance of discipline among the men, and that it was determined to make an example. The employees claimed in the case of Conductor Zinck that, having been injured in the explosion, and being nervous, he felt, when rated as motorman for a new run, that in the best interests of himself and the public he should not undertake it;

that before suspension he was not given an opportunity to explaining to the official who suspended him his reasons for not accepting the run, and that he was not physically fit for it. He was taken off the list as a conductor and rated as a motorman. He had served as conductor and in spare time as a motorman. In the case of Motorman Lowe, dismissed, the employees claimed that when an inspector was posting the run guide, including Zinck's name, Lowe suggested that it should not be left up too long, or it might cause trouble. This remark apparently had been described to the company as Lowe ordering the notice down or that he would make trouble. Lowe claimed to have five witnesses to testify to the exact remark he made, which he claims to have been intended as harmless. The men also issued a statement saying that, after ineffectual attempts to secure the reinstatement of Zinck and Lowe, the men decided, by a 90% vote, to cease work until the two men were reinstated.

The city authorities endeavored to bring about an understanding between the parties, with the result that on Feb. 25, H. R. Mallison, Managing Director, wrote the Deputy Mayor as follows:—"It has been decided to moderate the punishment meted out to Motorman Lowe. If our employees are prepared to return to work in the customary manner tomorrow morning, and, on behalf of the citizens, give the company loyal and faithful support, and observe in a satisfactory manner the reasonable rules and regulations laid down for their guidance, the company's ruling in regard to the dismissal of Lowe will be withdrawn, and he will, instead, be subjected to a suspension of one week; which week terminates Wednesday night next. It is part of this proposal that both the company and the men waive further investigation or inquiry in the two cases in dispute and at once resume the harmonious relations which should exist between employer and employees, in order that the public may be efficiently served and the unfortunate condition which has existed for the past three days be ended at once."

This proposal was accepted by the men and the service was resumed Feb. 26.

**Levis County Ry. Fares Advanced.**—The Levis County Ry. applied recently to the four municipalities in which it operates, viz.: Levis, Lauzon, Bienville and St. Romuald, for permission to increase its passenger fares, which were fixed by franchise and ratified by the Quebec Legislature. The fares which have been in force for 15 years are: Cash fare, 5c.; unlimited tickets, 6 for 25c.; scholars' tickets, 50 for \$1.25. The company applied for the following new rates: Cash fare, 10c.; unlimited tickets, 12 for \$1; workmen's tickets, 16 for \$1; children not in arms and scholars under 16 years of age, 50 tickets for \$1.50. We are officially advised that an agreement has been come to, under which the cash fare is advanced from 5c to 10c. Unlimited tickets will be sold, 8 for 50c or 50 for \$3, instead of 6 for 25c as heretofore. Children, not in arms and under 12 years of age, will be charged a cash fare of 5c or 10 tickets for 25c; scholars will be sold 50 tickets for \$1.50.

Sandwich, Windsor & Amherstburg Ry. employees have refused the terms offered by the company, and on Mar. 21 applied to the Minister of Labor for the appointment of a board of conciliation. The two principal points upon which the parties have disagreed are the amount by which wages should be increased, and the recognition of the union.



## The Toronto Civic Railway's Fares and Deficits.

T. Bradshaw, Commissioner of Finance, and R. C. Harris, Commissioner of Works, the latter of whom has charge of Toronto Civic Ry. construction and operation, presented the following report to the city's board of control recently:—

We deem it our duty to again direct attention to the fast accumulating deficit on account of the operation of civic car lines. Prior to the operation of the first line on Gerrard St. East in the latter part of 1912, the Commissioner of Works made strong and insistent representation to the board of control that the rate of fares charged by the Toronto Ry. Co. should apply to the civic lines. Consent was not given to this, but bylaw 6304, passed Dec. 13, 1912, provided for the following scale of fares from 5.30 a.m. to 12 midnight, viz.:—Single cash fare for adults, 2c, or 6 tickets for 10c; children under 9 years, 1c; infants in arms, free; night fares, from 12 midnight to 5.30 a.m., 5c cash.

On Aug. 22, 1913, the Commissioner of Works again recommended that the fare scale of the Toronto Ry. Co. should be applied to the civic lines. The board of control did not agree therewith, but recommended that the existing rates be continued as a temporary measure, to be adjusted, after determination had been reached, upon the negotiations for the purchase of the Toronto Ry. Co., having in view the possible unification of the systems. This was adopted by council Sept. 29, 1913, and on the same day bylaw 6673 was passed, applying the existing rates of fares on the Gerrard St. line, to the St. Clair and Danforth Ave. sections of the system.

In 1914 Aldermen Whetter and Hiltz moved that the board of control consider the advisability of increasing the rates of fares. The board reported favorably, but the motion was referred back by council.

On Feb. 22, 1915, the Commissioner of Works advised the board of control that instructions had been issued to apply the existing rates to the Bloor St. line, and added, "I am still of opinion, however, that a sum sufficient to pay operating, maintenance and overhead charges should be collected."

On Feb. 26, 1915, the Commissioner of Works recommended to the committee on works that the following fares be charged, viz.:—Adults, 3c cash or 9 tickets for 25c; children, 1c; night fares, 5c. The committee adopted this recommendation; the board of control, however, recommended that it be referred back, and in this council concurred on Mar. 8, 1915.

On April 4, 1917, we made joint report to the board of control, recommending that a straight 3c fare, or 10 tickets for 30c, be charged. This recommendation was rejected. Had it been adopted, the revenue for 1917 would have approximated \$428,056, instead of \$278,147 actually received—a practical loss of \$149,909. The foregoing figures do not provide for the collection of fares from soldiers in uniform, of whom we carried 477,149 free during 1917. The total debenture issue on account of civic car lines amounts to \$2,287,171, the annual charges thereon being \$171,063.80. Since the inception of the system, the total charges of the operating sections have been as follows:—

Operating and maintenance.....	\$860,000.00
Capital charges .....	660,947.00
Total .....	\$1,520,947.00
Total revenue .....	930,259.00
Deficit .....	\$590,688.00

In other words, since the institution of the various civic car lines, the ratepayers at large, up to Dec. 31, 1917, were called upon to pay \$590,688 for special service accorded those in the districts contiguous to the civic lines. As before reported, it cannot be urged that this practice is sound, wise or business like. Every public utility should be made self supporting. It is unfair that the citizens at large should be compelled to make good annually, through the tax rate, the deficit created by reason of preferential treatment accorded a section of the community. Furthermore, it provides one of the most potent and damaging arguments against public ownership.

We have shown that the accumulated deficit to Dec. 31, 1917, amounted to \$590,688, and will under present conditions, increase at a rate approximating \$200,000 yearly. This means that in Sept. 1921, when we obtain possession of the Toronto Ry., the ratepayers at large will have disbursed \$1,340,688 to eliminate a deficit created by special preference accorded favored sections. Nor does it end here. We are now proceeding to acquire the section of the Metropolitan Division of the Toronto & York Radial Ry., located on Yonge St. within the city limits, which, if effected, will mean a considerable increase in annual capital charges, and if rated on the fare scale now existing on our civic lines, will considerably augment the annual deficit. This gives us considerable concern. We should persistently hold in mind the necessity of conserving every financial resource, against the acquisition of the Toronto Ry., 43 months hence, when the citizens may be emancipated from the pretence for service offered by the company, whose delinquency in discharging its obligations, is, unfortunately, aggravating rapidly. We are neither conserving or prudent in furnishing service below cost. In our opinion such policy is unwise and dangerous, inasmuch as it may have some serious collateral bearing upon the 1921 situation.

We recommend that the fares on the civic car lines be 3c cash, or 10 tickets for 30c; children's fare to be 1c cash, as at present; the foregoing rates to apply from 5.30 a.m. to 12 midnight; night fares from 12 midnight to 5.30 a.m. to be 5c cash, as at present. We estimate that the recommended scale of fares will be sufficient to cover the operating, maintenance and capital charges, but not physical depreciation, or municipal taxes, which, in our opinion, should be collected from every public utility, operated municipally or otherwise. If this scale be adopted, the following statement, based upon the number of passengers carried in 1917, and the service provided for in the estimates of 1918, would approximate the situation at the end of this year, viz.:—

Operating and maintenance charges..	\$325,624.00
Capital charges .....	171,064.00
Total .....	\$496,688.00
Revenue passengers—16,478,391 at 3c.	
a passenger .....	494,351.00
Deficit .....	\$ 2,337.00

We cannot too strongly urge upon the administration to give effect to this recommendation. In our opinion it embraces good finance, sound business and efficient administration, while arguments may be admitted to affect its purport. We are convinced that the great outstanding principle which has made public ownership successful, viz., that a high standard of service should be furnished at mini-

mum cost, but that such service should be absolutely self sustaining, will of itself, by its sound logic, confute any such arguments.

The board of control sent the foregoing report on to the city council, advising that the recommendations did not meet with its approval and the city council acquiesced, so the fares remain as they were before and the deficits will continue to pile up.

### Application for Increased Electric Railway Fares in Quebec.

The Quebec Ry., Light & Power Co. is applying to the Quebec City Council for permission to increase its street railway fares and gas rates. Following are particulars of the present street railway fares and of the increases asked:—

Cash fare, 5c., no change asked. Tickets, present rates, unlimited tickets, 6 for 25c. and 25 for \$1; workmen's tickets, 8 for 25c. It is desired to change to 5 unlimited tickets for 25c. and 21 for \$1, and to abolish workmen's tickets.

School children's tickets, present rate, 10 for 25c., no change asked.

Children under 7 years of age, when accompanied by parents or guardians, are now carried free. It is asked that all children, excepting those in arms, shall pay 3c. cash fare, or buy 10 tickets for 25c.

Transfers are now free, and permission is asked to charge 1c. each for them.

After giving particulars of increased fares granted to electric railway companies in the United States, the Quebec Co.'s application gives a statement showing prices of material incidental to the operation of public utility companies in June, 1917, compared with June, 1913, showing an average increase of 109.3%. The application continues: "The larger portion of the material used in the operation of this company's service being manufactured in the United States, we are compelled to pay heavy customs duty, and for this reason alone, railway companies operating in the U.S. have the advantage over Canadian railway companies. Different railways in the United States have, however, found it necessary to ask for, and have been granted increases, in most cases abolishing tickets and charging a straight 5c. cash fare, and in a number of cases charging a 6c. and 7c. cash fare. The operating wages paid the Quebec Co.'s employes for 1917 were \$589,751.90, against \$470,721.43 for 1916.

**Winnipeg Jitneys to be Abolished.**—Winnipeg press dispatch Mar. 26.—Abolition of the jitneys was decided upon by the city council last night by a vote of 12 to 5. The resolution reads that the Winnipeg Electric Ry. Co. shall give adequate service, eliminate the electrolysis that damages the water mains, clear the streets of useless poles, and that if motor busses are put on by the company they shall be under regulation by the city. It was stated Mar. 20 that there were about 200 licenses for running jitneys in existence in Winnipeg, and that they were being issued as usual. The licenses are subject to cancellation at any time, and the bonds given run from month to month.

**Guelph Radial Ry. Officials.**—The officials of this line, which is owned and operated by the City of Guelph, Ont., are as follows: President, J. W. Lyon; Vice President, T. Hall; Treasurer, S. Rundle; Secretary, H. Westoky; Manager, A. H. Foster.



## The London and Lake Erie Ry. and Transportation Co's Position.

The London & Lake Erie Ry. & Transportation Co.'s financial position has been dealt with in previous issues of Canadian Railway and Marine World, including the company's offer, in Oct., 1917, to sell the property to the city of London, for 60c. on the dollar, as represented by the bonded indebtedness. This offer was considered by the city and rejected on the report of Sir Adam Beck, Chairman of the London Railway Commission, operating the London & Port Stanley Ry., and who is also Chairman of the Hydro Electric Power Commission of Ontario. He is reported to have stated that he was prepared to advise the city that the road would be self sustaining if purchased at 35c. on the dollar of the bond issue. The company

ventures would take debentures of the municipalities, bearing interest at 6%, in exchange for the total debentures and stock of the company. I do not know to what extent the Hydro Electric Power Commission would assist in the purchase, but as it injured the L. & L.E.R., which was a very valuable asset to London, it should certainly assist. By this proposition the municipalities would become the owners of the road, and it is certain that all the municipalities desire the road to be kept open."

Some further negotiations took place, and on Mar. 20, the President wrote the London City Clerk, as follows:—"Your letter of the 16th inst. was submitted to a meeting of the directors of the L. & L.E.

present company took over the property, Dec. 15, 1909. The company was authorized to issue bonds for \$30,000 a mile of the line built, and these were issued to the extent of \$840,000, bearing with interest at 5% per annum, payable half yearly. No interest has been paid on them since 1915.

The last operating results available are those for the year ended June 30, 1916, which show gross earnings from operation \$82,410; miscellaneous earnings, \$46; operating expenses, \$85,594; taxes, funded debt, etc., \$47,325; net deficit, \$50,463; fare passengers carried, 403,717.

The St. Thomas, Ont., City Council is reported to have decided to notify the L. & L.E.R. & T. Co. that unless it pays up at once arrears of rental for track through the city, amounting to some \$8,000, its running rights will be cancelled.

### Applications for Increase in Electric Railway Fares.

On account of the greatly increased costs of labor, fuel, rolling stock, materials, and everything else that electric railways have to buy, it is self evident that their passenger fares must be advanced, if the companies are to continue in business, and already, following similar action in the United States, there is a considerable movement for the purpose of securing a change in the rates of fare paid in Canada.

The Levis County Ry., Levis, Que., has applied to the four municipalities in which it operates for a change in its franchise, particulars of which are given elsewhere in this issue, and the application has been granted, at least in part.

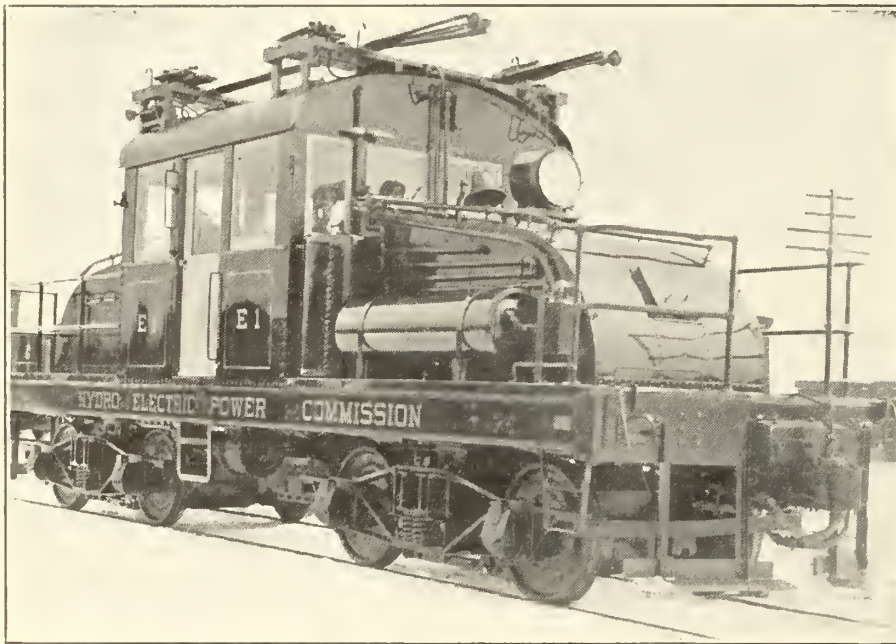
The London Street Ry. has applied to the London, Ont., City Council for a modification of its franchise "either by way of increased rates or otherwise." Its application was published in Canadian Railway and Marine World for March.

The New Brunswick Power Co., operating the St. John Ry., is applying to the New Brunswick Legislature, for authority to increase its passenger fares and electric light rates. It is probable that it will ask for a 6c cash fare, without tickets, and with 1c for transfers.

The Quebec Ry., Light & Power Co. has applied to the Quebec City Council for a change in its franchise, to enable it to advance its fares, particulars of which are given on another page.

Hamilton & Dundas St. Ry. Freight Traffic.—The Toronto, Hamilton & Buffalo Ry. is applying to the Dominion Parliament for the confirmation of an agreement dated June 17, 1890, made between it and the Hamilton & Dundas Ry., making certain traffic arrangements or agreements authorized by Sec. 364 of the Railway Act, for 50 years. This is the agreement which was the subject of considerable controversy in the House of Commons in 1917, when it was sought to have it confirmed. The agreement is for the handling of freight from the T. H. & B. Ry. into Dundas by the Hamilton & Dundas St. Ry. As the latter is an Ontario company, and as the Ontario general laws only permit agreements for 21 years, legislative confirmation of the agreement was secured in 1898. The traffic has been handled since that time by the H. & D. St. Ry., and the T. H. & B. Ry. now wishes to secure Dominion confirmation.

The jitney licenses in Vancouver, B.C., will terminate June 30, by which time the city council expects to have secured from the legislature the legislation necessary to prohibit their operation.



Electric Locomotive for Hydro Electric Power Commission of Ontario.

This is the first of 12 electric locomotives for the Hydro Electric Power Commission of Ontario's construction railway, in connection with its Chippewa-Queenston power development, which were fully described in Canadian Railway and Marine World for Dec., 1917, and which were ordered from the C. E. A. Carr Co., Toronto. The cabs and trucks are being built by the National Steel Car Co., at Hamilton, Ont., and the Canadian Westinghouse Co. and the Canadian General Electric Co. are each supplying electrical equipment for 6 locomotives.

declined this offer, and it was then suggested that the company should scrap the portion of the line which parallels the London & Port Stanley Ry., the remaining portion to be linked up and operated with the L. & P.S.R. The various municipalities along the route were asked to consider the question of joint action in taking over the line as a municipal enterprise, but nothing definite has been done in this direction.

The President of the L. & L.E.R. & T. Co., G. B. Woods, of Toronto, in a letter which came before the London City Board of Control, Mar. 8, said:—"You are doubtless familiar with the London & Lake Erie Ry. and the effect on it of the electrification of the London & Port Stanley Ry. Negotiations were opened with Sir Adam Beck for the sale of the L. & L.E.R., and his offer of 35c. on the dollar was considered too small. It was intimated that 60c. on the dollar would be accepted. The value of the railway to London, and all the municipalities through which it runs, is known, and if they could agree on the proportion of the purchase price each should assume, I believe the holders of de-

R. & T. Co. held yesterday, and I was authorized to say, the lowest possible price we will accept is \$420,000, for the bonds and capital stock of the railway. This price is 50c. on the dollar for the bonds. If the city does not desire to pay cash, the company would be willing to accept 6% City of London bonds, with interest payable half yearly, the bonds to be payable at the expiration of a time to be agreed upon, not to exceed 20 years. It is very desirable that an early answer should be obtained, as already the road has been kept open many months longer than was at one time contemplated. This was done in order to give the municipalities an opportunity to keep the road running." The letter was considered by the city's Board of Control, Mar. 22, and ordered to be filed, the Mayor being reported as saying that the city would not buy the bonds at any price.

The line, which runs from London, via Lambeth and St. Thomas, to Port Stanley, Ont., on Lake Erie, is 28 miles long, and was opened for traffic by the Southwestern Traction Co., in 1905. That company went into liquidation in 1909, and the



## The Toronto Railway and the City of Toronto.

The Ontario Railway and Municipal Board has adjourned to Apr. 12, further hearing of the failure of the Toronto Ry. to comply with the Board's order respecting the addition of 100 new cars to its equipment by Jan. 1. The company, in the meantime, is advised to use every endeavor to obtain additional cars, and to get its orders on the market and obtain the best delivery possible.

On Nov. 9, 1914, the Ontario Railway and Municipal Board, in announcing its conclusions on a special report obtained as to the service furnished by the company, and the requirements of the city, required, among other things, that the company provide, by June 30, 1915, 50 double truck motor cars of a design to be approved by the board. The chief aim of the parties concerned was the elimination of overcrowding on the cars, and of the outside running board on the summer cars. In the early part of 1915 the company equipped one of its cars with cross seats and a centre aisle, and six of its cars with half of the seats on each side arranged across the car and the other half longitudinally, with a cross-over aisle. Owing to the narrow devil strip, the cars used are of necessity about a foot narrower than those on most of the large electric railways in Canada and the U.S. On Apr. 30, 1915, the board held a sitting to consider plans of cars, when it was stated that the company was proceeding to build cars according to the plans, without having received the board's sanction, and that two cars had been built and 18 were in course of construction, to enable the company to have them in service by June 30, 1915. The board's chairman announced that if the company built the cars without the board having approved the plans it did so at its own risk. The matter again came before the board, May 17, 1915, and the city submitted plans of a composite type of car, and for the reconstruction of existing cars. The company desiring time for the consideration of these plans, the matter was left to the board's engineer, the City Engineer and an official of the company. After some consultation, an existing type of car was arranged with cross seats on one side and a longitudinal seat on the other, with the car body being set a little off centre on the trucks, in order to obtain some extra width without endangering passing cars. The board then decided that the company must have 25 of this type of car in operation by Dec. 1, 1915, subject to some slight alterations to the satisfaction of the board's Engineer. This car, however, did not materialize, owing to the unsatisfactory nature of the design, and on Nov. 22, 1915, the board ordered the company and the city to confer within 30 days, as to the best type of car to be used, and if they failed to agree, the city would be given 15 days in which to submit plans. The city declined to confer with the company, and the board, on Jan. 25, 1916, rescinded its order for the composite cars, and ordered that 25 double trucks cars of a type and character of construction as recommended by its Engineer, Jan. 11, 1915, be built and placed in service by Mar. 1, 1916, and a further order was made Feb. 7, 1916, that the balance of 50 were to be built with the greatest possible interior width, and of a design to be approved by the board's engineer, and placed in service by May 15, 1916. Cars were built on this order and placed in service, several months after the date called for by the original order, the delays being

chiefly due to the city's actions in objecting to any type of car proposed without presenting alternative plans of a reasonable kind, having regard to all the circumstances existing.

The outbreak of war in Aug., 1914, caused considerable dislocation of business generally, men, money and material all being affected, and there were increasing difficulties owing to war requirements. Railway rolling stock suffered, perhaps to a greater extent than most other things, as, while the materials entering into their construction were more urgently required for war purposes, cars were also required to transport manufactures from point to point inland, and from inland points to the seaboard. Again in building such rolling stock as could be handled, preference was naturally given to the type most needed, and passenger equipment had necessarily to be put in the background. However, in Mar., 1917, the Ontario Railway and Municipal Board, on the city's application for a re-opening and reconsideration of the order of Nov. 6, 1914, ordered that the company place in operation 100 additional double truck cars by Jan. 1, 1918, and another 100 by Jan. 1, 1919. At the same time, the city was also applying to the Ontario Legislature for legislation to compel the company to place 100 cars in operation during 1917, and 100 during 1918, and in default to pay to the city \$100 a car a day for every car less than the numbers quoted not operated. The legislature's committee struck this item out of the city's bill on the ground that it was a matter within the competence of the Ontario Railway and Municipal Board. At this time, a condition in the agreement between the city and the company, to the effect that all cars operated on the company's tracks must be built by the company, within the city limits, was in force, but this proviso was waived by the city, to enable the company to purchase cars from outside sources, if possible. Since then, the situation regarding the building of electric railway cars has not improved to any appreciable extent, mainly, it is stated, owing to the difficulty in obtaining the necessary equipment as desired. Several hearings have been held relative to the company's failure to have the cars in operation by Jan. 1, 1918, and the difficulties attending the question of getting orders filled, the board considering, that in any event, the company should have shown its bona fides by actually placing an order, at least, for car bodies, and obtaining deliveries of equipment as speedily as possible. A suggestion was made on behalf of the city, that the company had not used every endeavor to obtain the cars, and that one company at least, was in a position to make deliveries. The city asked for a specification of the cars, and arrangements were made to enable this company to quote and state what deliveries could be made. It appeared later, that the company mentioned was the Canadian Car and Foundry Co., and it was stated that the company would possibly be able to make delivery of 60 car bodies in a year, and perhaps the trucks for them also, leaving the railway company to deal with the matter of equipment. This negotiation is still going on, and the adjournment of the enquiry until Apr. 12, is to enable the company to see exactly what arrangement can be arrived at. No doubt there have been great difficulties in the way of obtaining deliveries of rolling stock, but these are now disap-

pearing, and it may be, that the company might have used greater diligence in attempting to carry out the board's order, but, as stated by the chairman, when the matter was before the board some time ago, the company could not be expected to launch into a heavy expenditure cheerfully, when the franchise had so short a time to run. The stand taken by the city in this, and other matters with which the Toronto Ry. is concerned, cannot readily be understood, as its actions are so erratic, and are apparently taken without due regard to the facts of the case, or the conditions surrounding it.

## Fort William Municipal Railway Deficits.

The application of the Fort William City Council to the Ontario Legislature for the confirmation of a bylaw authorizing the issue of \$225,000 of debentures to take care of the deficits in connection with the city's electric street railway, was considered by the Ontario Railway and Municipal Board, which reported to the legislature that "in important particulars the provisions of the Municipal Act respecting finance have for some years been ignored by the Fort William municipal council, in consequence of which a series of annual deficits in the operation of its street railway system have resulted in a large floating debt." The amount of the deficits are mentioned in the bylaw as:—1914, \$29,162.54; 1915, \$64,270.18; 1916, \$64,827.68; 1917, \$65,746.59. The board recommended that the city should be relieved from the floating debt by the authorization of the issue of debentures, as asked for, but that an additional section should be added to the bill in order to prevent the accumulation of deficits in the future, as follows:—"In case there shall be a deficit in the operation of the city's electric street railway in any calendar year subsequent to 1917, the council of the city of Fort William shall include in the estimates of the following year the amount of such deficit and shall in such following year assess and levy on the whole rateable property within the municipality a sum sufficient to pay such deficit and the interests thereon."

The bill, amended as recommended by the Ontario Railway and Municipal Board, was passed by the Legislature Mar. 15.

**Motor Busses for Winnipeg.**—The Winnipeg Electric Ry. is reported to have decided to place a number of motor busses on streets on which there are no street car tracks, to serve outlying districts and act as feeders to the street railway. It is said that the type of bus chosen will be built on a one ton truck chassis, with interior equipment similar to that of the regular street cars, and that each bus will have capacity for 16 passengers.

**The City of Edinburgh, Scotland,** having taken over the sections of its street railways, hitherto run by a private company and operated by cables, has received expert advice in favor of electrifying the system and operating on the overhead trolley system. The main portion of the city's street railways is operated on the underground trolley system.

The Ontario Legislature has passed an act providing, among other things, that the members of the Guelph City Council shall be directors of the Guelph Radial Ry. under the acts relating to the company. Up to the present time the council has nominated the directors annually, while the new provision is that a directorship of the G.R.R. goes with the office of alderman of the city.



## Winnipeg Electric Railway Annual Report and Meeting.

The report for the calendar year 1917 shows the following results:

Gross earnings from operations.....	\$3,339,009.84
Operating charges, exclusive of depreciation .....	2,143,512.73
Net operating revenue.....	\$1,195,497.16
Miscellaneous income .....	47,374.62
Gross income available to meet fixed charges, etc. ....	\$1,243,374.78
From which the following deductions are made:	
Interest charges on debt—	
ture stock, bonds, etc....	\$649,050.97
City's percentage, taxes, etc. ....	209,064.45
Other charges .....	31,629.71
	889,745.13

Net income, excluding depreciation.. \$ 353,629.65

The net income, on the same method of accounting, shows a decrease of \$91,621.80, compared with 1916, notwithstanding the fact that the gross revenue for the year under review shows an increase of \$27,840.20 over the previous year.

The net earnings shown above are slightly more than 1% on the \$9,000,000 capital stock. Twelve per cent. was paid in dividends on this stock a few years ago.

Gross earnings for the year showed a gain of \$27,840. Miscellaneous income was also slightly higher, but all the gain was absorbed in increased costs. The city's share of earnings showed but slight variation. There is deducted from 1917 earnings, however, \$201,050 for depreciation, which has no corresponding item in previous statements.

The 1917 form of statement makes the net income transferred to surplus \$152,579, with the year's sinking fund requirements of \$60,000 made a subsequent charge against total surplus. However, as the sinking fund deduction is properly chargeable to the year's income, it has been included in the following table in the list of general deductions, as in the previous year:

	1917.	1916.	1915.
Gross .....	\$3,339,009	\$3,311,169	\$3,663,895
Expenses .....	2,143,512	1,939,041	2,332,158
Net rev. ....	\$1,195,497	\$1,372,128	\$1,331,737
Misc. inc. ....	47,877	26,010	.....
Gross inc. ....	\$1,243,374	\$1,398,138	\$1,331,737
Less:			
Interest .....	\$ 649,050	\$ 643,991	\$ 637,263
City's p.c. ....	105,777	110,227	99,303
Disc. on sec. ....	11,797	22,929	.....
Taxes .....	103,286	91,569	99,068
Misc. exp. ....	5,985	17,503	.....
Other deduc. ....	13,846	6,665	.....
Sinking fund ....	60,000	60,000	.....
Depreciation ....	201,050	.....	.....
Tot. deduc. ....	\$1,150,795	\$ 952,887	\$ 835,635
Balance .....	\$ 92,579	\$ 445,251	\$ 496,101
Dividends .....	.....	.....	855,000
Balance .....	\$ 92,579	\$ 445,251	\$ 358,898
Prev. bal. ....	*1,125,526	*682,324	1,141,496
Tot. surp. ....	\$1,218,106	\$1,128,075	\$ 782,598

\*—After adjustments. \$—Deficit.

The record of the company's earnings, showing net after expenses but before charges, the amount distributed in dividends and the final surplus left over after all charges, for 11 years, follows:

Year.....	Net.	Dividends.	Surplus.
1906.....	\$ 714,341	\$ 248,669	\$214,635
1907.....	946,676	373,137	186,872
1908.....	1,117,222	595,789	149,614
1909.....	1,303,066	600,000	263,406
1910.....	1,629,508	600,000	334,769
1911.....	1,928,782	690,000	420,574
1912.....	1,761,236	720,000	474,463
1913.....	1,826,087	1,070,043	185,461
1914.....	1,685,093	1,080,000	*85,389
1915.....	1,331,737	855,000	*358,898
1916.....	1,398,138	.....	445,251
1917.....	1,243,374	.....	92,579

\*—Deficit.

The annual meeting was held at Winnipeg, Mar. 19. The directors and officers for the current year, who were all re-elected, are: Sir Wm. Mackenzie, Presi-

dent; Sir Augustus Nanton, Vice President; F. Morton Morse, Secretary-Treasurer; Sir Donald Mann, D. B. Hanna, G. V. Hastings, J. D. McArthur, R. J. MacKenzie, Hugh Sutherland.

## Electric Railway Projects, Construction, Betterments, Etc.

**Hull Electric Ry.**—We are officially advised that the company is building a Y at its car shed at Deschenes, Que., to facilitate the movement of single end cars, and that the company proposes to lay at an early date 7,000 ft. of new double track, with 85 lb. C.P.R. rails, on concrete paving, on Montcalm St. and Chelsea Road, Hull, Que. (Feb., 1917, pg. 73.)

**Montreal & Southern Counties Ry.**—A press report states that after some years of intermittent negotiations, an arrangement has been reached under which a loop line will be built on Grey Nun, Youville and Common Sts., Montreal, round the company's station. The report also states that it is proposed to build a new station with freight, express and general offices, on Youville St.; that the building will be three stories high, and that it will be built with steel and concrete frame, finished off with pressed brick.

**Nipissing Central Ry.**—The Ontario Legislature has voted \$2,000 for enlargement of car barns, and \$10,000 for increasing facilities at the harbor at Haileybury, Ont.

**Ottawa Electric Ry.**—The city board of control, on Mar. 1, authorized Controller Kent to make preliminary inquiries concerning the position of the city in connection with the O.E.R. franchise, which will expire in a few years. (Oct., 1917, pg. 407.)

**Windsor, Essex & Lake Shore Rapid Ry.**—We are officially advised that the company requires a number of cedar ties and trolley poles. (Oct., 1917, pg. 407.)

## Mainly About Electric Railway People.

**T. Ahearn**, President Ottawa Traction Co., has been elected President Ottawa Motor Club.

**A. H. Foster**, Manager, Guelph, Ont., Radial Ry., who has also been acting as fuel controller for the city during the winter, has resigned the latter position.

**R. Brunt**, one of the oldest employees of the British Columbia Electric Ry., has retired after 26 years service. When he entered the company's service, it had only four cars in operation.

**J. D. Fraser**, director and secretary-treasurer, Ottawa Electric Ry., has been spending a short time in the Gatineau country, north of Ottawa, recuperating after a heavy cold.

**S. S. Anderson**, heretofore Assistant to General Manager, Sandwich, Windsor & Amherstburg Ry., Windsor, Ont., has been appointed General Manager, succeeding his father, Jas. Anderson, resigned.

**H. A. Dorsey**, promoter and President, Dominion Park Co., Montreal, who also promoted, and was at one time President, of the ill fated Toronto Park Co., the property of which at Scarborough Beach was acquired afterwards by the Toronto Ry. Co., died at Montreal, Mar. 6, aged 57. He was buried at his birthplace, Bridgeport, Conn.

**D. A. Starr**, M.I.E.E., formerly of Halifax, N.S., whose birthday is mentioned

on another page of this issue, has since 1902 been General Manager of the Clyde Valley Electrical Power Co., Glasgow, Scotland, of which the Right Hon. A. Bonar Law, M.P., was chairman for nearly six years before being elected leader of the Unionist opposition in the British House of Commons. The company has now nearly 150,000 h.p. connected to its mains, which is being increased.

**James Anderson**, who has resigned his position as General Manager, Sandwich, Windsor & Amherstburg Ry., Windsor, Ont., has been elected Vice President. He was born near Ayr, Ont., June 20, 1851. At the age of 19 he entered the old Great Western Ry. service, and after serving a few years was appointed a conductor, which position he held until Nov., 1883, when he resigned and went into the grocery business as a member of the firm of Robinson & Anderson, which partnership was continued for 10 years. In June, 1893, he sold his interest to his partner and associated with John Davis, W. J. Tucker, Dr. Coventry, W. J. Pulling, of Windsor, Ont., and Wm. Hendrie of Hamilton, Ont., purchased the Sandwich, Windsor & Amherstburg Ry., which was operated under that ownership for 8 years. When it passed into the hands of the present owners, the Detroit United Ry. Co., in 1901, he was appointed General Manager, and the road has since been extended to Amherstburg and Tecumseh, and now operates 35 miles of line.

**Arthur Gaboury**, Superintendent, Montreal Tramways Co., has been appointed by the French Government as an officer of the Academy. The Consul General, in transmitting the diploma, spoke of it as a mark of the French Government's recognition of Mr. Gaboury's "activity and devotion to the cause of France." The insignia, a silver palm suspended from a purple ribbon, was presented to the recipient, in Montreal, Mar. 22, by Brig.-Gen. Arthur Boucher, of the French Army. Mr. Gaboury was born at Montreal, Apr. 6, 1875, and entered Montreal St. Ry. service, June 4, 1894, since when he has been, to Oct., 1900, conductor and motor man; Oct. to Nov., 1900, assistant inspector; Nov. to Dec., 1900, night clerk, Cote St. barn; Dec., 1900, to Sept., 1903, day chief clerk, St. Denis; Sept., 1903, to May, 1906, Claims Agent; May, 1906, to 1907, Assistant Superintendent, and from 1907 he has been Superintendent, Montreal St. Ry. and its successor, Montreal Tramways Co. He has been a member of the Canadian Electric Railway Association's executive committee, since June, 1915.

## Electric Railway Finance, Meetings, Etc.

**Calgary Municipal Ry.**—A press report states that the operating profit for January was about \$1,650, or about double that for Jan., 1917.

### Cape Breton Electric Co.—

	Jan., 1918.	Jan., 1917.
Gross. ....	\$41,428.23	\$38,581.01
Expenses. ....	33,256.65	23,208.99
Net. ....	8,171.58	15,372.02

### Edmonton Radial Ry.—

Revenue for Jan., 1918.....	\$47,733.83
Revenue for Jan., 1917.....	45,024.46
Passengers carried Jan., 1918.....	991,846
Passengers carried Jan., 1917.....	935,802

A press report of Mar. 12, states that the total revenue for 1917 was \$488,064.46, with a total expenditure of \$651,796.40, leaving a deficit of \$163,731.94. The deficit for 1916 was \$68,890.19, making the deficit for two years \$232,622.13.



**London Street Railway.—**

		2 mths. to Feb. 28	2 mths. to Feb. 28
	1918	1917	1917
Gross	\$33,853.94	\$31,720.65	\$69,920.21
Expenses	25,337.81	23,540.17	53,288.37
Net	8,516.13	8,180.48	16,631.84

**Quebec Ry., Light & Power Co.**—The report of earnings presented to the Quebec City Council by the company, Mar. 15, for the preceding three months, showed a decrease of \$16,639.74, according to a press report.

**Regina Municipal Ry.**—The report of the city auditors on the finances of Regina, Sask., for the year 1917 shows that there was a net deficit on the Regina Municipal Ry. of \$63,898.99; and a net deficit on the electric light and power plant of \$10,494.54, making a total deficit of \$74,393.53. This was taken care of by light and power taxes, \$34,500; net surplus on waterworks account, \$5,734.85; property sales contribution to street railway sinking fund, \$20,574.76, and \$13,583.92 carried to general revenue and expenditure account to be met out of general taxation.

**Toronto Railway.—**

	1918	City	1917	City
	Receipts	percent 'ge	Receipts	percent 'ge
January	\$ 562,707	\$ 84,406	\$510,053	\$ 76,508
February	473,185	88,754	436,725	70,978
Totals	\$1,035,892	\$173,160	\$946,778	\$147,486

**Operation of Interurban Cars in Winnipeg.**

Referring to the relationship between the Winnipeg Electric Ry. company and the interurban companies, the City Solicitor said that money that should have been used for the benefit of Winnipeg citizens that had gone into the Winnipeg, Selkirk & Lake Winnipeg Ry., and the Rapid Transit Co., and that was why the Winnipeg Electric Ry. Co. was in its present position.

Winnipeg's City Solicitor reported to the board of control Mar. 7 that it was not feasible to let the interurban cars run to the centre of the city and that the freight cars and the Headingly cars had no right whatever on the city streets. The Winnipeg Electric Ry. objected to the cars coming into the city, because of the congestion of traffic that would be caused in Main St. He advised that no action be taken by the city to bring the cars in until such time as some arrangements had been made between the Winnipeg Electric Railway and the radial companies, and they asked for that power from the city. The city had also to avoid overlapping franchises in view of the possibility of its taking over the street railway service in the city some day.

**Winnipeg Electric Ry. Publicity Department.**—The Winnipeg Electric Ry., with a view to promote good relations with the public, and effect a clearer understanding of the utility problems, has established a publicity department, under the direction of H. C. Howard, formerly on the Manitoba Free Press Staff. The company will issue a pamphlet publication, and distribute it on the street cars, to provide a direct means of communication between the company and its patrons, and it is expected it will also be instrumental in improving relations between the company and its employees, helping them in the discharge of their difficult duties to the public, and that a greater degree of confidence and good will between the company, its employees, and the public will be attained.

**Electric Railway Notes.**

The Edmonton Radial Ry. is said to be negotiating for the sale of some of its surplus cars.

The Ontario Legislature has voted \$25,000 for the purchase of two new cars for the Nipissing Central Ry.

Guelph Radial Ry. employees at Guelph, Ont., have formed a local division of the Street Railway and Electrical Workers' Union.

Edmonton Radial Ry. employees are discussing a new agreement with the Edmonton, Alta., City Council's utilities committee.

The Hamilton, Ont., St. Ry. is reported to have notified its men that it cannot give the increased wages asked and suggesting that the matter be arbitrated.

The Toronto & York Radial Ry. has not as yet made any arrangements for replacing the cars destroyed by fire at its Metropolitan and Scarboro car barns recently.

The London & Port Stanley Ry.'s rules and regulations for employees have been approved by the Board of Railway Commissioners, and recommended to the Governor in council for sanction.

Sandwich, Windsor & Amherstburg Ry. employees passed a resolution, Mar. 15, asking for higher pay, recognition of their union, and the installation of air brakes and modern sanders on all cars.

The Montreal & Southern Counties Ry. has received another motor car from Ottawa Car Manufacturing Co., the same as those previously delivered, and which were described and illustrated in our last issue.

The London St. Ry. has received trucks for five p.a.y.e. cars and expects the bodies at an early date. It is converting two double truck cars into p.a.y.e. ones, taking out the bulkheads and eliminating the vestibules.

The Winnipeg Electric Ry. has, since Jan. 1, according to a press report, lost the services of 116 conductors and motormen, including men on trial who could not prove their fitness, and men called up for military service.

It has been suggested that the British Columbia Electric Ry. might take over the section of the Great Northern Ry. between Cloverdale, Hazelmerre and Melrose, which that company is asking the Board of Railway Commissioners for leave to abandon.

The British Columbia Minister of Finance stated in the Legislature recently that the cost of the commission which investigated the transportation situation in the coast cities last year was \$2,858.65, of which \$2,054.65 was paid to Adam Shortt, the commissioner.

The St. Thomas-Aylmer Motor Bus Co. is reported as proposing to open additional routes to Lucan, Union and Port Bruce, Ont. The service started between St. Thomas and Aylmer in 1917, and is reported to have been profitable. W. N. Warburton, London, Ont., is Manager.

The City of Windsor, Ont., and the surrounding town, village and township municipalities are making arrangements for a joint meeting to discuss a possible plan for taking over all the electric railway lines centring on Windsor, to be operated as a municipally owned concern.

Montreal Tramways Co.'s employees have formed a union, and have become connected with the Amalgamated Association of Street and Electric Railway Employees of America. The union will not

supersede the benefit association which has been in existence for the past 15 years.

The Winnipeg City Council has been authorized by the Manitoba Legislature to license, control, regulate or prohibit jitneys within the city limits. The existing jitney licenses expire April 30, and it is expected that the city council will have taken definite action under its new powers by that date.

The British Columbia Electric Ry. has applied to the Board of Railway Commissioners for authority to increase its freight rates on the Vancouver-Steveston, New Westminster-Eburne, and Fraser River Valley, and other interurban lines, by 10%. Notice of the application has been given the municipalities affected.

In connection with a proposal to the Calgary, Alta., City Council, to protect itself against claims for damages from accidents on the municipal railway by means of an insurance policy, it was stated that 2% of the gross revenue was set aside to provide a fund to meet these claims. Commissioner Graves stated that this had been sufficient to take care of all claims.

In connection with the passing of the act giving Winnipeg City Council power to prohibit jitney traffic, it is reported that the Winnipeg Electric Ry. will put in service a new type of street car, lighter than the present one, that a wrecking car will be provided; that electric switches will be installed, and that improvements will be made in the schedules, which will prevent bunching and other delays.

Calgary Municipal Ry. employees are asking for an increase of wages to 50c. an hour. Commissioner Graves offered an increase to 46½c., but up to Mar. 15, the men had refused to accept less than 50c. Superintendent McCauley is reported to have said, Mar. 14, that the railway could not be operated on anything like a paying basis if the increase was granted, and that if the men were paid higher wages the fares would have to be increased.

Sandwich, Windsor & Amherstburg Ry. employees are asking for an increase of wages. The present wage schedule is said to be from 29c. to 32c. an hour, and the increases asked are from 45c. to 50c. an hour. The men also ask for the recognition of their union and other concessions. An official is reported to have said, Mar. 15, that an increase would be granted, but that the amount would not be fixed until the meeting of the directors at the end of March.

The Winnipeg City Council's special transportation committee's report on the street railway and jitney traffic questions, presented Mar. 18, contained a review of the whole transportation situation in the city, and concluded: "It is deemed inadvisable by the committee to make any specific recommendations, or findings, and consequently the data is transmitted for the consideration of the council as a whole." The council discharged the committee and decided to take up the consideration of the report at an early meeting.

**Guelph Radial Ry. Wages.**—The conductors and motormen of this line, which is owned and operated by the City of Guelph, Ont., have been given a war bonus of 1½c an hour, which makes their wages as follows: 1st year men, 23½c; second year, 25½c; third year, 27½c; shopmen average 29c.



# Marine Department

## Cargo Steamship Building for Dominion Government.

As stated in Canadian Railway and Marine World for March, the Marine Department had then placed contracts for three cargo steamships, as follows: Canadian Vickers, Ltd., Montreal, one of 4,300 tons dead weight capacity, and one of 8,100 tons d.w.; Collingwood Shipbuilding Co., Collingwood, Ont., one of 3,750 tons d.w. We also stated that on Feb. 18 no order had been given by the department to the Wallace Shipyards, Limited, North Vancouver, B.C., but that negotiations were in progress for 4 steel steamships, and we added later that the Wallace Shipyards had advised us on Feb. 23 that it had an order for 4. The Wallace Shipyards' management apparently construed as an order, a promise that 4 steamships would be ordered from it under certain conditions, and subject to the government's approval, but up to the time of writing only one vessel of 4,300 tons d.w. has been ordered from this company, the particulars being as follows:

Single deck, poop bridge and forecandle; straight stem; elliptical stern; 5 water tight bulkheads; single screw; triple expansion engines; 2 Scotch boilers, 180 lb. working pressure; forced draft.

Canadian Vickers, Ltd., laid the keel of the 4,300 ton steamship Mar. 12, and expect to deliver her before the close of navigation. Its 8,100 ton one is also expected to be delivered this year. The Collingwood Shipbuilding Co. expects to deliver its 3,750 ton vessel in November.

Another order for a 3,000 ton d.w. steamship will probably be given the Collingwood Shipbuilding Co. in April or May, and it is expected to place other orders this year, which will bring the total number up to 30 vessels, the government having decided on an appropriation of \$25,000,000 for this year. The orders are being placed at bulk sums, for vessels fully equipped. The steel plates, angles, etc., which are being procured by the government from the United States, under arrangements with the U.S. Government, will be turned over to the contracting shipbuilders at cost.

Three standard types of steamships have been decided on, one of approximately 3,000 tons d.w., to be built on the Great Lakes, the other two types of 5,100 and 8,100 tons d.w., respectively, to be built on the Atlantic Coast, including the St. Lawrence River up to Montreal, and on the Pacific Coast. The 3,750 ton one ordered from the Collingwood Shipbuilding Co. and the 4,300 ton one ordered from Wallace Shipyards, Ltd., are odd sizes that will not be repeated. The 30 steamships to be ordered this year will probably include 17 of the 3,000 ton type, 5 of the 5,100 ton type and 8 of the 8,100 ton type.

The government does not intend establishing or aiding in establishing any new shipyards, the Minister of Marine believing it to be better policy to confine orders to existing yards. No orders will be placed for wooden steamships.

Sir Robert Borden, in speaking in the House of Commons on Mar. 19, in the debate on the address in reply to the speech from the throne, read the following memorandum, prepared by the Marine Department, which confirms the foregoing information, and also that published in Canadian Railway and Marine World in March.

The intention is to confine at present the awarding of contracts for the construction of steel steamships to yards already established and actually engaged in constructing steel ships. The yards so equipped and at present engaged in constructing, are as follows:—Canadian Vickers, Ltd., Montreal; Davie Shipbuilding Co., Lauzon, Que.; Kingston Shipbuilding Co., Kingston, Ont.; Collingwood Shipbuilding Co., Collingwood, Ont.; Polson Iron Works, Ltd., Toronto; Dominion Shipbuilding Co. Toronto; Midland Shipbuilding Co., Midland, Ont.; Port Arthur Shipbuilding Co., Port Arthur, Ont.; British American Shipbuilding Co., Welland, Ont.; Canadian Allis-Chalmers, Ltd., Bridgeburg, Ont.; Wallace Shipyards, Ltd., Vancouver, B.C.; J. Coughlan & Son, Vancouver, B.C.

The estimated combined capacity of these several yards is approximately 250,000 tons a year. All of these yards, with the exception of the Kingston Shipbuilding Co., are at present fully occupied in constructing steamships for the Imperial Munitions Board or for the Dominion Government. As the ships under contract for the Imperial Munitions Board are completed and the building berths become vacant, they are to be immediately occupied by the government. When the government launched its programme of shipbuilding, two berths only at the yards throughout Canada, were vacant, one of these was at the yard of Canadian Vickers, Ltd., Montreal, and one at the Collingwood Shipbuilding Co.'s yard.

A contract has been placed with Canadian Vickers, Ltd., for the construction of a steel vessel of 4,300 tons deadweight capacity, the keel of which has been laid and considerable construction work begun as well.

A contract has been concluded with the Collingwood Shipbuilding Co. for a ship of 3,750 tons deadweight capacity, the materials for which are in course of delivery. Both of these vessels will be in commission before the close of navigation next autumn.

The next building berth to become vacant will be in May at Canadian Vickers, Ltd. On this berth it is proposed to lay down a ship of 8,100 tons deadweight capacity, which will also be completed and in commission before the end of the year.

Two berths will become vacant at the Collingwood Shipbuilding Co.'s yard at a later date in May. These berths will be at once occupied with ships of 3,000 tons deadweight capacity each, for which the material is under order. While the builders hold out hope that these vessels may be ready before the close of navigation, it is not expected that they will be in commission before the opening of navigation in 1919.

The Wallace Shipyards, Ltd., Vancouver, will also have a berth vacant in May. A contract has been made with this company for laying down a ship of 4,300 tons deadweight capacity. The material has been ordered and the company undertakes to prosecute the work vigorously and complete the vessel ready for commission before the end of the year.

The British American Shipbuilding Co., Welland, Ont., expects to have berths becoming vacant as follows: one in June, one in August, one in October and one in

December. It is proposed to occupy these berths as they become vacant, with the construction of ships of 3,000 tons deadweight capacity for which delivery is promised on the opening of navigation, 1919.

The Midland Shipbuilding Co. of Midland, Ont., will have two berths vacant in November next. These will be occupied with the construction of two ships of 3,000 tons deadweight capacity each, for which delivery is promised early in the summer of 1919.

The Polson Iron Works, Ltd., Toronto, represents that it will have four berths vacant in October next. It is proposed to occupy these with the construction of four steamships of 3,000 tons deadweight capacity each. Delivery of these ships is promised for the summer of 1919.

Canadian Allis-Chalmers, Ltd., Bridgeburg, Ont., will have berths becoming vacant as follows: one in June, two in September and one in November. It is expected to place contracts with this company as berths become vacant, for steamships of 3,000 tons deadweight capacity each. Delivery of the first of these is expected before the close of navigation this year and of the balance during the summer of 1919.

The Davie Shipbuilding Co., Lauzon, Que., will have two berths available in August and two additional before the close of navigation. It is proposed to place contracts for these berths for ships of 5,100 tons deadweight capacity. Delivery of the first of these ships is expected in Aug., 1919, and the others before the close of navigation, 1919.

The Port Arthur Shipbuilding Co., Port Arthur, Ont., will have two berths becoming vacant in July and two before the close of navigation. It is proposed to occupy these berths with ships of 3,000 tons deadweight capacity. Delivery of all of these vessels is expected on the opening of navigation, 1919.

J. Coughlan & Son, Vancouver, B.C., are fully occupied in the construction of ships for the Imperial Munitions Board and are not likely to have any vacant berths during this year. They expect, however, to have some berths become vacant early next year. As berths become vacant, it is proposed to occupy them in the construction of ships of 8,100 tons deadweight capacity.

On this programme of ship construction, the Marine Department is looking forward to have four steamships of the combined tonnage of 23,500 tons in commission before the end of the present year; and, while it is somewhat difficult so far in advance to accurately estimate the work that may be accomplished during the year 1919, it is fully expected that an additional 50 ships with an aggregate tonnage of 235,000 tons will be in commission.

The government programme of construction contemplates the construction of three types of vessels. One type will comprise vessels of 3,000 tons deadweight capacity. Another type 5,100 tons and another type ranging from 8,000 to 10,000 tons. The general features of these various types will be based on the latest types of standard cargo vessels adapted for bulk or general cargo, with loading and discharging facilities in accordance with the best practice. The vessels will



be designed to Lloyds highest class, the steamboat inspection requirements, and will have a sea speed of 11 knots.

All arrangements have been concluded with the United States authorities for purchasing in that country all the steel plates, the boiler plates and sections required for carrying out the government programme up to June, 1919. This steel has been purchased at the price fixed by the U.S. Government for the steel requirements of the U.S. Shipping Board. These prices are substantially lower than the prices Canadian shipbuilders have been obliged to pay from time to time during the past twelve months and represent a very large saving in the construction price of ships. The purchase of the material in the U.S. was made necessary by reason of the fact that plates and shapes required for the construction of ships are not at the present time manufactured in Canada. The manufacture of all materials required for the construction of ships, more particularly plates and shapes is, however, under consideration by the government and it is hoped that the materials for this purpose eventually will be manufactured in Canada.

Sir Robert Borden added:—"I should like to express this government's appreciation of the assistance which was rendered by the U.S. Government, in enabling 80,000 tons of steel to be purchased at the same price as that which is paid by the U.S. Shipping Board. Otherwise there would have been a great increased cost to this country."

**Steel Manufacture in Canada.**—As noted above, the Marine Department has arranged to secure 80,000 tons of steel plates from the United States for use during the next 12 months. The Minister of Marine announced at Ottawa Mar. 26 that he had arranged with the Dominion Iron & Steel Co. to extend its plant at Sydney, N.S., so as to make it capable of producing annually 150,000 tons of steel plates, angles, etc., for shipbuilding. The department has contracted to take 50,000 tons a year, but 75,000 tons may be taken. The company will also be free to take orders from shipbuilders, etc. The expenditure necessary to increase the plant is stated at from \$3,000,000 to \$5,000,000, and it is expected to have the new mill, etc., ready in a little over a year.

**Conference on Shipbuilding Labor Conditions.**—Representatives of steel shipbuilding companies on the Great Lakes etc., together with officers of labor unions, had a conference with the Premier, the Minister of Marine, the Minister of Labor and Senator G. O. Robertson at Ottawa, Mar. 27. There had been some prospect of disagreement on wages, but at the conference all parties expressed a willingness to amicably co-operate in carrying out a plan which is recognized as vital to the allies, while at the same time being a source of great industrial prosperity to the Dominion.

Sir Robert Borden pointed out the great need of shipbuilding to aid in overcoming the allied shortage, and appealed alike to employers and employees to amicably co-operate, so that the product could be turned out with the utmost speed.

The Minister of Marine, after concurring in what the Premier had said as to the need of ships, stated that the government policy was not for the war alone, but contemplated a permanent national industry in shipbuilding. Canada, he said, proposed to be self contained as regards her marine requirements. He referred to the contract made with the Dominion Iron & Steel Co., particulars of which are given above, and said that it was the

government's policy to order ships at a fixed price per ton, and it was therefore very necessary to ship builders to know the rate they would have to pay, particularly as 60% of the cost was labor. He urged strongly that a scale of wages be fixed for at least a year.

P. M. Draper, Secretary, Dominion Trades and Labor Congress, speaking for organized labor, fully realized the national necessity of shipbuilding, and spoke hopefully of employees and employers agreeing. H. B. Smith, President, Collingwood Shipbuilding Co., expressed similar sentiments. There is thought to be little question that any prospective difficulty will be obviated.

### British Vessel Losses During the War.

In a statement by the First Lord of the Admiralty, in the British House of Commons, Mar. 20, it was shown that 6,000,000 tons of shipping were sunk during 1917, while the enemy claimed to have sunk 9,500,000 tons. The merchant tonnage produced in the last quarter of 1914 was 420,000 tons, and this amount had decreased steadily ever since. The total allied and neutral tonnage at present is approximately 42,000,000 tons, including vessels formerly owned by the enemy and now in other hands. The output of tonnage was very low in 1915 and reached its lowest point in 1916. The decline was coincident with the increased output of munitions, and before the intensified submarine campaign, United Kingdom tonnage was 1,300,000 tons to the bad. During the last quarter of 1917, the allied nations were within 100,000 tons monthly of making their losses good, and were then replacing 75% of their lost tonnage.

At present, 47 shipyards, with 209 berths, are engaged on ocean going merchant vessels, and there has been an enormous accomplishment since the early stages of the war. The output for the last quarter of 1917, was 420,000 tons against 213,000 tons for the same period of 1916, and 42,000 tons for the same period of 1915. When the Controller of Construction took over the shipyards there were 50 large merchant vessels in various stages of construction, on which work had been stopped for lack of material, and in many cases these were congesting the yards. He stated that it was well within the capacity of British yards to make good the world's losses, given an adequate supply of men and material. The total foreign output for the last quarter of 1917, was 512,000 tons, making a total output of 932,000 tons, against total losses of 1,200,000, the lowest since the intensive submarine campaign commenced. During the same period, Great Britain lost 260,000 a month, and built 140,000 a month. The output of repair work continued scarce, but increased in February by 80%, as compared with Aug., 1917. The men engaged on repair work might have produced about 500,000 tons of new tonnage had they been engaged on such work.

The three main factors in the shipbuilding problem are:—first, patrol and other craft to destroy submarines and safeguard ships at sea; second, salvage and repair work; third, new merchant tonnage. He contended it would be a great mistake to put all the industries' energies into the building of new vessels. The drop in the merchant shipping losses, he attributed to the efficiency of the patrol and anti submarine craft, and to the valuable convoy of other vessels. He contended that shipbuilding had not been delayed by changes in design of vessel on the stocks,

such changes as were made, were to secure increased speed, greater comfort for crews, to simplify designs and to provide additional heavy gun mountings. Yards had suffered from a shortage of material during the summer of 1917, but now the stocks are more satisfactory than they had been for years. The present need is for skilled labor, and he hoped that within a few weeks it would be only for unskilled labor.

He announced the appointment of Lord Pirrie, Chairman of Harland & Wolff, Ltd., shipbuilders, Belfast, Ireland, as Contoller General of Merchant Shipbuilding, and stated that that company had put more than half of its output into standardized ships, and expected to launch one such vessel every two weeks, shortly. Lord Pirrie was born at Quebec, Que., May 31, 1847, and has been connected with Harland & Wolff's since 1862. He is also associated with several large shipowning companies.

### Chartered Vessels and War Region Risks.

Canadian Railway and Marine World for February contained a report of the appeal of the Dominion Coal Co. against the Canadian Court of Appeal's decision, relative to the operation of the s.s. Maskinonge, under charter from the Maskinonge Steamship Co., Liverpool, Eng., in what is alleged to have been a "war region." The owning company sought to recover insurance premiums paid, under a clause in the charter providing for war insurance should the vessel be operated in a war region, and the recovery of the amounts so paid from the charterer. The vessel was being operated between Sydney, N.S., and Boston, Mass., during the latter part of 1915, and in October of that year, a German submarine appeared off Nantucket, N.Y., and sank some vessels. On this, the owning company insured the vessel, and later claimed the amount of the premiums paid, on the ground that the vessel was being operated in a war region within the meaning of the terms of the charter. The charterer claimed that the appearance of the submarine was merely a sporadic attack, which, of itself would not constitute the region a war zone, and in any case, the appearance was at least 100 miles from the nearest point to which the chartered vessel was being operated.

Since that report was published, judgment has been delivered in the House of Lords, and the Dominion Coal Co.'s appeal has been dismissed. In giving judgment, Lord Dunedin said that in his opinion, the war region must indicate the region where from time to time war affected the risks which ships run. Lords Atkinson, Parker and Sumner concurred, but the Lord Chancellor dissented, and in doing so said, that in his opinion, the waters constituting a war region must be within a region in which hostilities were carried on at the time in point of fact. No apprehension, however reasonable, would make it a war region, if in reality it were not so. One isolated outrage of this description did not constitute a war region. The submarine would appear to have been merely passing through on a return voyage; she did not cruise in those waters, and there were no systematic operations. It might have been a perfectly right and prudent thing for the owners to effect the additional insurance, but they could recover only if the charterer had sent the vessel to what was in fact a part of the war region.



# Coast, Lake and River Steamship Officers for 1918.

For a considerable number of years, Canadian Railway and Marine World, availing itself of its complete records of navigation companies throughout Canada, has annually, in March and April, obtained from them lists of their vessels to be in operation during the ensuing seasons, together with the names of the captains and chief engineers appointed, the procuring of these lists having, of course, entailed considerable correspondence and other work. It has therefore been exceedingly annoying to find during a few years past that exactly similar information was published in another Canadian paper, invariably in issues subsequent to those in which it appeared in Canadian Railway and Marine World, and without any credit being given to us. As the matter was absolutely identical, even our alphabetical arrangements of vessels according to their names being followed, we were satisfied that it was being reproduced from our columns, but we were without what might be termed legal proof, until last season, when one of our associate editors set a trap, which the appropriator (to use a mild term) walked into with both feet. In Mar., 1917, the Great Lakes Transportation Co., Midland, Ont., sent us its list as follows, the first column giving the names of the vessels, the second the names of the captains, and the third the names of the chief engineers:—

Glenshee	W. A. Lavigne	F. Goodwin
Glenfinnan	W. Lenton	C. A. McWilliams
Glenlyon	A. Hudson	D. Sinclair
Glenlivet	Fred Burke	G. Price
Major	S. Corson	P. Eagles
Mack	Wm. Ferguson	Not appointed
Stewart	J. G. McCarthy	Jas. Wilson
America	A. Monck	Chas. Monroe
Brazil	A. R. McLeod	W. J. Holmes
Glenfinnan	W. Lenton	C. A. McWilliams
Glenlivet	Fred Burke	G. Price
Glenlyon	A. Hudson	D. Sinclair
Glenshee	W. A. Lavigne	F. Goodwin
Mack	W. Ferguson	.....
Major	S. Corson	P. Eagles
Stewart	J. G. McCarthy	Jas. Wilson

In pursuance of our regular system, our associate editor arranged the above information alphabetically, according to the vessels' names, as follows:—

America	A. Monck	Chas. Monroe
Brazil	A. R. McLeod	W. J. Holmes
Glenfinnan	W. Lenton	C. A. McWilliams
Glenlivet	Fred Burke	G. Price
Glenlyon	A. Hudson	D. Sinclair
Glenshee	W. A. Lavigne	F. Goodwin
Mack	W. Ferguson	.....
Major	S. Corson	P. Eagles
Stewart	J. G. McCarthy	Jas. Wilson

Before sending the copy to the composing room, to be put in type, our associate editor set a trap for the persons we suspected of appropriating our information, by making several changes. First, he changed the name of the s.s. Brazil to "Breezeit," and substituted for the names of its captains and chief engineers the names of those officers on the s.s. Glenfinnan, inserting for the Glenfinnan the names of the Brazil's officers. And so as to leave no chance for an appropriator to escape detection, he gave the name of the America's chief engineer as "C. Doctrine" instead of C. Monroe (Monroe doctrine), and the list thus changed was published in our April, 1917, issue as follows:—

America	A. Monck	C. Doctrine
Breezeit	W. Lenton	C. A. McWilliams
Glenfinnan	A. R. McLeod	W. J. Holmes
Glenlivet	F. Burke	G. Price
Glenlyon	A. Hudson	D. Sinclair
Glenshee	W. A. Lavigne	F. Goodwin
Mack	W. Ferguson	.....
Major	S. Corson	P. Eagles
Stewart	J. G. McCarthy	Jas. Wilson

May, 1917, passed without any evidence of the bait having been taken, but in its June, 1917, issue, Marine Engineering of Canada, published in Toronto, gave a list of Canadian vessels, captains and chief engineers, in which it copied verbatim, without the slightest alteration, the fixed up information we had published two

months before about the Great Lakes Transportation Co., including our transposition of officers' names for the s.s. Brazil and the s.s. Glenfinnan, and the substitution of "C. Doctrine" for C. Monroe as Chief Engineer of the s.s. America. As before stated, the changes we made in the list were a trap to catch a piratical cotemporary, and Marine Engineering of Canada's scissors and paste editor walked blindly into it. This is only one instance of appropriation perpetrated. A comparison of information about other transportation companies shows that our cotemporary took it systematically from our columns. Comment is unnecessary, but we wish to warn our cotemporary to turn from the error of its ways, and not to appropriate matter from our columns, which we collect at considerable trouble, and to attempt to palm it off as its own. We have reserved this exposure for nearly a year, preferring to give it now, when again commencing our annual publication of the navigation companies' returns to us.

In the furnishing of the class of information referred to, as well as in all its other departments, Canadian Railway and Marine World continues to occupy, and will continue to occupy, the leading position which its 21 years of publication has given it, and will maintain its character for originality and accuracy which it values as one of its chief assets.

## Appointments for 1918.

The following appointments made by navigation companies, engaged in Canadian navigation, for their various steamships and tugs, have been reported to Canadian Railway and Marine World. The first column shows the names of the vessels, the second those of the captains, and the third those of the chief engineers.

ALGOMA CENTRAL STEAMSHIP LINE, SAULT STE. MARIE, ONT.	Agawa	J. D. Montgomery	J. L. Smith
	Home Smith	A. McIntyre	Jas. Wilson
	J. Frater Taylor	R. H. Boyle	W. T. Rennie
	W. C. Franz	W. C. Jordan	L. B. Cronk
ALGOMA EASTERN RY., SAULT STE. MARIE, ONT.	Valcartier	J. A. Brown	J. G. MacHattie
AMERICAN TRANSIT CO., SARNIA, ONT.	Frank B. Stevens	F. B. Ely	A. MacIntosh
CANADA ATLANTIC TRANSIT CO., MONTREAL	Arthur Orr	J. Simons	D. E. Mance
	Kearsarge	H. Jaenke	F. Wilke
CANADIAN MARITIME CO., MONTREAL	Gaspesien	T. E. Filmer	T. H. Angell
	J. H. Plummer	S. W. H. Jeffrey	A. Cote
	Saskatoon	F. J. Shoemack	M. Parry
	Wethersfield	D. R. Davies	H. A. West
CANADIAN PACIFIC CAR AND PASSENGER TRANSFER CO., PRESCOTT, ONT.	Charles Lyon	W. Henry	L. Black
C.P.R. BAY OF FUNDY SERVICE	Empress	A. MacDonald	J. M. Pendrigh
C.P.R. DETROIT RIVER CAR FERRIES	Michigan	H. Farrow	F. Merrill
	Ontario	R. Brown	C. A. Sullivan
C.P.R. GREAT LAKES SERVICE	Alberta	F. J. Davis	C. Butterworth
	Assiniboia	J. McCannel	A. A. Cameron
	Athabasca	M. McKay	G. D. Adam
	Keewatin	M. McPhee	W. Lewis
	Manitoba	J. McIntyre	R. Sinclair
CENTRAL CANADA COAL CO., BROCKVILLE, ONT.	Samuel Marshall	W. A. Tulloch	H. Huff
CHATHAM NAVIGATION CO., CHATHAM, ONT.	Ossifrage	J. T. Stockwell	G. Peel
CLEVELAND AND BUFFALO TRANSIT CO., CLEVELAND, OHIO	City of Buffalo	W. H. Smith	D. Donaldson
	City of Erie	J. Pickel	G. Turnbull
	Seandbee	H. McAlpine	C. Lorimer
	State of Ohio	A. H. McLachlan	A. Greb
COAST STEAMSHIP CO., VANCOUVER, B.C.	Celtic	J. Finlay	H. Buxton
	Clansman	L. Anderson	H. Nissen
	Coaster	M. F. MacDonald	D. McDonald
CRYSTAL STREAM STEAMSHIP CO., ST. JOHN, N.B.	D. J. Purdy	F. Day	T. N. Fader
	Majestic	H. Crabb	W. Hurder
FARQUHAR & CO., HALIFAX, N.S.	Sable I.	J. A. Farquhar	C. Jones

FARRAR TRANSPORTATION CO., TORONTO	Collingwood	John Ewart	Duncan McLeod
	Meaford	J. J. Painter	T. W. Verity
GRAND TRUNK PACIFIC COAST STEAMSHIP CO., VANCOUVER, B.C.	Lorne	F. Johnston	D. H. Cochrane
	Prince Albert	H. Neddin	A. S. Munro
	Prince George	D. Donald	I. O. Handy
	Prince John	W. S. Morehouse	R. Knox
	Prince Rupert	D. McKenzie	R. Bell
	Tillamook (motor ship)	G. Rose	M. Risser
G.T.R. CAR FERRIES, WINDSOR, ONT.	Great Western	F. Bausette	Jos. Ladd
	Huron	O. Lalonde	A. Cook
	Lansdowne	John Jackson	W. Belsom
GREAT LAKES TRANSPORTATION CO., MIDLAND, ONT.	America	A. Mouck	C. Munroe
	Brazil	A. R. McLeod	C. D. Adamsen
	G. A. Richardson	J. T. McCarthy	A. Whitehead
	Glenfinnan	W. A. Linton	J. Newman
	Glenisla	Jas. Tindall	W. McWilliams
	Glenlyon	A. A. Hudson	D. Sinclair
	Glenorchy	F. Burke	G. Price
	Glenshee	W. A. Lavigne	F. Goodwin
	Major	S. Corson	P. Eagles
HALIFAX AND CANSO STEAMSHIP CO., HALIFAX, N.S.	Scotia	Jas. Schneisser	J. G. Clark
W. HANNA & CO., PORT CARLING, ONT.	Mink	W. H. McCulley	.....
	Newminko	J. J. McCulley	.....
IMPERIAL OIL LTD., TORONTO	Imperial	H. C. Mimms	G. Brisbin
	Imperoyal	P. W. McBride	W. Agate
	Locolite	G. Findlay	G. Tooker
	Iocoma	C. H. Harmanson	C. Arnberg
	Reginolite	R. Flack	Jas. Ross
	Royalite	G. T. Cross	G. W. Bennett
	Sarnolite	R. T. Jones	John Spencer
	Talaralite	N. Scott	.....
(to be launched in May)			
INTERNATIONAL TRANSIT CO., SAULT STE. MARIE, ONT.	Algoma	F. Frech	C. H. Innes
KEENAN TOWING CO., OWEN SOUND, ONT.	Keenan	W. G. Sinclair	W. Owens
LAKE ERIE NAVIGATION CO., WALKERVILLE, ONT.	Marquette and Bessemer No. 1	J. A. Patterson	H. Culp
MAGNETAWAN RIVER AND LAKE STEAMBOAT CO., BURK'S FALLS, ONT.	Armour	W. M. Kennedy	R. Johnstone
	Glenada	E. Ponch	J. Kennedy
	Gravenhurst	S. Carswell	J. Stoner
	Wanita	T. Kennedy	T. Chambers
MARITIME STEAMSHIP CO., BLACKS HARBOR, N.B.	Connors Bros.	E. H. Warnock	G. Cowie
MARQUETTE AND BESSEMER DOCK AND NAVIGATION CO., WALKERVILLE, ONT.	Marquette and Bessemer No. 2	J. Vanbuskirk	T. Elliott
MATHEWS STEAMSHIP CO., TORONTO	Easton	D. N. Laroche	J. T. Myler
	Laketon	C. R. Abinson	J. G. Fisher
	Malton	J. A. Smith	G. H. Finn
	Riverton	W. J. Noles	D. McKenzie
	Steelton	W. J. Kirkwood	J. A. McGill
	Yorkton	R. Alexander	W. Whips
MONTREAL AND CORNWALL NAVIGATION CO., CORNWALL, ONT.	Britannic	A. Anderson	N. Marchand
NIAGARA ST. CATHARINES AND TORONTO NAVIGATION CO., ST. CATHARINES, ONT.	Dalhousie City	G. W. Blanchard	J. H. Browe
NORTHERN NAVIGATION CO., SARNIA, ONT.	Hamonic	A. L. Campbell	John Smith
	Huronic	A. M. Wright	J. W. McLeod
	Noronic	R. D. Foote	S. Brisbin
	Waubic	John Dube	F. Pringle
ONTARIO CAR FERRY CO., MONTREAL	Ontario No. 1	S. McCaig	D. L. Smyth
	Ontario No. 2	F. D. Forrest	J. A. Nicol
PEMBROKE TRANSPORTATION CO., PEMBROKE, ONT.	Oiseau	Jos. Tessier	Jas. Trotter
PENINSULA TUG AND TOWING CO., WIARTON, ONT.	Crawford	R. E. Jewel	R. H. Isbester
	Homer Warren	F. Wood	W. C. Fox
PORT COLBORNE TUG CO., PORT COLBORNE, ONT.	J. V. O'Brien	D. McGrath	John Anderson
	Meteor	John McGrath	.....
PORT HURON AND SARNIA FERRY CO., PORT HURON, MICH.	City of Cheboygan	G. Waugh	R. Cameron
	Hiawatha	E. M. Thomas	H. Myers
	Omar D. Conger	W. S. Major	R. A. Campbell
PRESCOTT AND OGDENSBURG FERRY CO., PRESCOTT, ONT.	Miss Vandenberg	S. Delaney	W. J. Jento
RIDEAU STEAMBOAT CO., OTTAWA, ONT.	Wanakewan	G. Depense	B. W. Campsall
	Bon Ami	E. Mackie	J. A. McKoy
		J. F. Sowards	KINGSTON, ONT.
	H. N. Jex	M. Shaw	W. McCabe
	Jeska	E. Smith	W. Manahan
	Shanly	J. F. Sowards	P. Clark
SPARROW LAKE STEAMER LINE, SPARROW LAKE, ONT.	Glympse	F. Stanton	G. T. Stanton



CITY OF THREE RIVERS, QUE.		
Le Progres	L. P. Bellefeuille	A. Frenette
TORONTO HAMILTON AND BUFFALO NAVIGATION CO.,		
HAMILTON, ONT.		
Maitland No. 1	B. T. Haagensohn	C. E. Sylvester
VALLEY STEAMSHIP CO., ANNAPOLIS ROYAL, N.S.		
Granville	B. C. Collins	J. Logan
VILLE MARIE NAVIGATION CO., VILLE MARIE, QUE.		
Bobs	E. Letellier	N. Brouillard
Meteor	J. J. Ladouceur	J. Desrochers
Silverland	H. Kelley	A. J. Kelley
WABASH RY. CAR FERRIES, DETROIT, MICH.		
Detroit	F. A. Huntoon	H. Lowry
Transfer	G. W. Honner	W. Taylor
Transport	W. Norvell	F. Robinson

## Halifax Harbor Regulations.

Following on the enquiry into the causes and consequences of the recent disastrous explosion of a munitions vessel after collision with another, in Halifax harbor, the Marine Department has issued regulations regarding the movements into, within and out of the harbor, the chief points of which are summarized as follows:—Shipowners and agents are advised that as a general rule they should time the arrival of vessels for daylight, to avoid delay in admitting them to the port, and they should communicate the times of all expected arrivals to the Chief Examining Officer. Early notice of the proposed departure of all vessels should also be given to the Collector of Customs. The eastern passage is closed to all traffic, and vessels attempting to enter thereby are liable to be fired on without warning. All vessels other than British ships of war wishing to enter port are required to communicate with the examination steamer, and incoming merchant vessels will be admitted to the examination anchorage at all times of the day, or night, irrespective of whether the port is open or closed, but when the port is closed, no merchant vessel will be permitted to proceed beyond the examination anchorage. Masters must have all way off their vessels on reaching the examination steamer and particularly in foggy weather, or they are liable to be fired on. The port will, as a general rule, be open to merchant vessels arriving at night and such vessels must have ready four efficient allround lights, two red and two white, to be used as directed by the examination officer. Masters must obey the examination officer's directions when approaching port, or their vessels will be liable to be fired on by the battery. Usual signals made by vessels arriving, either by flags, guns, bomb rockets, lights, etc., are not to be made. Masters are specially warned that it may become necessary, in the event of an attack on the port being imminent, to remove buoys or extinguish lights without notice, and vessels should therefore be navigated with extreme caution on approaching port. The use of wireless telegraphy is absolutely prohibited, both in the examination anchorage and in the port.

All vessels must take a pilot both entering and leaving the harbor, with the following exceptions:—Small vessels not exceeding 120 tons engaged in the coastal trade and frequently visiting Halifax; and vessels which are regular traders to the port which may, after sufficient experience, apply to the Chief Examining Officer for permission to leave the harbor without a pilot.

No vessel may change her berth without authority, which must be obtained in writing. Between Bedford basin and no. 2 deepwater pier, vessels are not to proceed in opposite directions at the same time. Masters must comply with the regulations regarding lights, as vessels without lights in the vicinity of the port

at night will immediately be treated as hostile.

If any vessel causes any injury by collision or otherwise to any ship belonging to or engaged in His Majesty's service or to any person on board such ship, or is so managed or navigated or handled as to cause danger of collision, the master or other person in charge shall be guilty of an offence, unless it is shown that such injury or danger was not caused or contributed to by any failure on his part to keep or cause to be kept a proper lookout or to observe any of the orders for preventing collisions at sea or any orders relating to the navigation or mooring of ships in a harbor or approaches thereto.

No vessel is allowed to leave the port at night except under special circumstances. The new regulations cancel all previous regulations, and penalties of \$5,000 fine, or five years imprisonment, or both, are provided for contraventions of the regulations.

## Marine Engineers Wage Scale on the Great Lakes.

The National Association of Marine Engineers of Canada has sent to owners of steamships operating on the Great Lakes the following minimum wage scale and classification for steamships operating on the Great Lakes District, which was adopted by the Great Lakes Executive Committee, representing Port Arthur, Sault Ste. Marie, Collingwood, Owen Sound, Midland, Toronto and Kingston Councils, Jan. 11, 1918, and approved by the National Executive Committee, to be effective during the season of 1918, or until revised or amended by the Great Lakes Executive Committee.

"Conditions of Employment.—This minimum wage scale does not recognize the payment of bonuses in lieu of wages, or restrict additional remuneration in any of the classes. All engineers shall be provided with first-class transportation, board and other legitimate expenses during their employment away from home. All references to tonnage to be construed as gross tons. In all reference to monthly conditions, 30 days to constitute a month. All ratings in all classes to include board and accommodation, excepting passenger ferry steamers. Overtime at the rate of 75c an hour for all time over 12 hours shall be paid engineers on boats carrying only one engineer. Any special conditions of employment not covered by the provisions of this wage scale to be submitted to the Great Lakes Executive Committee through its Business Manager for adjustment.

### Passenger Steamships.

Class 1.—All passenger steamships of 3,000 tons or over, chief engineer, \$2,000 a season; second engineer, \$150 a month.

Class 2A.—All passenger steamships of 1,250 tons and under 3,000 tons, running six months or over, chief engineer, \$1,800 a season; second engineer, \$125 a month.

Class 2B.—All passenger steamships of 1,250 tons and under 3,000 tons, running less than six months, chief engineer, \$1,600 a season; second engineer, \$125 a month.

Class 3.—All lake passenger steamships under 1,250 tons and all passenger steamships confined to river service, requiring second-class engineer, chief engineer, \$1,400 a season; second engineer, \$105 a month.

Class 4.—All passenger steamships from 45 n.h.p. to 25 n.h.p., chief engineer, \$135 a month; second engineer, \$95 a month.

Class 5.—All passenger steamships under 25 n.h.p., chief engineer, \$110 a month.

### Freight Steamships.

Class 1.—All freight steamships of 5,000 tons or over, chief engineer, \$2,000 a season; second engineer, \$150 a month.

Class 2.—All freight steamships of 3,000 tons and under 5,000 tons, chief engineer, \$1,800 a season; second engineer, \$125 a month.

Class 3.—All water bottom freight steamships under 3,000 tons requiring second-class engineer, chief engineer, \$1,600 a month, second engineer, \$110 a month.

Class 4.—All freight steamships not included in classes 1, 2 and 3 and requiring second-class engineer, chief engineer, \$1,500 a season; second engineer, \$100 a month.

Class 5.—All other freight steamships not otherwise classified, chief engineer, \$135 a month; second engineer, \$95 a month.

### Ferry Steamboats.

All passenger ferry steamboats operating from Sault Ste. Marie, Ont., and requiring second-class engineer: chief engineer, \$160 a month; second engineer, \$150 a month, for season of not less than 10 months.

All other passenger ferry steamboats requiring second-class engineer: chief engineer, \$150 a month; minimum season not to be less than \$800.

All passenger ferry steamboats requiring third-class engineer: chief engineer, \$125 a month.

### Tug Steamboats.

Class 1.—All tug steamboats requiring second-class engineer: chief engineer, \$150 a month; second engineer, \$125 a month.

Class 2.—All tug steamboats from 75 n.h.p. to 50 n.h.p.: chief engineer, \$135 a month; second engineer, \$110 a month.

Class 3.—All tug steamboats from 50 n.h.p. to 25 n.h.p. and all tugs over 15 n.h.p.: chief engineer, \$130 a month; second engineer, \$100 a month.

Class 4.—All tug steamboats under 25 n.h.p. and not embraced in class 3: chief engineer, \$120 a month; second engineer, \$95 a month.

In addition to the foregoing, all engineers of tug steamboats operating from Fort William and Port Arthur harbors shall be paid 10 per cent. over the rates in the above four classes.

Registration of Masters, Mates and Engineers.—The order in council requiring the registration of masters, mates and engineers, was given in full in our last issue. At a recent meeting of the National Association of Marine Engineers of Canada, indignation is said to have been expressed as to the order itself, and especially to the clause which requires them to notify any change in the nature of their employment. A protest is stated to have been sent to the Minister of Marine, with a request for an explanation of the objects of the registration.

The Ulster Steamship Co.'s report for the year Jan. 31, shows a balance to the credit of profit and loss account of £55,336 7s 2d. after paying income tax and making allowances for depreciation and excess profits tax. A dividend has been declared free of income tax for the year, of 15%, leaving £16,705 13s 6d to be carried forward to this year's accounts. The report states that the company's vessels (Head Line) are under British Government requisition, which naturally interferes with the earnings and the sailings between Ireland and Canada.



## General Shipbuilding Notes Throughout Canada.

**British-American Shipbuilding & Engineering Co., Vancouver, B.C.**—In connection with the site the company is negotiating for on the old Kitsilano Reserve, plans are to be furnished to the Vancouver Harbor Commission, showing what will have to be done in the way of improvements to place the 300 ft. west of the reserve in a position to commence operations. It was originally proposed to take a site on the eastern portion, but the commission claims that it might interfere with future development at that point. Reports state that the company may abandon negotiations, so far as Vancouver is concerned, and some efforts are being made to have a site selected at Nanaimo. S. Mathieson, who is stated to be one of the heads of the company, is reported to have said that contracts for the construction of 20 wooden steamships have been signed, but that he was not at liberty to mention the name of the party ordering, that the company's plans provided for the immediate laying of 8 keels, and to employ from 600 to 800 men, the completion of the present contracts taking about 2½ years; that the type of vessel to be built, would be quite different from those being built for the British Government under orders from the Imperial Munitions Board, and would be of 3,800 tons deadweight capacity, 280 ft. long, 46 ft. wide, 26.6 ft. deep, capable of 10 knots an hour fully loaded; that they would be of the single deck type with triple expansion, reciprocating engines,

visited Crofton recently, to inspect proposed sites for the location of a shipbuilding plant there.

**Davie Shipbuilding & Repairing Co., Lauzon, Que.**, has filed a description and plan for a proposed wharf and foreshore extension on the shore of the River St. Lawrence on the front of its property at Lauzon, Que.

**The Dominion Bridge Co., Ltd.**, has a contract from the American International Shipbuilding Corporation, for the fabrication of keels, skin and floor plates, and floor girders, for the double bottom of 50 ships of 7,500 tons, and for 35 ships of 8,000 tons, which are being assembled at Hog Island, Pa., for the Emergency Fleet Corporation, United States Shipping Board. The keels, plates and the majority of the floor girders are being fabricated at Lachine and some of the floor girders with vertical frames are being fabricated at Toronto.

**The Dominion Government Shipyard at Sorel, Que.**, has for some months been building steam trawlers and wooden drifters, under orders from the Naval Service Department, and has not had any other vessels under construction.

**Collingwood Shipbuilding Co., Collingwood, Ont.**—The fifth of a number of number of trawlers under construction for the Naval Service Department was launched at Collingwood, Mar. 23. The vessel will be complete and ready to leave for the coast on the reopening of naviga-

ably all of the drifters will be completed by the opening of navigation.

**New Brunswick Shipbuilding.**—A St. John, N.B., correspondent writes:—Although the construction of standardized steamships under contract with the Imperial Munitions Board, now in progress in St. John, is New Brunswick's largest contribution so far towards replacing the tonnage sunk by German submarines, this is only a part of the province's effort to meet the shipping shortage. Up and down the coast, in some places in ancient shipyards whose original purpose had almost faded from the memory of the present generation, vessels of smaller size, but of undoubted usefulness, are being built.

Nowhere is this revival of a once flourishing industry better illustrated than in the county of Albert, where wooden ship building again is engaging the activities of the people. A century ago these shipyards were turning out staunch craft, and as ambition grew with the increasing skill of the builders, larger vessels were undertaken and clipper ships which sailed the seven seas were launched from the yards at the head of the Bay of Fundy. So soundly were they built, of such seasoned timbers and of such finished workmanship, that few of them outlived their usefulness in the ordinary course of their careers, and disaster alone seemed capable of ending their days. The frame of one of them, stranded on the Shepody marshes, still holds together, and stands as a monument to the builders of other days.

It is 46 years since the last vessel was

Vessels Built in Canada and Registered During 1917.

	WOOD										METAL						TOTALS		
	Sailing Tonnage		No.	Steam Tonnage		No.	Gas Tonnage		No.	Steam Tonnage		No.	Gas Tonnage		No.	Tonnage			
	No.			Gross	Net		Gross	Net		Gross	Net		Gross	Net		Gross	Net	Gross	Net
		Gross	Net		Gross	Net		Gross	Net		Gross	Net		Gross	Net		Gross	Net	
Nova Scotia .....	57	15250	12887	4	986	559	24	588	524	1	1422	810				86	18246	14780	
New Brunswick .....	22	1140	1140				1	25	16							23	1165	1156	
Quebec .....	13	1928	1848	8	698	317	9	251	173	2	7760	5720				32	10637	8058	
Ontario .....	1	67	67	13	973	543	2	29	19	3	5403	3302				21	6507	3949	
Manitoba .....				2	1211	864	2	26	17				35	18		4	1237	881	
British Columbia.....	12	5372	5238				65	15903	12214							77	21275	17452	
Total .....	105	23757	21180	27	3863	2283	103	16822	12963	6	14585	9832	2	35	18	243	59067	46276	

with Scotch boilers and forced draft. It was at first reported that the vessels were ordered direct from England by the British Government, but, as mentioned in our last issue, no confirmation of this was obtainable. It is, however, said that they are not for the British Government.

**Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.**, is reported to have an order for the construction of two five masted schooners of a similar type to those built by the company for Canada West Coast Navigation Co., but larger. The report states, "These ships will be of the windjammer class and consequently will rely solely on sails for driving power."

**Canadian Car & Foundry Co.**—With reference to the information respecting the company's shipbuilding plant at Fort William, Ont., given in our last issue, we are officially advised that a contract has been placed with the Dominion Bridge Co. for all the steel work in connection with the building to be erected to complete the shipbuilding facilities. This building will be 200 x 240 ft., divided into six aisles, each 200 x 40 ft., and each served by an overhead travelling crane. This is the only building to be erected at present, and it will be of steel frame construction. A contract has been awarded to E. G. Penniman & Co., Fort William, for building the piers for the plant, and also for certain piling work.

**Crofton, B.C.**—Representatives of Norwegian interests are reported to have

launched in Albert, and the fate of this craft was symbolic of the industry of which it was the last product. Old timers still tell the story of the launching. It was after midnight of an October night, the time being so fixed to take fullest advantage of the flood tides. A full moon made the scene almost as bright as day, and hundreds gathered to watch the vessel take to the water. When the finishing touches were completed, she sailed away, laden with high hopes, in addition to her cargo of sweet smelling spruce. She never returned, and of her end there is no record. After a successful run to the West Indies, she returned to New York, and thence set sail for Caledonia, Cape Breton. Outward bound was the last report and then the curtain fell on her career and on that act of the history of shipbuilding in Albert county.

**International Shipbuilding Corporation, Newcastle, N.B.**—The keel of the company's first vessel was laid at its yards on the Miramichi River, towards the end of February. The vessel will be of the following dimensions:—length over all 168 ft., length over keel 155 ft., beam 37 ft., depth of hold 13 ft.; tonnage, gross 575 tons. She will be a four masted sailing ship, with oil engines for auxiliary power, and will be built of native woods with a finishing of Douglas fir. F. H. McNaught, formerly Manager, Maritime Foundry, Chatham, N.B., is Manager of the company, I. Mashion is Superintendent, and A. S. Morash, Lunenburg, N.S., is master shipbuilder. This is said to be the first ship of over 500 tons to be built at Newcastle, for 50 years.

**The Kingston Shipbuilding Co., Kingston, Ont.**, has another steam trawler for the Naval Service Department ready for launching as soon as the ice clears away, and has also several others under construction.

**Naval Service Vessels.**—As previously stated in Canadian Railway and Marine World, the Naval Service placed orders last year for 12 "steel fishery protection vessels," 60 steel trawlers and 100 wooden drifters to be built at various points in Quebec and Ontario. The 12 "fishery protection vessels" are practically all built. About 30 of the trawlers and prob-

ably all of the drifters will be completed by the opening of navigation.

**The Sandwich, Ont., town council**, it is announced, will petition the Dominion Government to aid in establishing a shipbuilding yard there. It is stated that local financiers would help in building a plant, provided the Government will guarantee orders for merchant ships for service between Canada and Great Britain. It is also stated that water front property between Hill and Brock Sts. has been leased for the purpose.

**The Standard Shipbuilding Co., Vancouver, B.C.**, is reported to have closed contracts with Sir Joseph Maclay, of the British Ministry of Shipping, for the construction of 10 composite steamships.



These vessels, it is said, are to be 281 ft. long, 48 ft. beam and 27 ft. deep, with a speed of 10 knots when fully loaded, and with a deadweight capacity of 3,500 tons. The company is said to have secured a site covering 2,200 ft. of frontage on the Fraser River, near the junction with the Stave River at Ruskin, B.C., and that there is a sawmill, machine shop and smithy already in operation there. Designs for the vessels are said to have been approved by the British authorities, and a representative of the company is said to be on his way to London with final plans. P. J. Donohoe, naval architect, who drew the plans, and who is announced to have been appointed Superintendent of the yards, is reported to have stated in an interview, that the vessels will have reinforced steel keelsons, reinforced steel knees, and other improvements which will make them more seaworthy, and give them six years more life, than those of all wood, and that by the method of construction to be adopted, there will be 80 tons more deadweight capacity on a 250 ft. keel, than in the present type of wooden vessels.

**Sturgeon Cove, N.B.**—It is reported that a company at St. John, N.B., already interested in shipbuilding, is negotiating for the purchase of the Sturgeon Cove Lumber Co.'s plant, with the intention of erecting a shipbuilding plant on l'Etang River there, chiefly for the building of wooden steam trawlers.

**The Taylor Engineering Co., Ltd., Vancouver, B.C.**, is reported to be building a number of small vessels to the value of about \$300,000.

**Three Rivers Shipyards, Ltd., Three Rivers, Que.**, the incorporation of which was announced in a previous issue, is stated to be building a 2' story machine and pattern shop, 75 x 175 ft., and two 250 ft. slips on pile foundations, at the 5 acre site which it has acquired on the western side of Three Rivers harbor. The company has a contract from the Imperial Munitions Board for 2 wooden steamships, these appearing in our list of vessels under construction in Canada for the British Government, under the name of T. M. Kirkwood, Toronto, who is President of the company.

**The Vancouver Shipyards & Engineering Works, Vancouver, B.C.**, is reported to have established a shipbuilding yard on Burrard Inlet, and to be prepared to build ships for sale, instead of taking general contracts to build.

**Victoria Machinery Depot, Victoria, B.C.**—This company is stated to be in a position to commence the construction of steel steamships at once, but is reported to have made complaint that its facilities have been ignored by responsible officials of the Canadian Government.

**The Westport Shipbuilding Co.** has completed the establishment of a shipbuilding plant at White's Cove, Digby County, N.S., and is laying the keel of a three masted schooner. H. Boudreau is master shipbuilder.

**Wooden Shipbuilding.**—The Minister of Marine is reported to have announced recently, that on the completion of construction of the six wooden steamships, the order for which was recently placed in Quebec, Que., the ordering of wooden steamships by the Dominion Government would be discontinued.

**Yarrows, Ltd., Victoria, B.C.**, has completed the fourth shallow draft, stern wheel steamboat hull, and it is being dismantled and packed for shipment to the "Far East," by the first available steamship. The company has made a specialty

of this type of vessel for several years, and numbers of them are in use in shallow waters in various parts of the British Empire. The conditions under which warfare is now being waged, make it necessary that vessels of this type be used in certain waters. The hulls are being built at Victoria and the machinery by the parent concern at Glasgow, Scotland.

### Atlantic and Pacific Ocean Marine.

The British s.s. *Turret Crown*, formerly well known on the Great Lakes, was reported during March, to be adrift off the Atlantic coast. A wrecking tug was sent to her assistance, but was unable to locate her.

A Russian steamship has been towed into Halifax, N.S., by an oil tanker, she having been found in a disabled condition, having lost her propeller, some distance south of Sable Island. She is now reported to have been taken over by the naval authorities, and the Russian flag replaced by the British.

### Maritime Provinces and Newfoundland.

An order in council has been passed establishing a permanent harbor head line at Lunenburg, N.S., beyond which line, wharves, piers, breakwaters and similar works shall not in future be built.

The Dominion Coal Co.'s s.s. *Batiscan*, bound from Sydney, N.S., is reported to have been lost with all hands, during a severe storm about Mar. 10. It is reported that she may have struck on the Ganett Ledges. A considerable amount of wreckage of the vessel has been washed ashore near Yarmouth.

### Ontario and the Great Lakes.

The International Transit Co.'s s.s. *Algomah* resumed the ferry service across the St. Mary River at Sault Ste. Marie, Mar. 22.

Navigation for passenger vessels reopened Mar. 25, between Detroit and Cleveland, by the Detroit and Cleveland Navigation Co., and it was announced that the service between Cleveland and Buffalo would be commenced about Apr. 16.

The Canadian Stewart Co. was given judgment at Toronto, Mar. 18, for \$208,000, against the I. H. Hodge Co., Syracuse, N.Y., in connection with piling work done under a sub contract in the Toronto harbor. For the plaintiffs, it was stated that, through faulty work, the piling was not passed by the government engineers, and had to be done over again.

A deputation representing municipalities along the Lake Erie & Northern Ry., waited on the Dominion Government, Mar. 20, to urge the improvement of the harbor at Port Dover. It was shown that these municipalities import about 270,000 tons of coal a year, and they claim that this can be handled more expeditiously at Port Dover by car ferry, provided facilities are provided.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for February, as follows: Superior, 601.71; Michigan and Huron, 580.82; St. Clair, 574.54; Erie, 571.67; Ontario, 245.98. Compared with the average February levels for the past ten years, Superior was 0.07 ft. below; Michigan and Huron, 0.98 ft. above; Erie, 0.09 ft. above, and Ontario, 0.47 ft. above.

The Toronto Ferry Co.'s ferry steam-

boats *Island Queen* and *Kathleen* were destroyed by fire at their winter berths at Hanlan's Point, Toronto, Mar. 12. The *Island Queen* was built at Toronto in 1905, and was screw driven by engine of 16 n. h.p. Her dimensions were: length 97.8 ft., breadth 20.3 ft., depth 5.4 ft.; tonnage, 129 gross, 88 register. The s.s. *Kathleen* was built at Toronto in 1886 and was screw driven by engine of 35 n.h.p. Her dimensions were: length 84 ft., breadth 18 ft., depth 5.5 ft.; tonnage, 119 gross, 72 register.

Canada Steamship Lines' s.s. *Aberdeen* was burned at her winter quarters, Picton, Ont., recently. She had been withdrawn from the water for repairs, but the work had not been commenced. During last year, she was operated on the lower St. Lawrence. She was built at Picton, Ont., in 1894, and was screw driven by engine of 30 n.h.p. Her dimensions were: length 99.6 ft., breadth 22 ft., depth 8.7 ft.; tonnage, 142 gross, 87 register. She was taken over with other vessels by Canada Steamship Lines, Ltd., on the absorption of the Ontario & Quebec Navigation Co.

H. B. Smith, who in former years operated the s.s. *Olcott* on the Windsor, Wallaceburg and Detroit service, from Windsor, Ont., is reported to be in negotiation with Canada Steamship Lines, Ltd., for the purchase of the s.s. *Thousand Islander* for that service. The *Thousand Islander* is registered in the U.S., and was built at Toledo, Ohio, in 1912. She has a steel hull, steel boiler house, 3 water tight and 2 non water tight bulkheads, electric light, and is equipped with vertical compound engines with cylinders 15 and 30 in. diam. by 20 in. stroke, 700 i.h.p. at 210 r.p.m., and supplied with steam by two Scotch boilers, 12½ x 10½ ft., under forced draft at 150 lb. Her dimensions are: length 164 ft., breadth 32 ft., depth 9½ ft.; tonnage, 355 gross, 241 register.

The Marine Department has issued a notice to mariners that target practice on land and from the air over Lake Ontario by the Royal Flying Corps will begin in the spring at the Beamsville machine gun ranges, about 8 miles west of Port Dalhousie lighthouse. The surface of the lake containing an area of about six square miles in front of part of the first concession of Clinton Tp., forms the danger area for target practice for machine guns and other firearms. Flagstuffs have been erected at the extreme east and west boundaries of the danger zone and red flags will be hoisted and kept flying when firing is taking place. Spar buoys have been placed to mark the boundaries, and these are painted white with a red danger sign surmounting. Penalties are provided for any person destroying or tampering with the marks provided.

The Marine Service Transportation Co. of New York, has, under a writ of attachment, seized a large quantity of war supplies, said to be worth \$20,000,000, and stated to be the property of the former Emperor of Russia, on a claim for \$2,615,762 for breach of contract regarding the shipment of supplies to Russia.

**A Halifax Explosion Aftermath.**—The owners of the steamships *Imo* and *Mont Blanc* have each entered an action against the other for \$2,000,000 for damages sustained in the Halifax explosion. The case is before the Supreme Court at Halifax, N.S.

The Australian Government is reported to have completed a scheme which frees all large ocean going ships for the allies' use. A pool, which will control 120 ships engaged in coastal trade, will be formed.



## British Columbia and Pacific Coast.

The Grand Trunk Pacific Coast Steamship Co. has purchased the barges C.C. No. 7 and C.C. No. 9, from U.S. owners, and has changed the names of them to G.T.P. No. 1 and G.T.P. No. 2.

The Minister of Public Works is reported to have stated that an appropriation of \$5,000 is assured for this year, to allow of the commencement of the erection of a shed on pier 3 at Ogden Point, Victoria.

The Victoria Whaling Co. is reported to have purchased the s.s. Elihu Thompson from the Pacific Cold Storage Co., for operation in connection with its plant at Aleutian Islands. The vessel has large cold storage capacity, but will be used chiefly for towing.

The Union Steamship Co. of British Columbia's s.s. Chasina, formerly Selma, it is reported, is to undergo considerable repairs and alterations before being placed on the Powell River run this spring. The freight carrying capacity is to be increased, and the deck houses are to be reconstructed.

Canada West Coast Navigation Co. is now operating 9 of the 12 motor ships which it had built at Vancouver and Victoria recently. Three have been sold to French interests, viz.: Esquimalt, Malahat and Beatrice Castle. The last mentioned has been renamed Stasia. Reports have been current that the entire fleet had been sold to French interests, but this has been denied by the management.

With reference to the opening of the bridge across False Creek at Kitsilano, Vancouver, for the passage of steamships under construction at J. Coughlan & Sons' yards, it is reported that as a result of a conference the C.P.R. has agreed to open the span, and to submit the matter as to the responsibility for the cost, to the Supreme Court of Canada. The bridge is owned by the C.P.R. and leased to the British Columbia Electric Ry.

The B. C. Government is reported to have purchased the C.P.R. s.s. Beaver for the ferry service between Ladner and Woodward's Landing. It is stated that the vessel, which has been out of service for some time, will be thoroughly overhauled and repaired at a cost of about \$5,000. The s.s. Beaver was built at Victoria in 1898, and is equipped with engine of 13 n.h.p., driving a paddle wheel. Her dimensions are: Length 140 ft., breadth 28 ft., depth 5.1 ft.; tonnage, 545 gross, 344 register. The C.P.R. operated the vessel for several years between New Westminster and Chilliwack.

C. T. White & Son, Ltd., Sussex, N.B.—Two schooners with auxiliary power are under construction, and it is expected that the first will be launched in April, and the second in June. They are 143 ft. long, 34 ft. wide and 13 ft. dep, having a draft of about 16½ ft. They will each be about 480 tons register, carrying about 900 tons, and will be fitted with three masts, fully rigged. The auxiliary power will consist of 12 h.p. bull dog engines, with connections for hoisting sails, anchors and cargo, and they will be equipped with patent stockless anchors and full size chains as required by Bureau Veritas.

British Columbia Export Co., Ltd., has been incorporated under the British Columbia Companies Act, with \$24,000 capital and office at Vancouver, to carry on a general merchant and shipping business, and in connection therewith to own and operate steam and other vessels, and carry on a general shipowning business.

## Ships Under Construction in Canada for British Government.

The particulars of steamships ordered by the Imperial Munitions Board for the British Government, with the names and addresses of builders, number of vessels, individual and total tonnage, which were published exclusively in Canadian Railway and Marine World for March, have attracted considerable attention, and we have been congratulated from many quarters on securing the information and presenting it in such convenient form.

Speaking in the House of Commons, Mar. 19, in the debate on the address in reply to the speech from the throne, Sir Robert Borden gave considerable information in regard to shipbuilding, and confirmed the figures published by Canadian Railway and Marine World in March, as to orders placed by the Imperial Munitions Board as follows: 43 steel steamships, 211,300 tons dead weight, approximate cost \$40,000,000; 46 wooden steamships, 128,800 tons d.w., approximate cost \$24,500,000; total, 89 steamships, 340,100 tons dead weight, approximate cost \$64,500,000.

The figures given above show that the 43 steel steamships will cost approximately \$189.31 a ton d.w., and that 46 wooden steamships will cost approximately \$191.42 a ton, though the latter figures may be increased, as at present they are only estimated.

All the orders for steel steamships placed by the Imperial Munitions Board have been at a price per ton d.w. for fully completed vessels. In the case of the wooden steamships, the hulls in Eastern Canada are being built for lump sums agreed on with the builders. For those ordered in British Columbia, the hulls are being built on a cost basis, plus \$16,000 a hull, the board supplying boilers and machinery.

At present, at least, it is not the intention for the Imperial Munitions Board to order any more steel or wooden steamships in Canada, for the British Government, and as the berths in which the vessels now under order are being built, become vacant, they will be taken for cargo vessels to be built for the Dominion Government.

**Launchings of Steamships.**—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government and which have been launched up to date, with dates of launchings:—

Steel Steamships.			
Date.	Name	Builder.	Tonnage.
May 18, 1917—	War Dog,	Wallace Ship-	
	yards, Ltd.		4,500
July 9, 1917—	War Wasp,	Nova Scotia Steel	
	& Coal Co.		1,800
Aug. 4, 1917—	War Fish,	Port Arthur Ship-	
	building Co.		4,300
Nov. 3, 1917—	War Dance,	Port Arthur	
	Shipbuilding Co.		3,400
			14,000

The first three of the vessels above mentioned have sailed; the fourth is being held during the winter at Sorel, Que.

Wooden Steamships.			
Date.	Name	Builder.	Tonnage.
Dec. 28, 1917—	War Songhee,	Foundation	
	Co., Ltd.		2,800
Jan. 4, 1918—	War Nootka,	Western Can-	
	ada Shipyards, Ltd.		2,800
Jan. 24, 1918—	War Yukon,	Cameron-Genoa	
	Mills Shipbuilders, Ltd.		2,800
Feb. 16, 1918—	War Puget,	Wm. Lyall	
	Shipbuilding Co.		2,800
March 6, 1918—	War Selkirk,	Western Can-	
	ada Shipyards, Ltd.		2,800
			14,000

Since the launching of the first wooden steamship approximate calculations have been made, from the launching weights, showing that the deadweight tonnage of each wooden ship will be approximately 2,080 tons.

## A Silly Attack on the Shipbuilding Programme.

The Toronto Evening Telegram, in one of its rabid attacks on the Union Government, says among other things:—

"Union Government shipbuilding policy will be worked out as a pro-Montreal, anti-Ontario policy that will give as much as possible to Montreal and eastern interests and do as little as possible for Ontario and western interests. . . . Shipbuilding policies that will place contracts east of the Ottawa River, or with the allies of interests east of the Ottawa River, will be worked out without let or hindrance from Sir Robert Borden."

There is no foundation whatever for the charges quoted. Up to date the Marine Department has let contracts for 4 steamships, 2 at Montreal, 1 at Collingwood, Ont., and 1 at Vancouver, B.C. It has under consideration the placing of contracts for all berths that will be available at steel shipbuilding plants throughout Canada this year and which have been reported by the various companies as follows:—Province of Quebec, 7; Ontario, 20; British Columbia, 4.

**Ice Conditions on the Great Lakes.**—Reports as to ice conditions on the Great Lakes during March, indicated that there was about the same amount of ice in Lakes Superior and Michigan, less in Lakes Huron and Erie, and more in Lake Ontario, than at the same period in 1917. The warmer weather in the middle of the month had some effect and ice was reported to be moving out. The average thickness in Whitefish Bay was 30 in. and in St. Mary's River, 26 in. Ice was also moving out in Lake Huron, and the St. Clair River was open to St. Clair. Little ice was reported on Lake Erie at the western end, but was heavy and extensive in the east. The western portion of Lake Ontario was reported clear, but heavy and extensive fields existed from Sodus Point, N.Y., to the outlet of the lake. The ice jam at the mouth of the St. Clair River, broke Mar. 19.

**The s.s. Empress of Ireland Case.**—The Supreme Court's judgment on the appeal of the C.P.R. as to the disposition of the proceeds of the sale of the s.s. Storstad, which was responsible for the loss of the C.P.R. s.s. Empress of Ireland in the Gulf of St. Lawrence, May 29, 1914, provides that the proceeds be divided into two parts of seven and eight fifteenths respectively, the first to be divided amongst the claims for loss of life, and the second pro rata among all claimants. This is a variation of the Admiralty Court's decision that the distribution be made under the law of the United Kingdom.

**Halifax Harbor Regulations.**—An order in council was passed, Mar. 7, rescinding rule 6 of the Rules and Regulations for the Port of Halifax, dated Oct. 23, 1906, and the following has been substituted:—"No steamer entering or leaving Halifax harbor, those of His Majesty and the Government of Canada excepted, shall, while inside of George Island, or in the North West Arm, proceed at a greater speed than 6 knots an hour, under a penalty of \$100, to be paid by the owner, master or agent of the vessel violating the law."

**The U.S. Emergency Fleet Corporation** is reported to have placed a large order with Yarrows, Ltd., Victoria, B.C., for high pressure cylinders for installing in steel steamships now under construction in U.S. yards.

**Manitoba Transport Co., Ltd.,** has been incorporated under the Manitoba Companies Act, with \$100,000 capital and office at Winnipeg, to carry on the business of shipowners, carriers by land and water, shipbuilders, forwarding agents, etc.



## Pilotage at the Port of Halifax, N.S.

As stated in Canadian Railway and Marine World for March, the enquiry into the operations of the Halifax Pilotage Commission concluded Feb. 14. The commission consisted of Thos. Robb, Manager, Shipping Federation of Canada, Chairman; Capt. J. N. Bales, Deputy Port Warden of Montreal; and Capt. J. W. Harrison, Marine Superintendent, Furness, Withy & Co., Halifax, N.S. Considerable evidence was given by port officials, and by representatives of shipping companies concerned, and a report has been made to the Minister of Marine, the main points of which are summarized as follows:—

There was very special reason for investigation in respect of the Halifax Pilotage District, arising from the terrible calamity which had so recently befallen Halifax, and the need there, of a certain reformation, reorganization and improvement was obviously apparent, in view of a succession of serious accidents to vessels in the port, a number of the vessels being in charge of pilots. The records of the pilotage office have been poorly kept, books were audited so far as the total receipts and expenditures were concerned, but details of the actual pilotage earned were only shown summarized. Pilotage collected from vessels where no pilot was supplied, and for movements in the harbor, could not be given in detail, and it was only when the Royal Commission put in an auditor to check the accounts that the Secretary produced monthly statements, which he said did not belong to the pilotage commission, but were records of the division of money and dividends to pilots, expenses of the pilot boats and dividends to the owners of them. These statements contained entries of sums paid to masters of vessels as gratuities, and said to have been paid for the signing of pilotage bills on vessels not paying full pilotage, or not having a pilot, in order to obtain clearance at customs. The Canada Shipping Act forbids customs clearance to any ship liable to pilotage dues, and the evidence showed that it was presumed that the vessels were so liable, all vessels being required to have a certificate from the pilotage authority. The Secretary-Treasurer of the Pilotage Commission has merely clerical duties, and is assisted by a boy who answers the telephone and runs messages. This boy appears to have been acting as an intermediary between the pilotage office and the naval authorities, by the telephone, and has been trusted with reporting the inward and outward movements of vessels to the dockyard, of which no office record has been kept. It has not been possible to get any detailed statement from the Secretary as to the gross earnings of the pilots, certain figures given in evidence being misleading, but the Secretary stated that he considered the gross earnings of each pilot, for 1917, were about \$8,000. The earnings, as they appear in the return, do not include movements, and this appears to be a serious dereliction of duty on the Secretary's part, and it is strongly recommended that immediate steps be taken to have proper and intelligent returns made, giving the entire earnings. Attention is drawn to \$1,976.13 earned by Pilot Gorman, for movements in 1917. This consists chiefly of irregular charges on vessels bound directly to Bedford Basin from sea, or vice versa, and this, it is understood, has been discontinued, as a result of legal advice to the pilotage commission.

Special attention is drawn to the pilotage commission's laxity regarding apprentices. No record of the attendances of apprentices is kept, and their duties seem to have been those of members of the pilot schooners, and while these are in dock they have nothing to do. They never go on board steamships with the pilots, and therefore cannot gain the experience required to handle ocean steamers, and when questioned, some of them were found very deficient in general chart exercises, marks on lead line, etc., but they had a fairly good local knowledge of the soundings at the entrance to the harbor. The only examination for eyesight is when apprentices are entering the service, and is made by two of the commissioners. The total earnings are pooled, after deductions for management and superannuation fund. This system appears to be pernicious and to remove all incentive to individual ambition.

Intoxicating liquors were permitted on pilot schooners, and several instances were recorded of inebriety among pilots. While the pilotage commissioners have dismissed some of these recently, they do not appear to have been strict enough in this respect.

After the pilots have drawn their money, the Secretary prepares a statement dividing the earnings among the pilots, after deducting for schooner store supply, crews' and apprentices' wages, etc., the balance being divided into shares, 1½ shares being allotted to the owners of the pilot schooners. Included in this statement are certain gratuities paid to masters of vessels, stated to be for compensating the master for signing the voucher, to enable the Secretary to justify the collection of pilotage dues from the steamship agent. This is a very bad feature of the matter. No evidence having been submitted as to the unreasonableness or otherwise of the tariff, it is taken for granted that there are no complaints. The question of movements appears to cause a good deal of irritation, and it is recommended that sec. 462 of the Canada Shipping Act, be strictly applied, as this appears to be fair and reasonable, and defines when a pilot may leave a vessel which he has undertaken to pilot. From the evidence, and from other information obtained, it was gathered that there was a shortage of pilots, and as this required urgent attention, the Royal Commission, not having the power, asked the Pilotage Commissioners to appoint seven pilots from the list of applications from masters and mates.

Recommendations were made, as follows:—That the administration of the service by the present pilotage commission has been found unsatisfactory, and that legislation be enacted appointing the Minister of Marine as the Halifax pilotage authority; that a superintendent, with sea going experience and a clean record, be placed in full charge of the district to reorganize and administer its affairs, and be directly responsible to the Minister, such superintendent not to have been, at any time, a pilot of the district; that a qualified assistant be appointed, so that the office may be kept open day and night; that apprentices be indentured to the Minister, and that public notices be given when there are vacancies; that an eyesight test be made annually, the system adopted being the same as in vogue in the Quebec and Montreal districts, that is, an annual examination for sight and hearing by a medical officer and officer of the

Marine Department; that an oculist be appointed, for an immediate examination of eyes and hearing of all pilots and apprentices of the Halifax District; that a register of pilots be kept at the pilotage office, so that each pilot may be engaged in turn for outward pilots and on the pilot tender for inward pilots; that no pilot or apprentice be allowed to use intoxicating liquors, any infraction being punished by fine or suspension for a first offence and by dismissal for a second offence; that no such liquors be kept in the pilotage office or on board the pilot tender, an offender being punished by instant dismissal; that gratuities by pilots be prohibited and considered as an offence and dealt with accordingly; that no pilot be allowed to perform duties outside his own district; that all information in regard to changes in the aids to navigation, especially during the war, be through the Naval Service, and in ordinary times, through the Marine Department; that the present number of pilots be increased by seven, making 20 altogether, and that it be further increased not to exceed 25, nor to be less at any time, than 20; that a steam pilot tender be provided, and that in order to relieve the situation, masters of Canadian registered vessels trading regularly to the port be licensed by the pilotage authority, by amending sec. 487 of the Canada Shipping Act, and placing Canadian vessels in Canadian ports, on a par with U.S. vessels in U.S. ports. One or two minor matters, relating to the pooling of pilotage earnings, etc., are to be dealt with more fully in the final report, which will also cover the administration of pilotage affairs at St. John, N.B., and Sydney, N.S.

With regard to the recommendation that a steam pilot tender be provided, we are advised that negotiations for a suitable boat are proceeding. An order in council constituting the Minister of Marine as the pilotage authority for the pilotage district of Halifax, has been passed, as follows:—

Whereas the commission appointed to enquire into and report upon all matters connected with the pilotage system and administration at the port of Halifax has recommended that the Minister of Marine and Fisheries be appointed the pilotage authority for the pilotage district of Halifax in place of the Halifax Pilot Commissioners, and that many changes should be made in the pilotage regulations for the said district: Therefore the Governor-General in council, in view of these recommendations and the importance of making immediate provision for improved pilotage facilities for the large number of vessels that are arriving at and leaving the port of Halifax owing to the war, on the recommendation of the Minister of Marine and Fisheries, and under the provisions of the War Measures Act, 1914, makes the following regulations:

The Minister of Marine and Fisheries for the time being shall be the pilotage authority for the pilotage district of Halifax, and all powers and authority, heretofore vested in the Halifax Pilot Commissioners, are hereby vested in and transferred to him. All property, both real and personal, now vested in or under the control of the said commissioners, is hereby transferred to and vested in the Crown to be administered by the Minister of Marine and Fisheries.

The said minister, as such pilotage authority, in addition to the powers heretofore exercised by the pilotage authority



of the pilotage district of Halifax, shall have power to reorganize the pilotage system in the said district, to retire or dismiss any pilots or employees, at present employed, and to appoint such pilots, superintendents, officers and clerks as he may deem necessary for the proper administration of the said district, and to change and amend the pilotage regulations for the said district as he may deem necessary or desirable.

The Minister may defray all expenses in connected with the reorganization and administration of the said pilotage district out of pilotage funds in the said district.

These regulations shall continue in force during the continuance of the present war and for one year thereafter.

Capt. H. St. George Lindsay, a former Dominion Wreck Commissioner, and latterly General Superintendent, River St. Lawrence Pilotage, has been appointed Superintendent of Pilotage at Halifax, for the time being.

### Specifications of Deck Machinery for Standard Wooden Steamships for British Government.

Following are the specifications issued by the Imperial Munitions Board at Ottawa for deck machinery for standard wooden steamships being built in Canada for the British Government:—

The winches to be double cylinder reversing engines having cylinders 7 x 12 in. diameter by 12 in. stroke, fitted with double geared whipping and warping drums. Cylinders to be of hard, close grained cast iron, bolted to a foundation plate of substantial scantling; valves being flat valves and preferably the valve chest to be arranged with a cover in sloping direction in order to facilitate facing the valve seat. Pistons to be fitted with steel rams-bottom rings, piston rods and valve spindles to be of rolled brass or Muntz metal. Valve gears to be of the link motion reversing type, and eccentric to be of cast iron, eccentric straps of gun metal. The gear wheels to be of cast iron, of double helical form, or may be of steel with straight teeth, provided the teeth are machine cut. The main bearings are to be fitted with brass bushes and all other working parts fitted with adjustable brass bushes. The clutches are to be of cast steel, mounted on a squared shaft not on feathers. The winches are to be fitted with valves on both steam and exhaust, with the usual control valve. Reversing gear to have back balancing weights, the cylinders to be lagged and cleaded with sheet iron. All exposed working parts to be carefully guarded to the requirements of the British Factory Acts. This specification is intended to cover a winch of high class design and extra heavy construction, similar to that made by the best known British winch builders, of standard make. One pair of whipping and one pair of warping drums are to be fitted, of shape approved by board. Foot break is to be fitted.

Windlass to be of double cylinder, horizontal or vertical type, windlass fitted with double gypsies with comb lifters and breaks, to be of a size suitable for handling stud link cable 1 3/4 in. diameter and to the full requirements of Lloyd's Register of Shipping. All bearings are to be good extra surface and to be fitted with adjustable brass bushes. All working parts to be protected to the requirements of the factory acts. Devils, claws and stoppers to be fitted, as usual, of cast or wrought iron. Steam stop valve and ex-

haust valve to be fitted. Steering gear to be of steel of the straight machine cut type. This special case is intended to cover a high class steam windlass of a type supplied by certain English makers, and all parts are to be of extra strong construction to the approval of the board's technical adviser.

Steering gear to be fitted amidships and to consist of a double cylinder engine of approved design, fitted with slide valve motion and control valve of approved design, actuating through spare and worm gearing; a single drum will receive the chains from the steering gear aft; control valve to be operated either by rods and gear from the steering wheel on bridge or alternately if this be found impossible, by the tellemotor control gear. The hand steering gear to be arranged on the poop and arranged to operate steering should engine be out of action. Steering wheels to be of teakwood, brass fitted, or in the case of the tellemotor gear, may be a small brass wheel. All to be to the full requirements of Lloyd's Register of Shipping for the highest classification.

Ash winch to be fitted on casing secured to bulkhead, of a double cylinder variety, with ropes led to both ventilators; ash buckets to be controlled from the stoke held fore.

The first steamship to carry bulk grain from Vancouver, B.C., for Europe, without breaking bulk, was reported to have arrived at London, Eng., safely, Feb. 16. No particulars as to the condition of the cargo have been received, and considerable interest is felt as to this, as it has always been contended by some, that bulk grain could not be satisfactorily shipped by that route owing to the different temperatures encountered. The vessel carrying the cargo was the s.s. War Viceroy, built at Portland, Ore., for the British Government. She sailed from Vancouver, Dec. 2, 1917.



#### VESSEL FOR SALE.

Tenders addressed to the undersigned at Ottawa, and endorsed on the envelope "Tender for Dredge Galveston", will be received up to noon of the

Eight Day of April, 1918,

for the purchase of the steel twin screw suction and hopper dredge Galveston, now lying at Sorel, P.Q. Persons desiring to inspect the dredge should apply to the Superintendent of the Shipyard at Sorel.

Length, 223-0 x 39-0 x 15-6 depth of hold.  
Gross tonnage, 1,332.

Net tonnage, 838.

Draft loaded, 14-9 aft and 13-1 forward.

Dead weight, 1,800 tons.

Two suction pumps, Dutch type.

Working capacity, 1,350 cu. yds. in 45 minutes.

Hopper capacity, 1,500 cu. yds.

Engines, 15 x 24 x 39 x 34" stroke.

Propellers solid, 4 bladed 8' 4" dia. x 10' 0" pitch.

2 Scotch boilers 13' 9" dia. x 11' 0" long x 180 lbs. w. pressure.

Built in Germany in 1904.

The dredge will be sold as it now stands and no additional equipment or apparel will be supplied by the Department.

All offers must be for cash payment as soon as the tender is accepted, and the vessel must be removed immediately by the successful tenderer.

Each tender must be accompanied by an accepted cheque on a chartered Canadian bank, equal to five per cent. (5%) of the whole amount of the offer, which cheque will be forfeited if the successful tenderer declines to purchase the vessel at his tender price. Cheques accompanying unsuccessful tenders will be returned.

The highest or any tender not necessarily accepted.

Newspapers copying this advertisement without authority from the Department will not be paid for same.

ALEXANDER JOHNSTON,

Deputy Minister of Marine.

Department of Marine,

Ottawa, March 21, 1918.

### Mainly About Marine People.

C. Stanton, Assistant Deputy Minister of Marine, Ottawa, is spending a holiday in California.

Capt. John Andrew, an old time master of sailing craft on Lake Ontario, died at Oakville, Ont., recently, aged 73.

H. W. Cowan, director and Operating Manager, Canada Steamship Lines, Ltd., Montreal, has been spending a short time in California.

Miss Alice Ross, daughter of W. G. Ross, President, Montreal Harbor Commission, was married at Montreal, Mar. 19, to H. W. Soper, son of W. Y. Soper, Vice President, Ottawa Electric Ry.

W. I. Gear, Director, Steel Shipbuilding, and also of Wooden Shipbuilding in Eastern Canada, for the Imperial Munitions Board, Ottawa, visited a number of the Ontario shipbuilding yards during March.

J. W. Norcross, Vice President and Managing Director, and F. S. Isard, Director and Comptroller, Canada Steamship Lines, Ltd., have been spending a short time at White Sulphur Springs, Va.

Capt. Robert Fraser, for several years Marine Superintendent, Montreal Transportation Co., Kingston, Ont., died at Long Beach, California, Mar. 10, after a long illness. He retired from active service at the end of 1916 on account of his health. The funeral took place at Kingston.

Capt. J. W. Harrison, master of the s.s. Picton, has been presented by the British and Foreign Sailors Society, with a salver made of copper from Nelson's flag ship, suitably engraved, for his conduct in clearing his vessel from Halifax harbor at the time of the great explosion there in Dec., 1917.

Capt. C. D. A. Barber, at one time, Manager, Northern Transportation Co., Athabasca Landing, Alta., died at Duluth, Minn., Mar. 5. In the early stages of the war he enlisted with the 202nd Battalion, C.E.F., and went overseas. On his return, he was for some time in Edmonton, Alta., and about two months ago, went into business in Duluth.

William Andrews, who died at Collingwood, Ont., Mar. 12, aged 77, was one of the early wooden ship builders on the Canadian lakes. He first worked at the Andrews shipbuilding yards, established by his father at Port Dalhousie, Ont., and on the acquisition of the property for the construction of the Welland Canal, he moved to Port Robinson and subsequently to Collingwood, continuing shipbuilding with his brother, S. D. Andrews, who was one of the founders of the yards now owned by the Collingwood Shipbuilding Co., and who is now Inspector of Hulls, under the Marine Department, at Collingwood.

Farrar Transportation Co., Ltd.—The report for 1917, presented at the annual meeting at Toronto recently, was considered very satisfactory, a substantial dividend being paid. The officers for this year are:—President, T. I. Thomson, Owen Sound, Ont.; Vice President, W. E. Allen, Toronto; Managing Director, G. E. Fair, Toronto.

Bay of Fundy Tides.—The Naval Service Department has issued, in pamphlet form, "Tides at the Head of the Bay of Fundy," from observations during Admiralty chart surveys, Noel Bay, 1859; tide levels for the Baie Verte Canal, Cumberland Basin, 1870; and measurements by the tidal survey in 1916, in Cobequid Bay, where the highest tides occur.



# Canada Steamship Lines, Ltd., Annual Report and Meeting.

A brief summary of the report for the calendar year 1917 appeared in Canadian Railway and Marine World for March. Following are fuller particulars, as presented at the annual meeting in Montreal Mar. 5. The company had a satisfactory year. While the gross earnings are higher than in 1916, the net earnings are slightly lower. This is accounted for by the enormous increase in the cost of everything that enters into the operation of such an undertaking. The vessel tonnage owned by the company is greater than it was in 1916, despite the losses that have occurred. Directors and management are convinced that the company has a promising field for development and expansion on the high seas. During the year a vacancy occurred in the directorate, through the resignation of R. M. Wolvin, which was filled by the appointment of H. W. Cowan, Operating Manager, to the board. The deferred dividends on the preference shares have been paid, and it has been decided that the quarterly payments of these dividends will be resumed. All the properties have been thoroughly maintained, and the fleet is in a better state of efficiency than it was at any other time.

## Balance Sheet.

Assets.	
Fixed assets—	
Vessels as at Dec. 31, 1916 .....	\$18,797,920.30
Net additions for year, being excess of additions to fleet over vessels lost and sold .....	1,932,944.04
	<u>\$20,730,864.34</u>
Real estate, buildings, docks and wharves, as at Dec. 31, 1916 .....	\$5,331,114.53
Net additions for year. ....	180,568.40
	<u>5,551,682.93</u>
Other fixed assets at Dec. 31, 1916 .....	\$ 610,434.42
Net additions for year. ....	115,325.29
	<u>725,759.71</u>
	<u>\$26,968,306.98</u>
Less depreciation reserve .....	2,562,951.56
	<u>\$24,405,355.42</u>
Current and workings assets—	
Cash in banks and on hand .....	\$ 231,730.98
Accounts receivable, less reserve for doubtful accounts .....	1,606,820.59
Adjusted losses due by underwriters .....	712,682.53
Insurance and other claims, estimated amount recoverable ..	924,325.94
Interest receivable accrued .....	5,639.91
Inventories of stores and supplies .....	583,808.06
	<u>4,065,008.01</u>
Charges deferred to future operations—	
Insurance unexpired .. \$	732,056.09
Repairs, etc., applicable to subsequent seasons ..	305,471.67
Miscellaneous .....	27,328.20
	<u>1,064,855.96</u>
Investments at cost .....	220,792.70
Funds deposited with trustees for mortgage bonds and debenture stock .....	244,107.55
Organization expenses, less proportion written off .....	86,818.00
	<u>\$30,086,937.64</u>
Leases, contracts and goodwill .....	8,589,646.79
	<u>\$38,676,584.43</u>
Liabilities.	
Capital stock—	
7% cumulative preference stock...	\$12,500,000.00
Common stock .....	12,000,000.00
	<u>\$24,500,000.00</u>
Funded debt—	
5% debenture stock ..	\$7,120,506.66
Less deposited as security for loan \$598,400.00	
Amount retired by operation of sinking fund. ....	440,766.46
	<u>1,039,166.46</u>
	<u>\$6,081,340.20</u>

First mortgage bonds. ....	1,315,026.69
Loan secured by debentures stock and investments .....	500,000.00
	<u>7,896,366.89</u>
Current and accrued liabilities—	
Accounts payable .....	\$2,538,985.28
Bond and other interest accrued .....	123,160.03
Business profits war tax .....	704,545.58
Dividend declared (payable Jan. 2, 1918) ..	437,500.00
	<u>3,804,190.89</u>
Reserves—	
For freight and other claims .....	\$ 10,000.00
For premium on redemption of Richelieu & Ontario Navigation Co. bonds .....	6,959.75
Surplus arising from sinking fund purchases of debenture stock ..	84,312.78
	<u>101,272.53</u>
Surplus .....	<u>2,374,754.12</u>
Contingent liabilities—	
On notes receivable under discount .....	\$ 22,610.89
On notes endorsed for allied company .....	120,000.00
	<u>\$142,610.89</u>
	<u>\$38,676,584.43</u>

## Operating Account.

Operating revenue—	
Vessels .....	\$12,887,256.23
Docks and wharves .....	183,772.27
Miscellaneous .....	290,393.74
	<u>\$13,361,422.24</u>
Other revenue .....	<u>173,393.70</u>
Total revenue .....	<u>\$13,533,815.94</u>
Expenses .....	<u>9,509,951.47</u>
Net earnings .....	<u>\$ 4,023,864.47</u>
From which deduct—	
Interest on mortgage bonds .....	\$ 90,729.86
Interest on debenture stock .....	301,575.03
Other interest .....	5,721.23
Special bonus to employees .....	35,294.53
Reserve for depreciation .....	1,061,563.37
Reserve for doubtful debts and claims .....	25,579.29
Directors' fees .....	25,000.00
Reserve for business profits war tax .....	300,000.00
	<u>1,845,46.31</u>
Profit for year .....	<u>\$ 2,178,401.16</u>
Surplus Account.	
Balance at Dec. 31, 1916 .....	\$ 1,848,225.27
Profit for year 1917 ..	\$2,178,401.16
Net profit on sales, etc., of fixed assets .....	941,879.95
	<u>3,120,281.11</u>
	<u>\$4,968,506.38</u>
Proportion of organization expenses charged off .....	\$ 86,820.41
Balance of discount on debenture stock charged off .....	27,765.19
	<u>\$ 114,585.60</u>
Dividends on preferred stock—	
12.83 1/3%, being arrears to Dec. 31, 1916 .....	\$1,604,166.66
7% for year ended Dec. 31, 1917 .....	875,000.00
	<u>2,479,166.66</u>
	<u>2,593,752.26</u>
Surplus .....	<u>\$ 2,374,754.12</u>

Jas. Carruthers, President, in moving the adoption of the report, referred to the company's improved financial position as disclosed by the annual statement, and said: "The company during the last three or four years had gone more extensively into the ocean traffic, and the directors believe there is a good field for development and expansion in this direction, more particularly owing to the fact that the Canadian Government has decided on a policy of building up a Canadian merchant marine. This undoubtedly will prove a great boon to the country and will indirectly help the company. Under the expert guidance and advice of the Vice President and Managing Director,

the directors have done some selling and buying of vessels during the year. They have a certain well defined policy in this connection. Their object is (and they have been successful so far) to establish the fleet on a more modern basis, to meet the changing conditions. Older and smaller vessels, gradually becoming obsolete and costly to operate, are being replaced by larger and newer ships, so that even during the war, but more particularly after the war is over, your fleet will be in a position to meet every requirement and every condition that may arise.

"Now, as to future prospects. There is no doubt that after peace is declared there will be new problems to face. It is generally conceded that the prosperity which flourishes in both the United States and Canada at present may wane. Work will not be so plentiful, the high wages that are now being paid will have to be cut down and a readjustment is bound to take place, so that such conditions as exist today must not be accepted as permanent and the uncertainty as to the future make it incumbent upon us to be both careful and conservative. Your directors believe, however, that the enormous losses in ocean tonnage suffered by all nations will take a long time to replace, even to an extent to partly meet the world wide demand. I feel warranted, therefore, in saying that in all probability present rates will continue until the available tonnage becomes sufficient to meet at least normal conditions. In saying this, I have times in the shipping trade will not return for years.

"We have every reason to expect a large increase in the acreage of grain in our Canadian Northwest this coming season. There is an enormous shortage of foodstuffs the world over and the knowledge that even if peace were proclaimed within six months, the urgent requirements would continue until the supply equalled the demand means that these high prices for all kinds of grain are going to continue for some time to come, so there is every incentive to the farmer to put every acre possible under cultivation, and I believe with favorable weather conditions we will have a largely increased production all over Canada, especially in the Northwest. With the large grain carrying fleet this company has on the upper lakes, the shareholders can understand what a big difference it makes to us if the crop be large or small in our Canadian Northwest. So we hope the crops will turn out as looked for, and I assure you that our company will be in a position to handle a large part of this traffic to the seaboard. The number of our shareholders is increasing every year and I am pleased to report that the last figures show there are 2,250."

J. W. Norcross, Vice President and Managing Director, in seconding the motion for the adoption of the report, said: "As you have been told by the President, we have sold some of our older and more obsolete ships and replaced them by modern tonnage; and while it is true that a number of our smaller vessels have been taken from the Great Lakes for the ocean service, we have augmented our lake fleet by larger ships, which can be more easily and cheaply operated. Our ocean fleet has been increased, and is operating successfully in different parts of the world, and on the whole the property is in good condition. We have had several disasters, including the s.s. Bermudian, which was



sunk, but which is being salvaged, and in the course of a few months, will be in better condition than she was before the disaster. All our losses were fully covered by insurance to the extent of replacement values.

"It is impossible at present to forecast the company's future, but it seems to me that, while industries which are now working to capacity, will receive somewhat of a setback for a period after the declaration of peace, it will be because a large number of factories came into being during the war, and are largely engaged in manufacturing for war purposes. There is, no doubt, a very large percentage of increase in equipment for the manufacture of all sorts of materials, while, on the other hand, there is a very great decrease in water transportation facilities since the war began, and it will take several years to replace the tonnage lost. It will require the best efforts of all trans-

portation companies after the war to meet the demands of European countries, in the matter of food stuffs alone. It is, therefore, with considerable confidence that we look forward to the company's future."

The directors and officers were all re-elected, and are as follows:—Commander Sir A. Trevor Dawson, R.N., Hon. President; Jas. Carruthers, President; J. W. Norcross, Vice President and Managing Director. Other directors:—C. A. Barnard, J. C. Newman, H. B. Smith, E. Bristol, M. J. Haney, Hon. J. P. B. Casgrain, G. H. Smithers, D. B. Hanna, J. P. Steedman, F. S. Isard, H. W. Cowan, W. E. Burke, J. E. Dalrymple. Secretary: F. Percy Smith. London Advisory Committee: Commander Sir A. Trevor Dawson, R.N., Chairman; Sir Vincent Caillard, Albert Vickers, W. Grant Morden, C. G. Bryan, Sir Mitchell Mitchell-Thomson, Bart., Sir H. Montagu Allan, C.V.O.; Secretary, T. J. Fellowes Brown.

## New Regulations Respecting Life Jackets for Vessels.

The following instructions have been issued by the Board of Steamship Inspection, Marine Department, Ottawa, to steamship inspectors:—

1. **Inspection of Life Jackets.**—No life jacket may be accepted after April 1, 1918, as part of the statutory equipment of a vessel unless—(a) it is of a type approved by a certificate of approval issued on or after May 1, 1917; (b) it complies with the specification annexed to the certificate; and (c) it is in good condition and generally fit for the service intended. Makers of life jackets who wish to obtain approval for their life jackets should make application as indicated in paragraph 8.

2. **General.**—Life jackets intended to form part of the statutory equipment of a vessel must be approved material and construction and those intended for use by adults must be capable of supporting lb. of iron in fresh water for 24 hours. Life jackets intended for use only by children must, in general, be capable of supporting 12 lb. of iron in fresh water for 24 hours. The required buoyancy may be supplied by cork, kapok or other approved substance, but no life jackets which depend on air compartments for their buoyancy will be accepted. The cork used in the manufacture of life jackets should not weigh more than 12 lb. a cubic ft. and must be of good quality and cleaned. Pieces of cork for all parts of jackets except for shoulder or other special pockets should, in general, be not less than 20 cu. in., however, smaller pieces may be worked in in pockets with these sized pieces, provided they are securely attached to the larger pieces with proper wooden pins. In no case will cork shavings or cuttings be accepted. Kapok must be pure Java kapok of good quality, free from seeds or other foreign matter and well cleaned. At least 24 oz. of kapok must be in each life jacket whose buoyancy is derived from this material.

3. **Distribution of buoyancy.**—The buoyancy must be so distributed in the life jacket that when worn by a person in the water it will comply with the following conditions:—(a) When the wearer is inert the position of the body should be as near the vertical as possible, and if there is any tendency to depart from the vertical it should be to throw the head backwards. (b) The buoyancy of the jacket should be so arranged that it will keep the wearer's

head clear of the water when floating in the inert position. (c) In the event of the wearer through any cause being rendered unconscious, the head should be so supported that it would not fall forward and the face become submerged. (d) Life jackets for adults must be such that they will fulfil the conditions set out in paragraphs a, b and c of this section when worn by persons whose chest measurement varies from 32 to 50 in., life jackets for children will be required to fulfil these conditions when the chest measurement varies from 24 to 38 in. Jackets intended for both adults and children must be such as will be satisfactory for the whole range of chest measure from 24 to 50 in.

4. **The covers** may be of cotton, linen or other approved material, subject to the following conditions:—Covers of all linen with no admixture of other material must weigh not less than 6 oz. to the yard with a width of 27 in., must have at least 28 threads to the inch in the warp and in the weft, and must be unglazed and unmangled, and free from all dressing. It may be bleached or unbleached, but no artificially colored material is to be used except in covers for children's life jackets. The minimum standard for covers of all cotton with no admixture of other material will be cotton duck 38 double warp and 54 in weft, weighing not less than 6 oz. to the yard, with a width of 29 in. Any other material must be submitted for approval.

5. **The tapes** must be of linen or cotton thread web 1½ in. wide, and capable of bearing a strain of 200 lb., and must be securely attached to the cover; the ends of the tapes where they are attached to the cover must be doubled, and the ends displayed. The method of affixing and tying the tapes must be simple and easily understood, and capable of being rapidly carried out.

6. **Sewing.**—The tops of the cover must be sewn with doubled material, and must be at least as strong as no. 25a 5-cord Whittemore cord. All other sewing is to be made with linen thread not less than no. 25.

7. **Marking.**—All jackets must be marked "Adult's life jacket," "Child's life jacket," or "Adult or Child's life jacket," as the case may be, and must also be marked in such a manner as will indicate clearly the front and back in bold letters not less than 2 in. deep. The maker's

name or trade mark should be on all life jackets. Life jackets suitable for children only shall be colored red.

8. **Approval of life jackets.**—Application for test and approval of life jackets should be made to the Chairman, Board of Steamship Inspection, Marine Department, Ottawa, by shipowners desirous of adopting any special type of life jacket, or by makers; a sample jacket should be forwarded for a test, arrangements for which may then be made, the makers or their representatives usually being notified so that they may be present. When the test is completed a specification form will be supplied by the department, which must be correctly filled in and duly signed by the maker, who must also submit sample photographs in various positions of adjustment, with instructions for adjustment. The specification and photographs, and report on the test will then be submitted for the board's consideration, the result of which will be communicated to the makers, and if the jacket is approved, they will be requested to supply a number of copies of the specification and photographs for distribution amongst the inspectors, and to undertake to provide with all jackets supplied a minimum number of photographs showing adjustments. All life jackets must strictly comply with the specification and original sample approved by the board, and be inspected at the maker's works or warehouse, or elsewhere, by a representative of the board, when a percentage of each batch will be tested by floating them in fresh water with the required amount of iron suspended from them. If found satisfactory, they should be stamped to show they are approved, with date of examination and initials of the person making the examination. All life jackets found on board ship may be tested by a steamship inspector, whether previously approved or not, and may be tested as to condition, or to ascertain what weight of iron they will support, and if found deficient, will be condemned, and a report will be made to the board, who reserve the power at any time to withdraw their approval of an approved life jacket.

**The Ogdensburg Coal & Towing Co., Ltd.**, the incorporation of which was mentioned in our last issue, has an authorized capital of \$1,500,000 and office at Montreal. It has taken over the business formerly conducted in Canada by the Ogdensburg Coal & Towing Co., Ogdensburg, N.Y., and has formed another company under the name of the Ogdensburg Coal Corporation, with \$200,000 authorized capital, to take over the U. S. business, and which will be controlled by the Canadian company. The officers and directors of the O. C. & T. Co. are:—President, W. L. McDougald, Vice President, Century Coal & Coke Co., Montreal; Secretary-Treasurer, G. P. Morgan, Montreal; other directors, J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines; R. M. Wolvin, President, Montreal Transportation Co.; C. A. Barnard, K.C., director, Canada Steamship Lines, Ltd., and F. S. Isard, Comptroller, Canada Steamship Lines, Ltd.

**The Marine Engineers Association of Newfoundland**, at a recent annual meeting, passed resolutions of sympathy with the relatives of those who lost their lives in the wreck of the s.s. Florizel. Officers for this year were elected as follows:—C. Puddester, President; John Pollock, Vice President; James Coffey, Secretary-Treasurer; W. Crossman, A. McKinley, T. Crossman, J. Forbes, J. Macfarlane and E. J. Birch, executive committee.



## Notes on Vancouver Shipbuilding Plants.

Some twenty years ago the parts of two or three small steel cargo boats were taken from Great Britain and assembled in Coal Harbor, B.C., but no serious effort was made in shipbuilding until the spring of 1916, by which time the shortage of tonnage was becoming acutely felt, particularly in the export lumber trade. The B.C. Government offered encouragement to the construction of wooden auxiliary

aerial conveyors or travelling derricks to distribute it where required when worked up, and hoists to handle it at the respective ships. In every case the base of the yard is contiguous to railway trackage, with a spur or spurs into the yard. Facing the line of vessels, is a row of machine shops and adjoining these are the compressors, usually three, for furnishing power to the compressed air tools. These consist of boring, drilling and turning machines, a plant for cutting, threading and heading bolts, and another for galvanizing. A model loft, pattern shops, a floor for templates and the drafting office are grouped together. As compared with the plant for building steel ships, that for the construction of wooden vessels is simple. The massive timbers are unloaded from scow, by the travelling derrick on the wharf, and stacked in the space between the lines of the derrick and the overhead conveyors, which carry the material to the band saw shops, where it is cut to the templates and swung over to the second travelling derrick and by it transferred to a third. It is then delivered to the ship cranes and hoisted into position.

Fig. 2 shows the layout by another wooden ship yard, of slightly different

few months ago steel ships in this territory were assembled rather than built, but a complete change is being brought about. Though no steel is rolled in the province as yet, all shaping, cutting, bending, welding, casting, turning, boring, drilling and punching are now done in the shops of the yards. Engines are designed and built complete, instead of being simply imported and set up.

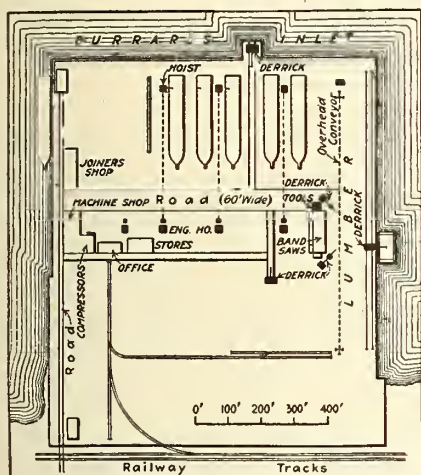


Fig. 1. Wm. Lyall Shipbuilding Co.'s yards at West Vancouver.

steam sailing schooners and a score of them were quickly under construction. They are built to one type, of 2,550 tons dead weight and 1,500,000 ft. of lumber in capacity. Each has twin Bolinder engines of 360 h.p. to give a speed of 8 knots. Many of this first group of ships have been launched and several have made voyages.

Steel steam shipbuilding quickly followed on the first wooden shipbuilding programme, and on May 17, 1917, the first oceangoing steamer built in Western Canada was launched by the Wallace Shipyards, Ltd., at North Vancouver. This was War Dog, a boat of 4,800 tons dead weight, 315 ft. long, 45 ft. moulded beam, 27 ft. deep and 6,750 tons displacement. Engines designed and built in the yards gave her a speed of 10 knots.

The wooden ship yards are, broadly

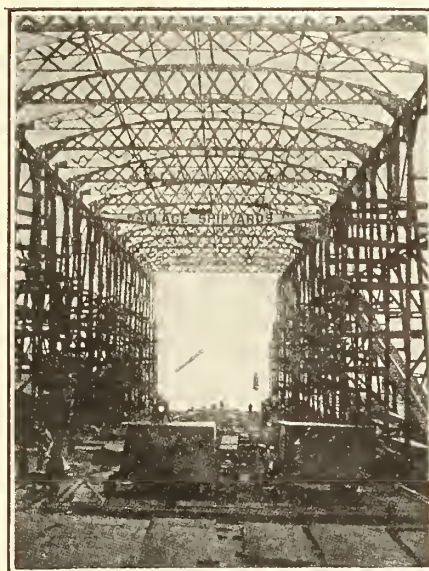


Fig. 3. Steel shipbuilding at Wallace Shipyards, Ltd., North Vancouver.

speaking, laid out on the same general plan, a typical example of which is the Wm. Lyall Shipbuilding Co.'s yards near Vancouver, shown in fig. 1. There is a wide frontage to the sea or river, with space sufficient for laying down the number of vessels required side by side, with a pier or wharfage for unloading waterborne material and a narrow gauge line or lines to carry it to the workshops, and stern posts, scarving, trimming knees, etc., the preparation of the masts, yards and booms.

A much greater space is demanded for wooden shipbuilding, in proportion to tonnage, than for building in steel. In the latter yards, materials require much less space. Plates are placed on edge in racks and passed with the minimum of handling to the punching and boring machines. A

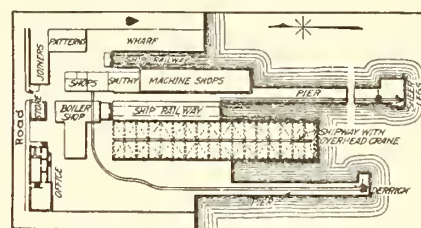


Fig. 4. Wallace Shipyards, Ltd., plant, North Vancouver.

The Wallace shipyard at North Vancouver (fig. 4) is a good example of this type. Here a large runway with overhead crane is placed between two piers. The one to the west is for loading and unloading scows, and the eastern pier has a travelling derrick, but has sheer legs as well, at the pierhead, and the pier is upon a greater scale and is carried out to deep water. Immediately east of the shipway, with its crane, which is shown in fig. 3, is a ship railway of 2,500 tons capacity and parallel with that are the machine shops, smithy, shaping floor, furnace room and galvanizing plant in the order named. The offices and drafting rooms occupy a second story over a portion of the machine shops. Then comes ship railway 2, of 1,500 tons capacity, and more wharfage where an extension of the machine shops

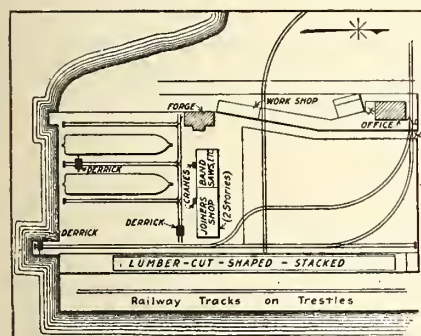


Fig. 2. A typical wooden shipbuilding yard at Vancouver.

is being made. The crane, it will be noticed from fig. 3, travels on light steel runways braced by overhead trusses. North of the gantry extend the boiler shop sheds, punching and riveting shops, all beneath the same roof. The L-shaped building in the northeast corner contains joiner and carpenter shops and pattern rooms. The forge connected with these yards is on the Vancouver side of the

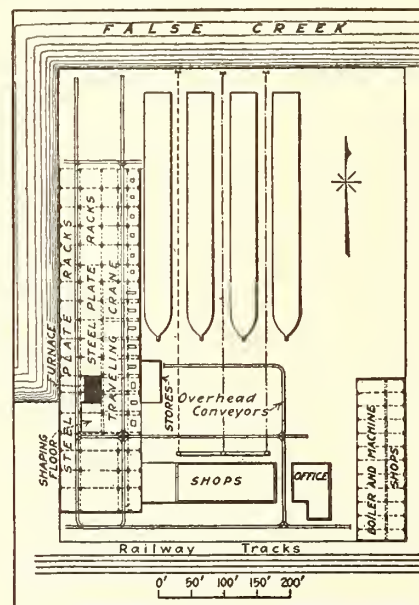


Fig. 5. J. Coughlan & Sons Steel Shipbuilding Yard.

is being made. The crane, it will be noticed from fig. 3, travels on light steel runways braced by overhead trusses. North of the gantry extend the boiler shop sheds, punching and riveting shops, all beneath the same roof. The L-shaped building in the northeast corner contains joiner and carpenter shops and pattern rooms. The forge connected with these yards is on the Vancouver side of the



harbor. The entire capacity of the yard is limited to the construction of one ship of 8,800 tons and the simultaneous docking and repairing of two others, not exceeding 2,500 and 1,500 tons deadweight.

In J. Coughlan & Sons yards on False Creek six steel steamers aggregating 52,800 tons deadweight are in course of construction. The position is ideal, having a wide frontage on sufficiently deep and wide water with a bay and wharfage on the west side. The Great Northern Ry. tracks form the southern base. The building is carried on in the open, but one of the last ships laid down is to be covered in. The plant is arranged on three sides of a square, of which the ships may be said to form the fourth. The buildings facing the railway (see fig. 5) are 2 storied, with a through entrance separating the office block from the machine shops, which extend across the balance of the

front. Above the machine shops are the mold loft and template rooms. The whole of the west wing is devoted to the preparation of the plates, which are unloaded at the wharf on that side and placed in the racks by means of a narrow gauge railway, and distributed thence to the different boring, cutting and punching machines, by means of the same narrow gauge, which is continued around the building. A powerful travelling crane takes the prepared materials to the yard and then they are delivered by the overhead conveyors to the different ships. An extensive shaping floor and furnaces are included in this wing, where the ribs, bearers, beams and stanchions are bent to the templates. A 3-story boiler shop forms the eastern wing, for the engines and boilers are designed and built in the yards.—R. Mackay Fripp in *Engineering News-Record*.

not take a pilot, seems open to question. The fact of his having to pay the charges whether he takes a pilot or not, does not necessarily make him take one, on the ground that he has to pay for it anyway. He takes a pilot for safety. If the clause compelling payment of the charges in the event of a pilot not being taken were deleted, there is no ground for supposing that a master would take chances and navigate the vessel to port without a pilot. It is thought that the situation might be cleared by making the taking of a pilot compulsory; by improving the type of the men engaged in the service; and by strictly defining the pilot's duties, so that both he and the master of a vessel might understand their positions, and the responsibilities of each.

## Responsibility for Damages in Marine Casualties.

In the course of the recent enquiry into pilotage at maritime ports, the chairman of the commission, Thos. Robb, is reported to have stated, in commenting on certain evidence, that "if the law compelled a master to take a pilot, the master was relieved of responsibility."

This is a question which seems to have exercised the minds of various persons who are, or have been, associated, either officially, or through misfortune, with marine casualties, for some time, and not alone on this side of the Atlantic Ocean. So far as one can judge after hunting for the needle of common sense in a haystack of legal verbiage, there are different rules applying in different territorial waters, but so far as Canada is concerned, there appears to be no ambiguity in the law governing the point.

The Canada Shipping Act, R.S.C. 1906, chap. 113, sec. 473, provides as follows:—"No owner or master of any ship shall, in any case, be compelled to employ or to give his ship into the charge of a pilot, either on the ground of his being compelled to pay pilotage dues to any person, or otherwise."

From this, it is clear that pilotage in Canadian territorial waters is not compulsory, even though the payment of pilotage dues may be.

Sec. 474 of the same act reads, as follows:—"Nothing in this part shall exempt any owner or master of any ship from liability for any loss or damage occasioned by his ship to any person or property, on the ground, either of such ship being in charge of a licensed pilot, or such loss or damage being occasioned by the act or default of a licensed pilot, or on any other ground."

It is also equally clear from this, that the master cannot divest himself of responsibility for any damage caused while the vessel may be in charge of a licensed pilot, even if such damage be caused by an act or default of the pilot.

We have been favored with the following extract from Marsden's *Collisions at Sea*, on the matter of compulsory pilotage:—"A pilot, whom the owner or master of a ship voluntarily employs to navigate the ship, is the servant of the owner for that purpose, and the owner is answerable for a collision caused by his fault or negligence. In some waters, and under certain circumstances, the law requires a ship to be placed in charge of, and navigated by, a qualified or licensed pilot, and in such cases, it is a statutory offence on the part of the owner or person

in charge of the ship, not to take a pilot on board. A pilot taken under these circumstances, called 'a compulsory pilot,' is held to be placed in charge of the ship by the law, and to supersede the master in the conduct of the ship so long as she is in pilotage waters. He is not the servant or the agent of the owners, and for a collision caused entirely by his negligence, neither is the owner answerable at law, nor the ship at Admiralty. In such cases the remedy of the injured person is against the pilot alone. Pilotage is held to be compulsory, so as to exempt owners from liability for the acts of the pilot in all British waters, and for all ships in, and for which the employment of a pilot is enforced by penalty, or where the pilotage charge can be recovered against the ship or her owners, whether the pilot is employed or not. In some foreign waters pilotage is compulsory in the sense that payment of the pilotage charge is compulsory, but the shipowner is nevertheless liable for the pilot's negligence."

This argument, in conjunction with the two sections of the Canada Shipping Act, quoted above, leaves the situation thus:—A master is not compelled to take a pilot on board his vessel; he is compelled to pay the pilotage dues, whether he takes a pilot or not; and neither the master, nor the owners, are relieved from responsibility for damages through any act or default of the pilot, should one be taken on board to navigate the vessel.

A well known shipping authority, in giving Canadian Railway and Marine World his opinion, says: "If the law compels the master to take a pilot, the master is relieved of the responsibility, but I would mention that this would only apply in cases where pilotage is compulsory. Here in Canada, a vessel is not obliged to take a pilot, though the master or owner, whether he does or not, is obliged to pay the pilotage dues. This system, I contend, tends to do away with what is the principal consideration, i.e., safety."

Whatever may be the case in other waters, vessels entering Canadian waters are under Canadian laws, and when a pilot is taken on board, he is there merely in an advisory capacity, owing to his presumed knowledge of local conditions, the sole control of the vessel remaining with the master. Though the master is not compelled to take a pilot, it is always advisable for him to do so, and, as a matter of fact it is always done by ocean going vessels; but whether he should be compelled to pay pilotage charges should he

**s.s. Calgarian Torpedoed.**—The Canadian Pacific Ocean Services' s.s. *Calgarian* was reported to have been torpedoed and sunk off the coast of Ireland, Mar. 1. She was built at Glasgow, Scotland, in 1913, for the Allan Line Steamship Co., now absorbed by C.P.O.S., Ltd., and was of the cruiser stern type, equipped with quadruple screw, triple expansion arrangement of turbines. Her dimensions were: length 600 ft., breadth 72 ft., moulded depth 54 ft.; gross tonnage, 13,500. She had accommodation for 220 first class passengers, 500 second class, and 1,000 third class, and quarters for a crew of 470. Since the early stages of the war, she has been used as an auxiliary cruiser and for transport work, but latterly for cruiser work only. It has been suggested that vessels of this type should not be used for auxiliary cruiser operations, as they are stated not to be fitted for the work, and could be used otherwise to better advantage.

**The Unsinkable Ship.**—The Ship Protection Committee of the U. S. Shipping Board, received a number of suggestions recently for making ships practically unsinkable, and has selected several of the devices for tests and experiments.

## Telegraph, Telephone and Cable Matters.

The Public Works Department received tenders during March for the supply of 30,000 lb. of galvanized iron telegraph wire, for early delivery at Nelson, B.C., for the Dominion Government Telegraph Service.

The Great North Western Telegraph Co. has opened offices at St. Prime, Que., Athens, Ont., Dropmore and Hyas, Man., Kelsey, Alta., and has closed its office at Perthuis, Que. The name of the office at Methors Mills, Que., has been changed to Dosquet.

The Public Works Department will receive tenders to Apr. 15, for 12 knots of single conductor submarine telegraph cable, 107 lb. copper and 150 lb. gutta percha per knot, with sheathing of 12 no. 8 s.w.g. iron wires, for delivery at Halifax, N.S., within 8 weeks after placing of order, and also for 5 reels of same on several reels for distribution, to be delivered at Vancouver, B.C.

The Maritime Telegraph & Telephone Co.'s report for 1917 shows receipts of \$813,483.52, and expenses of \$683,978.53. The dividends paid, including one paid Jan. 1, 1918, were \$111,000, leaving a surplus of \$18,504.99. The directors for this year are: S. M. Brookfield, O. E. Smith, G. E. Faulkner, L. B. MacFarlane, C. F. Sise, Jr., G. F. Pearson, A. Mackinlay, J. H. Winfield, and E. L. Macdonald.



### Among the Express Companies.

The Board of Railway Commissioners has extended the express delivery and collection limits for Calgary, Alta., as defined in order 15149, Sept. 8, 1911, by including Rideau Road, from Mission Bridge to the Emery Floral Co.'s green-houses.

The Canadian Ex. Co. announced Mar. 18, that, under instructions by the Ontario Government, no more intoxicating liquors would be carried by it to points on the Timiskaming & Northern Ontario Ry. As the carriage and delivery of intoxicating liquors to and in Ontario, is prohibited by law, after Mar. 31, this was only anticipating the law by a few days.

The Board of Railway Commissioners issued order 27036, Feb. 26, directing that the Dominion Ex. Co.'s special mileage tariff for the carriage of cream of in British Columbia, be extended beyond 75 miles, as follows:—75 to 100 miles, 5 gal. can, 40c.; 8 gal. can, 45c.; 10 gal. can, 60c.; 100 to 150 miles, 5 gal. can, 50c.; 8 gal. can, 55c.; 10 gal. can, 68c.; 150 to 200 miles, 5 gal. can, 60c.; 8 gal. can, 65c.; 10 gal. can, 75c. The new rates are effective Apr. 1. The application for a reduction in the rates for cream for distances not over 75 miles, was refused.

Consequent on the death of J. A. D. Vickers, Vice President and General Manager, Western Lines, American Ex. Co., Chicago, Ill., the following changes have been announced:—C. D. Summy has been appointed acting General Manager, Western Lines, Chicago; W. E. Beckner has been appointed Assistant General Manager, Western Lines, Chicago. We have also been advised of the following changes:—W. G. Smith has resumed his duties as Manager, Central Department, Western Lines, Cleveland, Ohio; J. H. Gates has been appointed Manager, Northwestern Department, Western Lines, Chicago, and C. L. Chase, heretofore acting Manager, Northwestern Department, Chicago, has been appointed Manager, Southern Department, Western in connection with the death of J. A. D.

Vickers, which was referred to in Canadian Railway and Marine World for March, the American Express Co.'s President, G. C. Taylor, issued the following circular: "With deep regret I record the death of J. A. D. Vickers, Vice President and General Manager of the company at Chicago, which occurred at his home on Feb. 17. He had been continuously in the express service since 1875, a period of 43 years, occupying the position of Vice President and General Manager for the last four years. Mr. Vickers won his high place in the express world by merit. Zealous for the interests of the company he represented, he never allowed his zeal to obscure his keen sense of justice in dealing with both his associates and the public. As an executive he exercised his authority with such kindness and modesty as to win the love and confidence of all those associated with him."

### Printing Express Receipts in English and French.

Mention was made in Canadian Railway and Marine World for March, of a claim against the Dominion Express Co. for \$150 for loss of baggage, on which the company had confessed judgment for its full liability of \$50, the plaintiff refusing same, on the ground that the shipping papers were in English, which he was unable to read, and claiming that they should have been in French. In delivering judgment for the plaintiff for \$50, as admitted by the company, Mr. Justice Archer dealt with the matter of the use of the dual languages on transportation papers, which is of sufficient importance to summarize as follows:—

The plaintiff, in answer to the defendants' plea, alleged that the receipt stating the conditions was in English, notwithstanding the law which obliges the company to publish its contracts and receipts in both languages, that he did not know English and did not understand the matter mentioned on the receipt, that the company's agent did not call his atten-

tion to the conditions and did not ask him to declare the value of the trunk and contents, and that he would have paid extra charges in respect of the value over \$50 had it been brought to his notice. The court considered that plaintiff knew that, besides the name and address which were inserted in lead pencil in the body of the receipt, there was other printed matter, and that therefore he was sufficiently put on his guard, and that if he could not read the document, he should have asked the agent to give him a receipt in French, to which he was entitled. He did not ask for a receipt in French, and it was therefore due to his own fault that he did not know of the special conditions on the receipt, which was a contract between himself and the company.

### CANADIAN PACIFIC RAILWAY COMPANY.

#### Notice to Shareholders.

The Thirty-seventh Annual General Meeting of the Shareholders of this Company, for the election of Directors to take the places of the retiring Directors and for the transaction of business generally, will be held on Wednesday, the first day of May next, at the principal office of the Company, at Montreal, at Twelve o'clock noon.

The Common Stock Transfer Books will be closed in Montreal, New York and London at 3 p.m. on Tuesday, the ninth day of April. The Preference Stock Books will be closed in London at the same time.

All books will be re-opened on Thursday, the second day of May.

By order of the Board,

ERNEST ALEXANDER,  
Montreal, March 11th, 1918. Secretary.

Freight and Passenger Steamers, Barges, Tugs, Vessels, Yachts, Lighters, Sand Suckers, Scows, etc. and Marine Machinery For Sale and Wanted. Write for Lists.

**JOHN A. MOODY**  
London - - - Ontario

### THE TORONTO, NIAGARA & WESTERN RAILWAY COMPANY.

Notice is hereby given that The Toronto, Niagara and Western Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time wherein it may construct the lines of railway authorized by paragraphs (a) and (b) of section 2 of chapter 51 of the Statutes of Canada for the year 1916, shortly described as follows:—

- (a) Toronto to Hamilton.
- (b) Hamilton via St. Catharines to the International boundary line, with a branch to Port Colborne.

GERARD RUEL,  
Chief Solicitor.

Toronto, 25th February, 1918.

### THE CANADIAN NORTHERN ONTARIO RAILWAY COMPANY.

Notice is hereby given that the Canadian Northern Ontario Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time wherein it may construct the line of railway authorized by paragraph (b) of section 2 of chapter of the Statutes of Canada for the year 1916, shortly described as follows:—

From a point on its authorized line between Port Arthur and Sudbury, near the head of Long Lake, thence northerly and westerly to a junction with the National Transcontinental Railway east of Lake Nipigon.

GERARD RUEL,  
Chief Solicitor.

Toronto, 5th March, 1918.

## JOHNS-MANVILLE PRODUCTS

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Suction, Tank, Hose  
Air Brake Expander Ring  
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Steel Car Insulation  
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Brake Linings and Asbestos  
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**Trolley Supply Co.**  
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### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Lyman Tube & Supply Co., Ltd.**—Second-Lieutenant E. O. Champagne, of the Royal Flying Corps, heretofore salesman, Lyman Tube & Supply Co., Montreal, has sailed for England.

**Marsh Engineering Works, Ltd.**—The name of Marsh & Henthorn, Limited, makers of hoisting machinery, etc., Belleville, Ont., has been changed, by order in council, to Marsh Engineering Works, Ltd.

**Refrigerator, Heater & Ventilator Car Co.**—The Duluth, Minn., Commercial Club passed a resolution recently, urging Director General McAdoo to adopt, for all U.S. railways, the Moore refrigerator car system, which is in operation on the Duluth & Iron Range and the Duluth, Missanabie & Southern Rds., and is being introduced on the Great Northern Ry. and other lines, to conserve perishable food products.

**Franklin Railway Supply Co. of Canada, Ltd.**, the incorporation of which, under the Dominion Companies Act, was mentioned in Canadian Railway and Marine World for March, has taken over the business handled heretofore by the Montreal branch of the Franklin Railway Supply Co., Inc. The new company has exclusive rights in Canada to all the parent com-

pany's products. The officers of the new company are:—J. S. Coffin, Sr., Chairman of Board; J. S. Coffin, Jr., President, and Leland Brooks, Vice President. The Chairman, J. S. Coffin, Sr., spent 14 years in railway work and has been in the railway supply field for 26 years. He began as a machinist's apprentice and became locomotive fireman, locomotive man and road foreman of locomotives, most of his experience being on the Wisconsin Central. He then went to the Galena Signal Oil Co. as mechanical expert, was promoted to manager of that department and several years later was elected Vice President. After two years he resigned the latter position to become Vice President of the American Brake Shoe & Foundry Co., which position he held until 1911. In 1902 he organized the Franklin Railway Supply Co., Inc., of which he was president up to 1916, when he was elected Chairman of the Board. He is also a director of a number of other corporations. The President, J. S. Coffin, Jr., after leaving at the Stevens Institute, went with the Venango Manufacturing Co., Franklin, Pa., and later with the American Locomotive Co. in its erecting shop and as a locomotive inspector. In 1912 he went to the Franklin Railway Supply Co. as a service representative, then into the sales department, and in 1915 was appointed Canadian Sales Manager, which position he held up to the time of his recent election. The Vice President, Leland Brooks, after leaving Stevens Institute, was employed by the New York Central Rd. for seven years in the engineering department, and then by the Franklin Railway Supply Co., Inc. For the past year he has been connected with its Canadian branch as Assistant Manager.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacramento Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

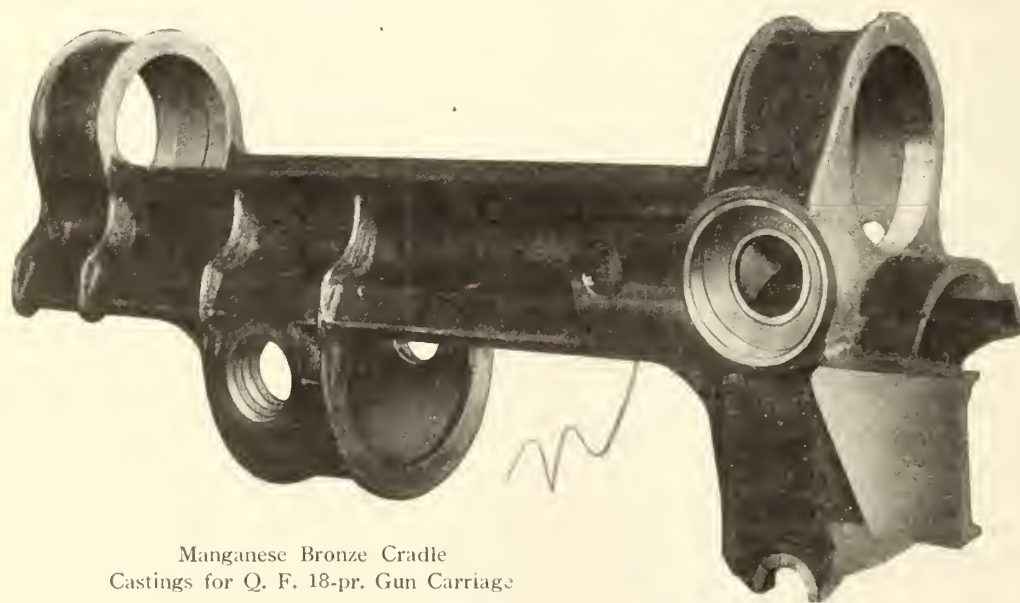
Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

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Castings for Q. F. 18-pr. Gun Carriage

**Castings**  
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in  
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Rough or  
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Complete  
to Specification

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**Car Wheels, Axles and Boxes.** Either Chilled Tread Wheels or Light Spoked Wheels. Any size or style of axle or box.

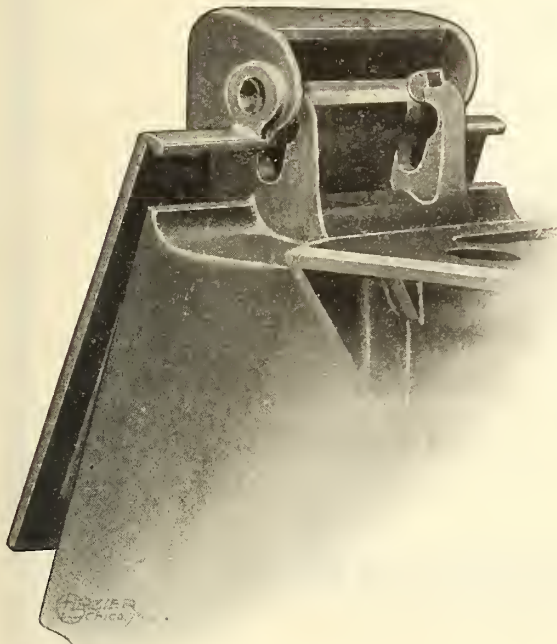
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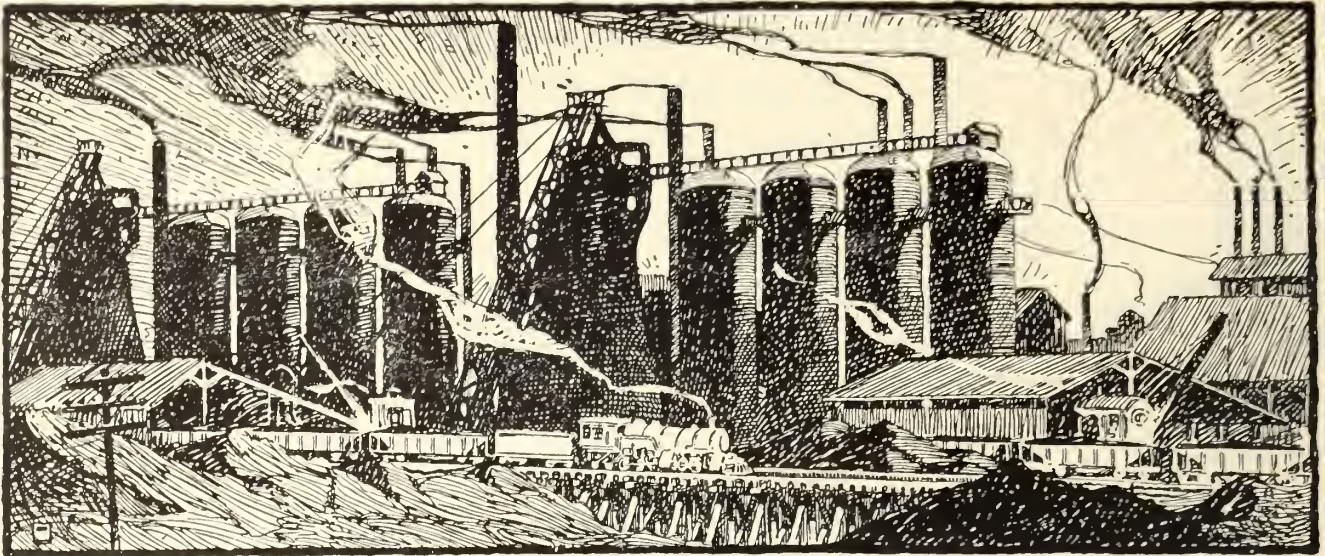
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We use these words advisedly—fully understanding their definitions—and realizing the obligation we place upon ourselves by their continued use in connection with our products of Iron and Steel, and our attitude to the people we serve.

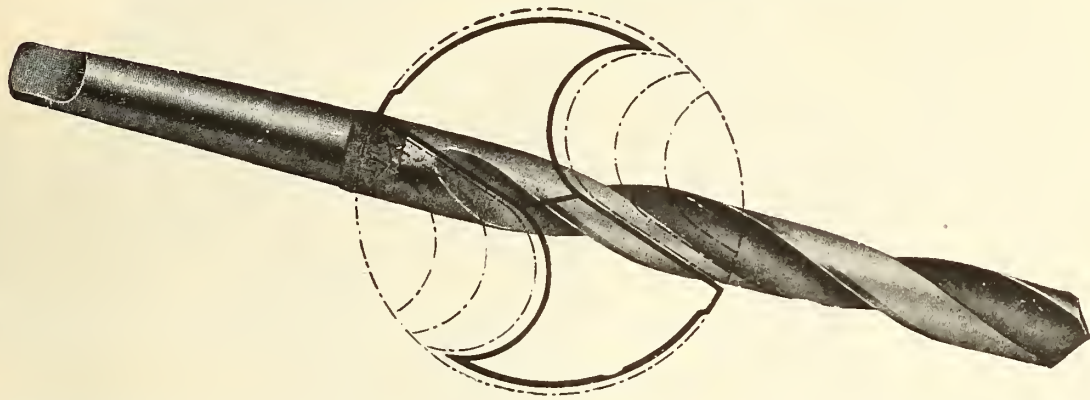
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### *Rush Orders!*

When a rush order for **Drills** becomes necessary place that order in our hands. We are making exceptionally quick deliveries of our famous **WILT HIGH SPEED** and **CARBON TWIST DRILLS**, and our service is pleasing an ever-increasing number of customers.

**Wilt Twist Drills** are preferred by many of Canada's leading manufacturers, and they are extensively used in war **Production Work** abroad.

*Put them to the test—they'll serve you best.*

*Famous for  
their  
Service*

*Famous for  
their  
Economy*

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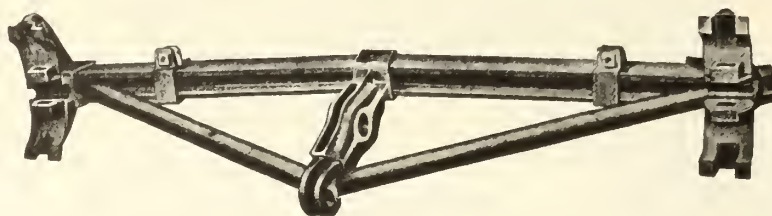


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*Canada's Largest Cash Buyers and Liquidators*

Factories and Complete Plants.  
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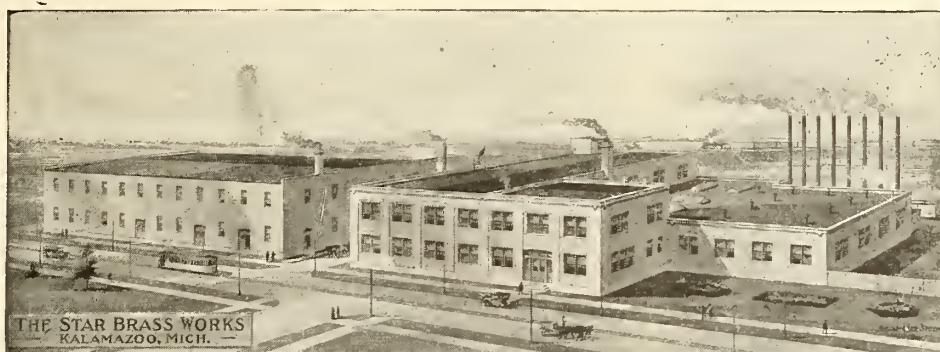
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Just compare this record with that of ordinary unreinforced brake shoes. Almost invariably they go to pieces before being half worn out, and their average scrap weight is about fifteen pounds.

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MANUFACTURERS OF

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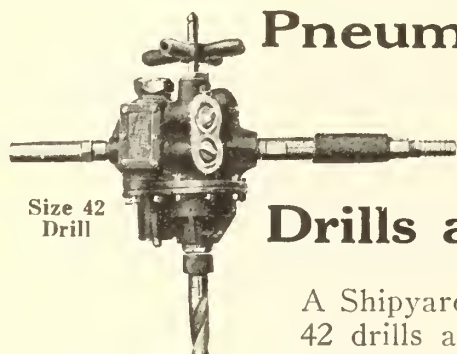
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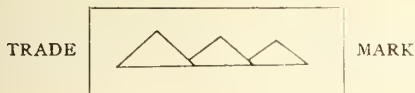
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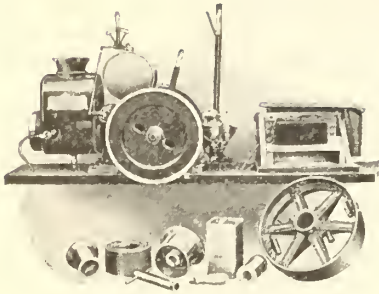
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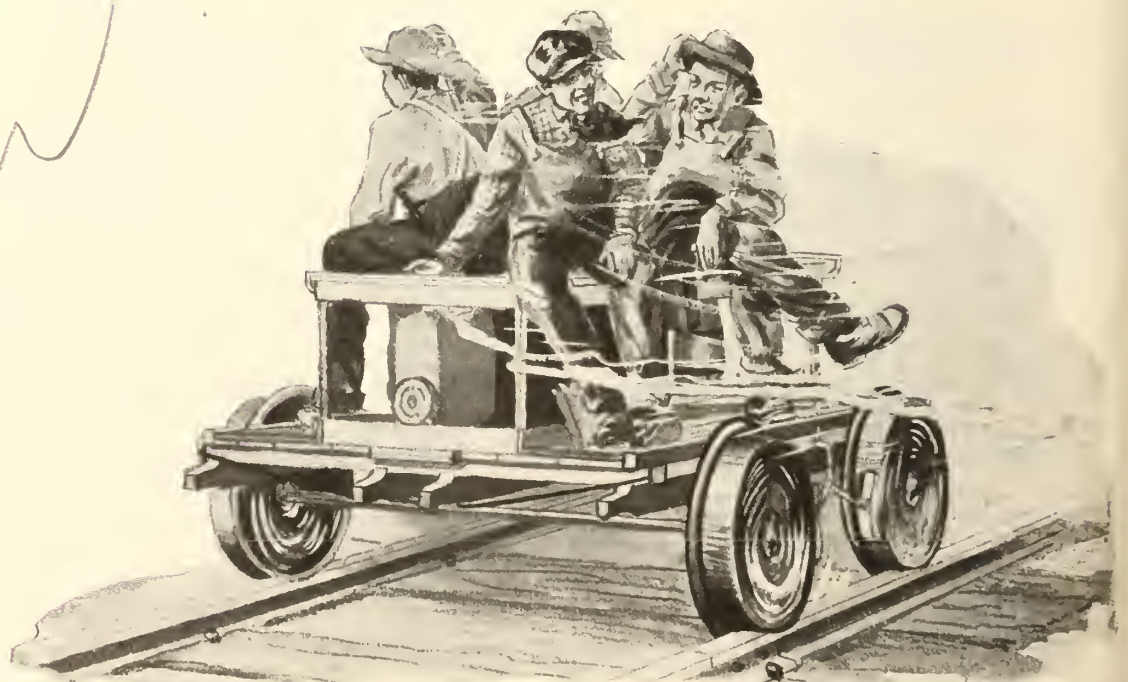
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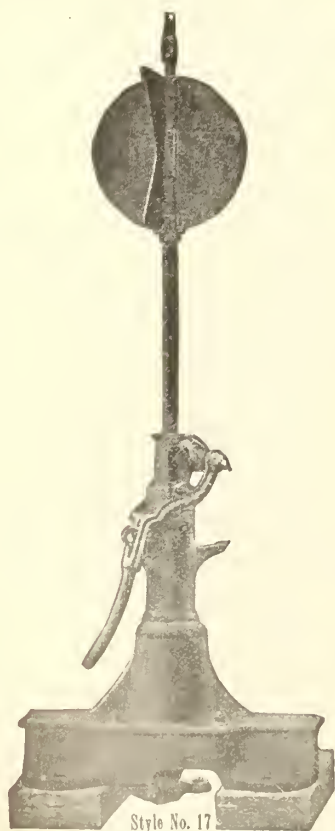
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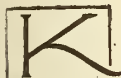
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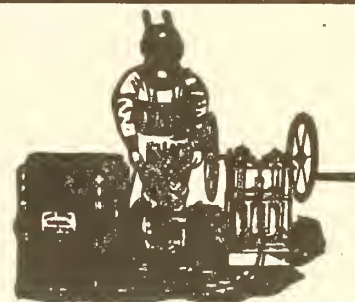
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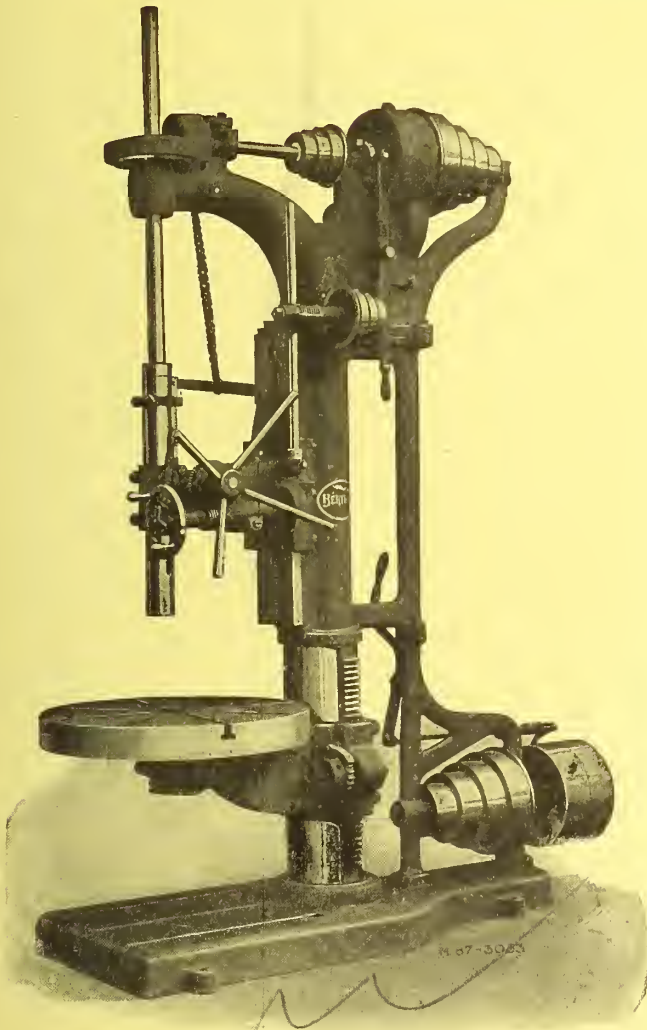


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Number 243

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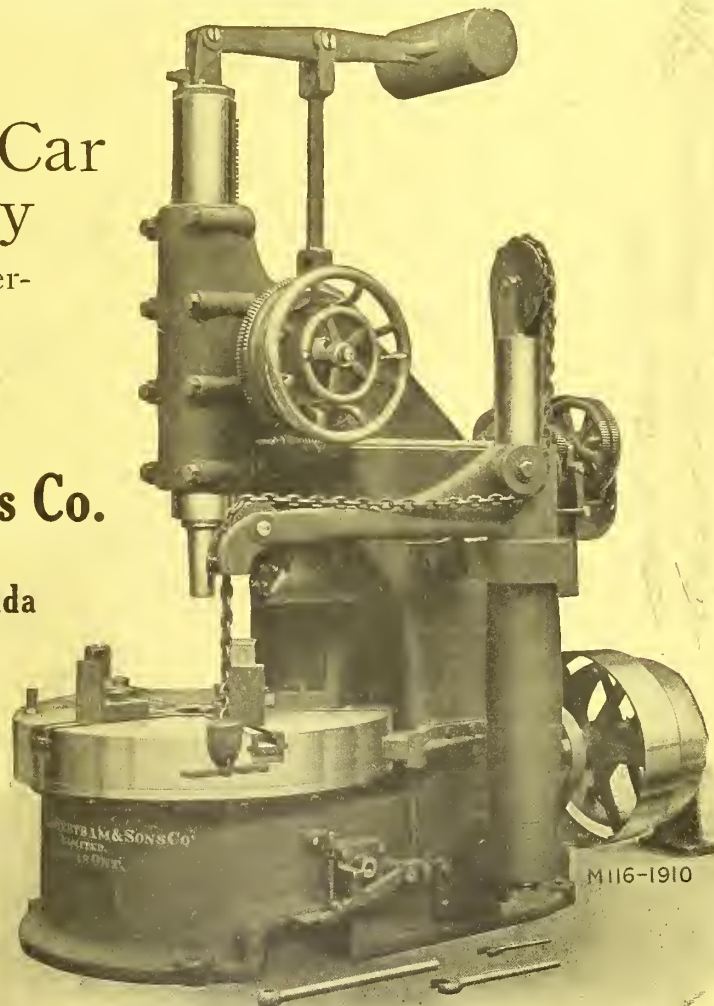
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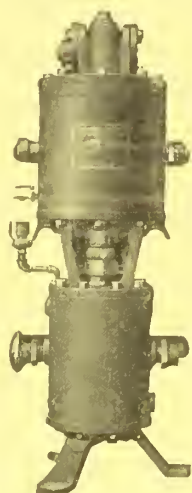
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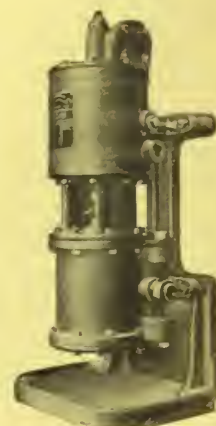
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They are designed with ample proportion of all wearing parts, insuring durability and low maintenance, and they occupy a minimum of space. They can be installed anywhere without any prepared foundation; or they can be mounted direct on a boiler, a post, column or wall: when desired a movable stand is provided. These compressors are the accepted standard for air-brake systems, which is a sufficient guarantee of absolute reliability.



Compressor on Stand

**Canadian Westinghouse Company, Limited, Hamilton, Ontario**

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT. WILLIAM, Cuthbertson Bldg. WINNIPEG, 158 Portage Ave. E. EDMONTON, 211 McLeod Bldg. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg.

ESTABLISHED 1860

Sole Canadian Rights  
to Manufacture the  
"HYDE"

Anchor-  
Windlasses

Steering-  
Engines

Cargo-  
Winches

Which have stood the  
test of 50 YEARS



**PROPELLER  
WHEELS**

Largest Stock in  
Canada

**STEEL  
CASTINGS**

Cut Shows Largest Solid Propeller Ever Made in Canada.

Manufactured by

**The WM. KENNEDY & SONS, Ltd., Owen Sound, Ont.**





## A Good Coal Storage System

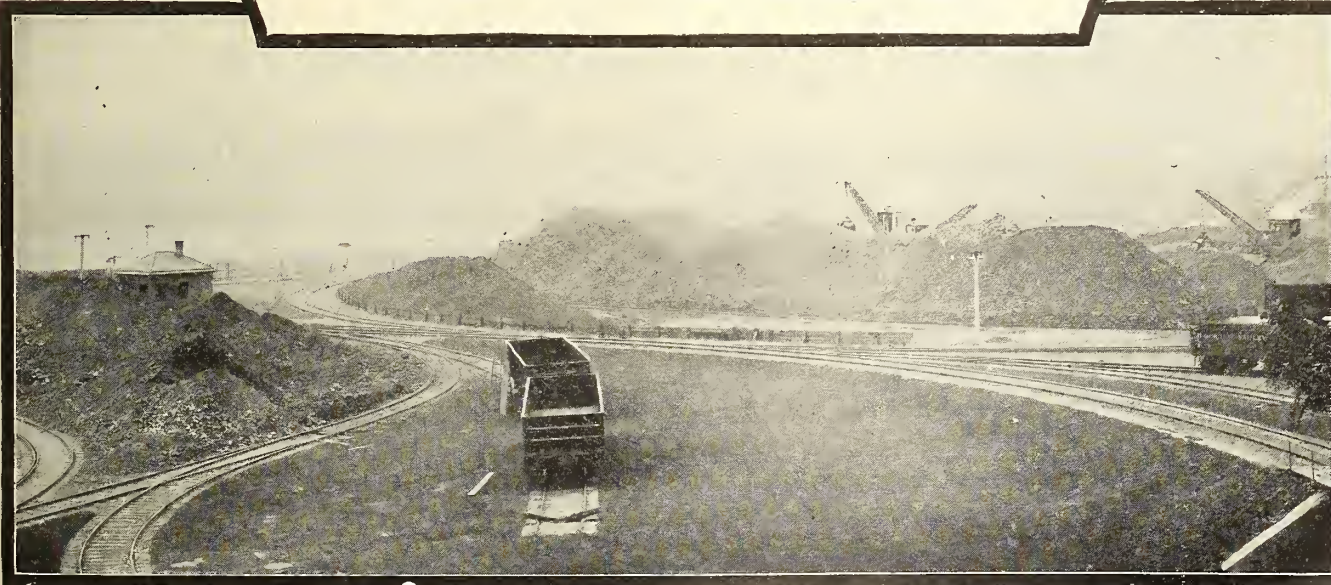
The Detroit Edison Company handle their storage coal with a number of Brownhoist Locomotive Cranes. Their yard is shown below. The tracks are so laid that every bit of ground can be reached by the cranes and any particular grade of coal can be reached quickly. The coal is piled 15 to 20 ft. high, which permits a large storage supply. The top view shows two Brownhoist Cranes with Brownhoist Buckets loading a car to be taken into the plant. On this class of work each crane will handle 90 to 100 tons per hour. Besides handling the coal the cranes do the switching work and other hoisting around the plant.

Brownhoist Cranes were chosen for this work because they are fast, safe and can be relied upon to work continuously. When locomotive cranes are used for this work, you can easily understand that only the best should be used. Breakdowns are disastrous. The Brownhoist may cost more, but is worth it.

### The Brown Hoisting Machinery Company Cleveland, Ohio, U. S. A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, Etc.  
as well as Smaller Cranes and Hoists.

Branch Offices in New York, Pittsburgh, Chicago and San Francisco.





# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg.,  
Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH,  
ENGINE and CAR OILS, and PERFECTION VALVE  
and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to  
five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organi-  
zation of skilled railway mechanics of wide and varied experi-  
ence. Services of Experts furnished free of charge to patrons  
interested in the economical use of oils.

## STREET RAILWAY LUBRICATION A SPECIALTY

---

USE

### Galena Railway Safety Oil

in Headlights, Marker and Classification Lamps, to secure Effi-  
ciency of Service, Maximum Candle Power, Clearness of Light.

### Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long  
time burning, to avoid smoked and cracked chimneys and  
crusted wicks.

Tests and Correspondence Solicited.

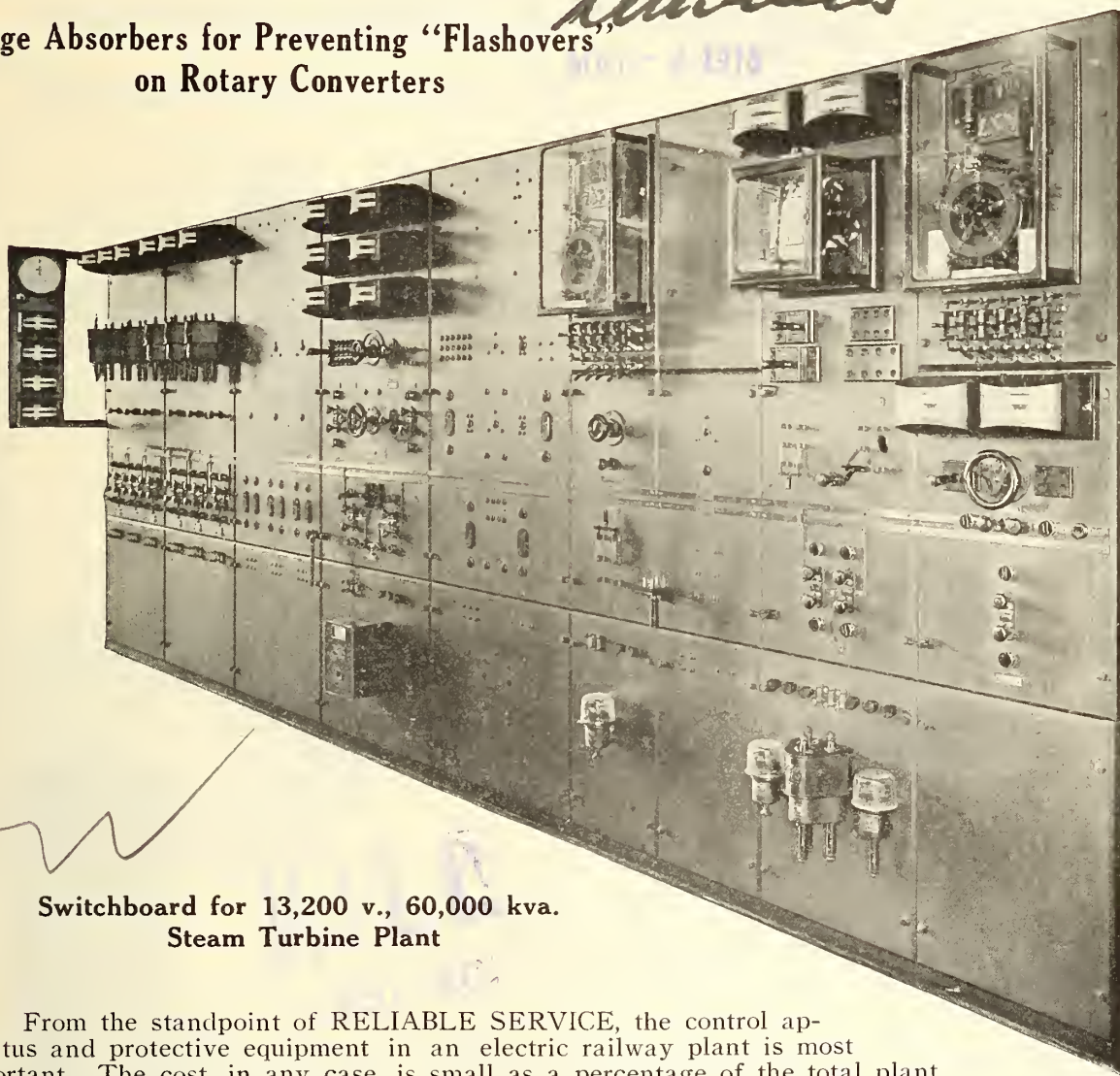


# Modern Switchboards and Protective Apparatus

Switchboards for Central Stations  
Railway Substations  
Consumers' Plants

Lightning Arrestors for Stations  
Lines  
Cars and Locomotives

Surge Absorbers for Preventing "Flashovers"  
on Rotary Converters



Switchboard for 13,200 v., 60,000 kva.  
Steam Turbine Plant

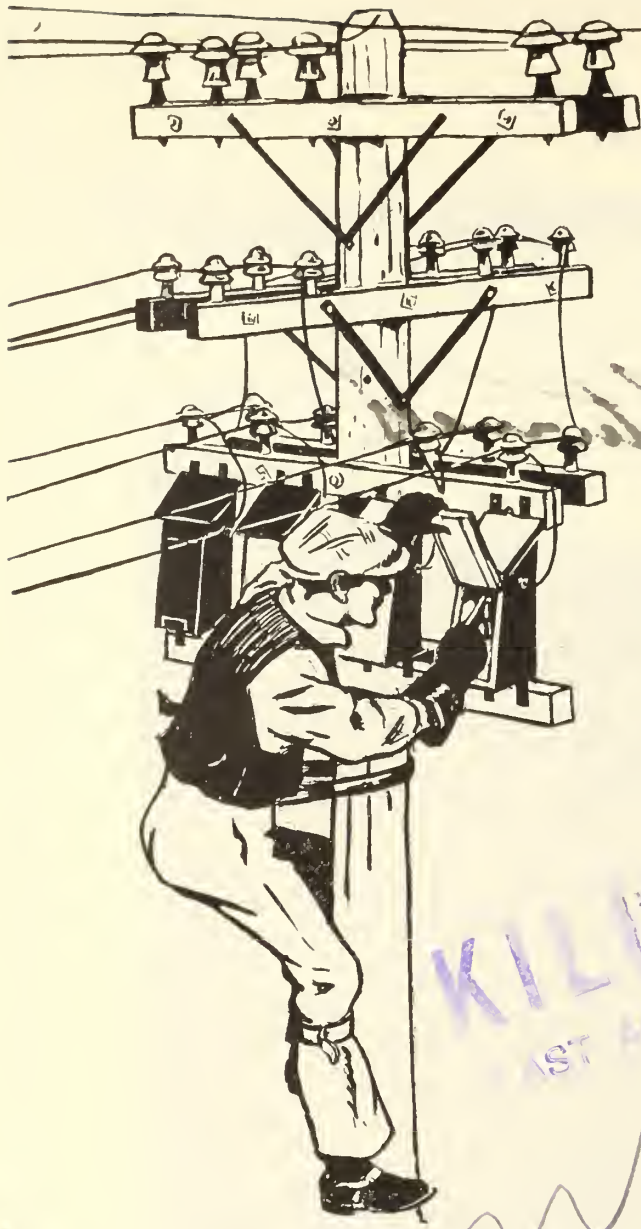
From the standpoint of RELIABLE SERVICE, the control apparatus and protective equipment in an electric railway plant is most important. The cost, in any case, is small as a percentage of the total plant cost and hence you CANNOT AFFORD to use anything but the best.

Our Switchboard Engineers will be glad to give you assistance in laying out switchboards and in selecting the control apparatus and protective devices best adapted to your special requirements.

## CANADIAN GENERAL ELECTRIC CO. LIMITED

Head Office: Toronto. Sales Offices: Montreal, Halifax, Sydney, Ottawa, Cobalt, South Porcupine, London, Winnipeg, Calgary, Edmonton, Nelson and Vancouver.





## *Lightning Flashes*

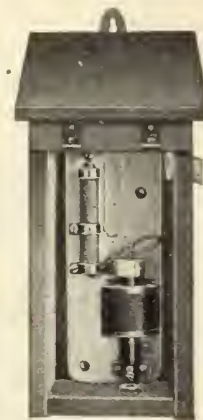
*may instantly burn  
out your apparatus  
if not protected  
with—*

## **Garton-Daniels Lightning Arresters**

In nearly every station, on nearly all lines you find the Garton-Daniels—the one type of lightning arrester that has remained unchanged in principle through more than a quarter century of service.

Think of it. For over 25 years they have been protecting many millions of dollars' worth of electrical apparatus. And they have been doing it right, because their small air-gap distance, low series resistance and positive mechanical circuit breaker form a combination which is the most efficient and reliable lightning protective unit known.

And right now, before lightning flashes actually interrupt your service and probably burn out some apparatus, it is indeed the time to consider lightning protection and buy sufficient Garton-Daniels Lightning Arresters to protect all of your important apparatus.



Typical Pole Type  
D.C. Arrester

*Write for quotations.*

### **Electric Service Supplies Co.**

MANUFACTURERS

PHILADELPHIA  
17th and Cambria Sts.

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50 Church St.

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Monadnock Bldg.

### **Lyman Tube & Supply Co., Ltd.**

CANADIAN DISTRIBUTORS

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Lyman Tube Bldg.

WINNIPEG  
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33 Melinda Street

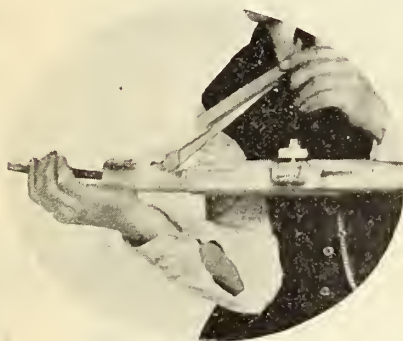




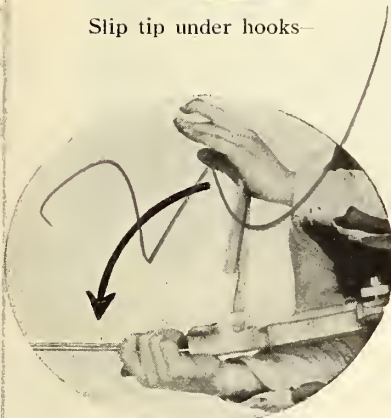
# PRODUCTS



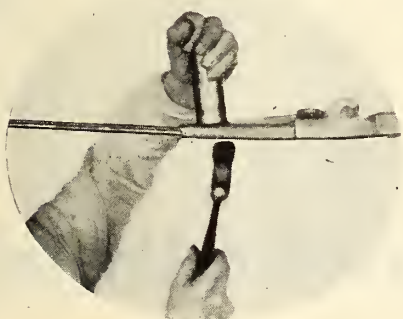
O-B Type E Frog, fitted for high speed service and for use where various types of cars are operated



Slip tip under hooks—



Turn over and down on the wire—



Clinch the lips and the job is done.  
Renewal of tips is just as easy.

## O-B Trolley Frogs Simplify Maintenance

It is under adverse conditions—short headway, rain, wind—that the good qualities of O-B Trolley Frogs—Types D and E—are emphasized.

They go up in a hurry. The wires are held in a single, powerful clamp, secured in the Type D by one bolt—in the larger Type E by two bolts and lock washers.

O-B Cam Tips form the approach. The illustrations on the left tell their story.

Altogether there are only six parts in the Type D and nine in the Type E.

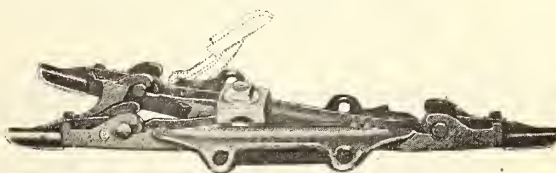
Such simplicity is always valuable. It saves time and minimizes traffic delays.

O-B Frogs are well designed and sturdy. They are good for long, hard service.

Catalog No. 16 and Supplement No. 1 list the complete line of O-B Line Materials.

## The Ohio Brass Company

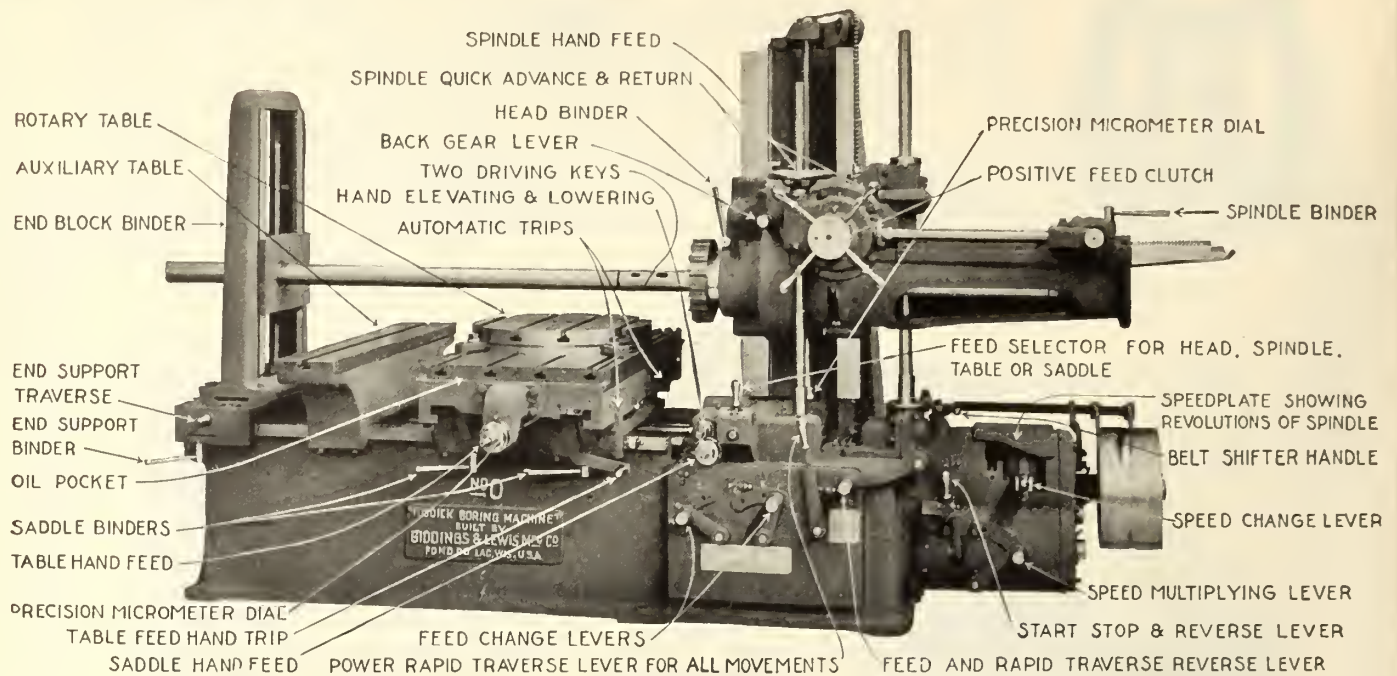
Mansfield - Ohio



O-B Type D Frog, suitable for moderate speeds and all general city service

4 cam tips forming frog





## Horizontal Boring, Drilling and Milling Machine FOSDICK No. 0.

**Specifications:** This Fosdick No. 0 Horizontal Boring, Drilling and Milling Machine has  $3\frac{1}{8}$  in. spindle bored to fit No. 5 Morse Taper. The spindle traverse is 26 in. and the maximum distance from its center to the table is 26 in. The distance from the face of the table to the boring bar support is  $60\frac{1}{2}$  in. The cross travel to table is 30 in. and longitudinal traverse to table is 32 in.

There are 16 spindle speeds in each direction, ranging from 12 to 225. The number of feeds in all directions is 16, ranging from .004 in. to .260 in.

**The moving parts are incased and a safety friction device, adjustable from the outside, prevents accidents. The control is centralized and all levers are provided with latches to prevent chattering on heavy work.**

**Attachments:** When required we can furnish a plain revolving table, also a revolving table with worm movement—either of these graduated to half degrees an auxiliary table for work too large for the regular table, boring bars up to  $3\frac{1}{8}$  in. diameter, and a facing attachment which will face from zero to 18 in. diameter.

*For further information and quotations on this or any other manufacturing equipment address our nearest house.*

## The Canadian Fairbanks-Morse Co., Limited

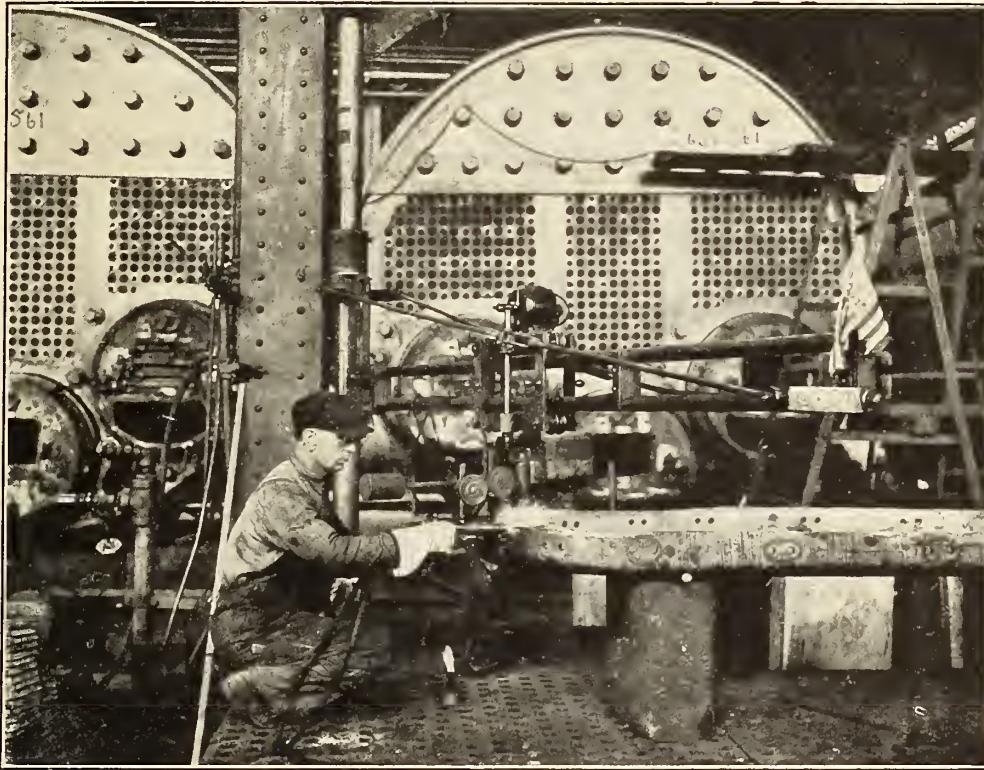
**"Canada's Departmental House for Mechanical Goods"**

St. John,	Quebec,	Montreal,	Ottawa,	Toronto,	Hamilton	Windsor,
Winnipeg,	Saskatoon,	Calgary,	Vancouver.	Victoria.		



## The Value of Oxy-Acetylene And Davis-Bournonville Apparatus

has never been so fully demonstrated as during the past year of government preparations and demands upon the foundries, steel mills, munition plants and the entire metal-working industry, and particularly in the great shipbuilding program.



The Pyrograph, an exclusive Davis-Bournonville development for mechanical cutting with the oxy-acetylene or oxy-hydrogen flame, especially designed for bevel-trimming flanged boiler heads, saving from ten to twenty or more hours over old methods.—Photo by New York Shipbuilding Corporation, Camden, N.J.

Exclusive developments in mechanical cutting and welding with Oxy-Acetylene and Oxy-Hydrogen have been of invaluable assistance to metal workers, coupled with highest efficiency in results and lowest operating cost. The Radiagraph cuts from  $\frac{1}{2}$ -in. to 20-in. steel plate, in straight lines or circles. The Oxygraph cuts in any direction, according to pattern or drawing, along straight lines, curves or sharp angles. Speed from 3 to 18 inches per minute according to thickness.

"Davis Apparatus" has been continuously and effectively developed from the time the company brought the positive, independent pressure system of oxy-acetylene welding and cutting to America ten years ago, and is backed by the longest practical experience, greatest development and widest application, providing portable hand welding and cutting outfits or the most complete installations with acetylene and oxygen and hydrogen producing and compressing plants.

### Davis-Bournonville Company

Factories at Jersey City, Elkhart, Ind., Niagara Falls, Ontario.

**General Offices, Jersey City, N.J.**

Gov't Sales Dept., 412 Colorado Bldg., Washington, D.C.

**Carter Welding Co., Toronto, Ont.**

**General Dealers**

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Seattle  
San Francisco  
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# **GENERAL RAILWAY SIGNAL COMPANY**

## **OF CANADA LIMITED**



Railway Operating Engineers, Manufacturers and Contractors  
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling  
Electric Interlocking

Electric  
Interlocking

Mechanical  
Interlocking

Highway  
Crossing Gates

Highway  
Crossing Bells



A-P-B. Automatic  
Block Signals for  
Single Track

A-C. and D-C.  
Automatic Block  
Signals for  
Double Track

### **Advantages of Absolute-Permissive Block Signaling (A-P-B)**

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.



**Head Office and Works**  
**LACHINE, QUEBEC**





# Railway & Power Engineering Corporation

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LIMITED

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## Railway, Light and Power Equipment

WE GUARANTEE QUALITY AND SERVICE.

*Let Us Quote You on the Following Equipment and Supplies:*

### WE REPRESENT:

#### BATES EXPANDED STEEL TRUSS COMPANY

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Steel poles for Railway, Light and Power Purposes. Outdoor Type Substations.

#### CATSKILL FOUNDRY & MACHINE WORKS

CATSKILL, N.Y.

Steel Gears and Pinions.

#### COLUMBIA MACHINE WORKS & MALLEABLE IRON CO.

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##### CAR EQUIPMENT

Armature and axle bearings  
Armature and field coils  
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Brush-holders and brush-holder springs  
Brake, door and other handles  
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Car trimmings  
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Controller handles  
Forgings of all kinds  
Gear cases (steel or mall. iron)  
Grid resistors  
Third-rail shoe beams and accessories  
Trolley poles (steel) and wheels

##### TOOLS

Armature and axle straighteners  
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Armature buggies and stands  
Babbitting molds  
Banding and heading machines  
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Special Shop Working Tools.

#### LACLEDE STEEL COMPANY

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"Electroheat" Axle and Armature Shafts of all types and sizes. "Electroheat"  
Annealed Side Rods, Main Rods, Crank Pins, Piston Rods.  
All kinds of "Electroheat" Forgings, etc.

#### MORGAN CRUCIBLE COMPANY

NEW YORK

Carbon Brushes.

#### RAILWAY TRACK WORK COMPANY

PHILADELPHIA, PA.

The Reciprocating Track-Grinder.

#### WESTINGHOUSE ELECTRIC AND MANUFACTURING CO.

PITTSBURGH, PA.

Trolley and Catenary Construction Material.

We also handle electric passenger, freight, and express cars and locomotives of all types and descriptions.

Keep this list before you whenever you are in the market for equipment and supplies.

All engineering service without obligation. List will be continued in next issue.





**Quality**

**Service**

**STEEL & IRON  
PRODUCTS**  
OF  
**Every Description**  
THE  
**STEEL COMPANY**  
OF  
**CANADA**  
LIMITED  
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**N**ORTHERN Electric Railway Signal Wire is designed, manufactured and tested to maintain the highest possible factor of safety. In every phase of its production, engineering skill of the highest order directs its manufacture.

To those interested we will be glad to send a list of the larger users of this class of wire who will verify our claims for Northern Electric Railway Signal Wire.

Northern Electric R.S.A. Wire meets with the R.S.A. specifications in every particular and goes a step further—it meets the more rigid Northern Electric specifications which gives you, the user, double protection.

Enquiries as to specifications and prices are welcomed at any of our Branch Houses.

*Manufacturers of*

Armored Cables for bridge installations.

Asbestos Insulated Wire for Headlights.

Bare Weatherproof and Paper Insulated Feeder Cables.

Bare Wires for Train Dispatching.

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Car Wire for Electric light, fan, annunciator, motor and control circuits.

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Paper-Insulated, Lead Covered Telephone Cables.

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Railway Signal Wire, bare and Rubber covered.

Reinforced Weatherproof Cables and Armored Cables for use in car shops.

Rubber Covered Wire for round-houses and repair shops.

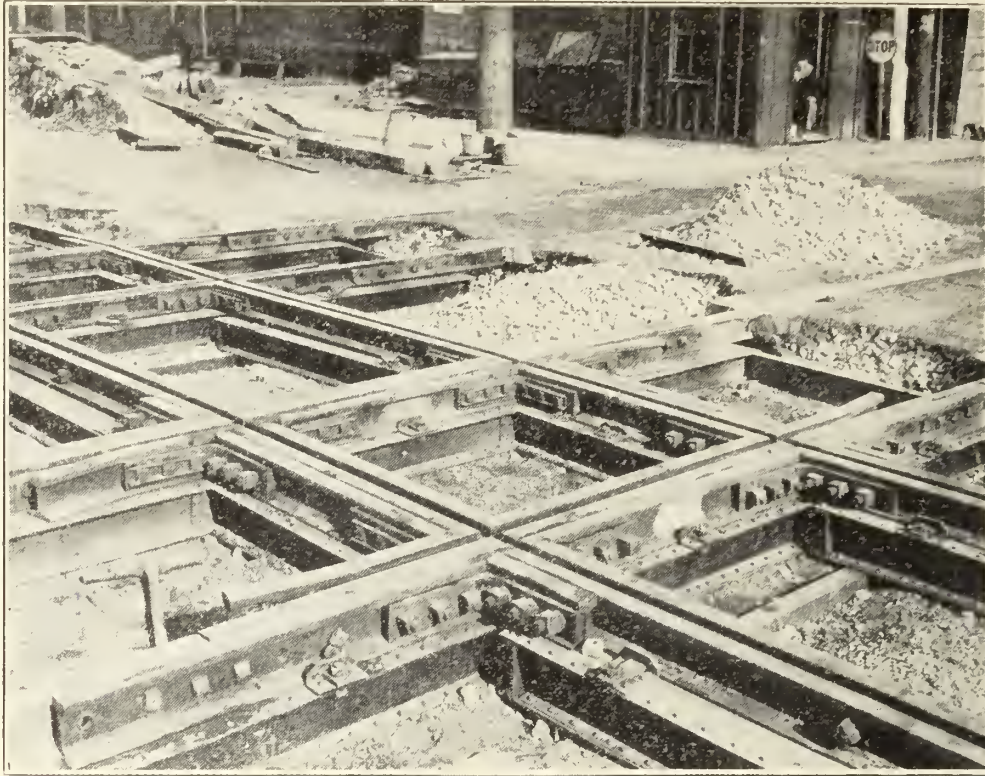
Trolley Wire.

**WIRES & CABLES**

**Northern Electric Company**  
LIMITED

Montreal   Halifax   Ottawa  
Toronto   London   Winnipeg  
Regina   Calgary  
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# INTERNATIONAL

## STEEL CROSSING FOUNDATIONS

Crossing frog maintenance and renewals are the bane of the railway maintenance department. Racking on the unstable foundations furnished by any arrangement of wooden ties is the principal cause of this condition. Crossing frogs are continually out of line and surface. Bolt and filler block breakages soon wreck perfectly good crossing frogs.

A unit bearing on a ruggedly built steel foundation obviates these difficulties.

The steel foundation furnishes a large spread bearing that bridges the soft spots in the ballast and supports the joints. The steel bearing absolutely prevents movement between the members forming the frog.

Isn't this the answer to your particular difficulties? Why put off the day of determining for yourself what many others know from experience. Let us prove our claims to your satisfaction.

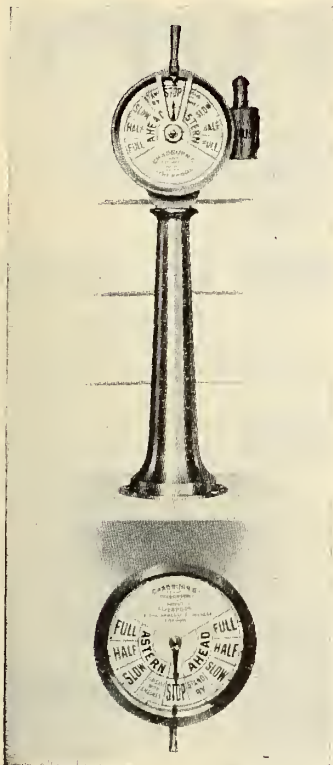
*Write for Catalogue.*

# The International Steel Tie Company

Manufacturers of Steel Twin Ties and Crossing Foundations

General Sales Office and Works: Cleveland, Ohio



*Made in Canada*

## Patent "Duplex Gong" Telegraphs

Telegraphs for Engine, Twin  
Engine, Stokehold, Steering  
and Docking.

Engine Room Indicators (Speed)

Engine Counters

Chadburn's (Ship) Telegraph Co'y, Ltd.  
Bootle, England

*Sole Canadian Agents*

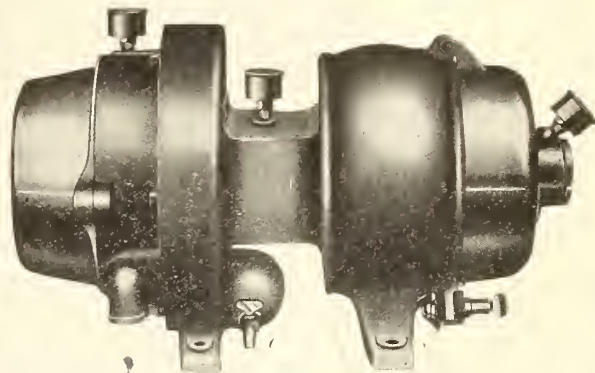
# Taylor & Arnold, Limited

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## The "Taynold" Incandescent Electric Headlight

*Made in Canada*

An Incandescent Headlight that complies with every railroad requirement in every province of Canada. A headlight that has proved efficient and economical.

# Taylor & Arnold, Limited

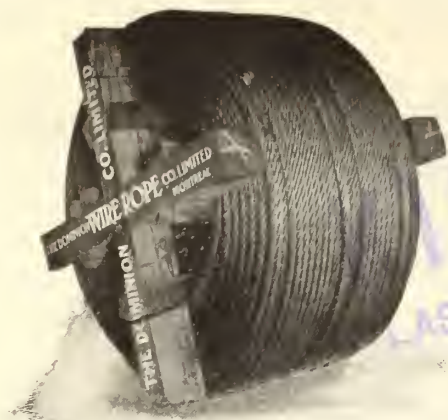
Manufacturers of Railway and Marine Specialties

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# LET US QUOTE YOU FOR WIRE ROPE

for

Ships' Rigging, Cargo Falls, Hawsers  
and Towing Lines

The DOMINION WIRE ROPE Co., Limited  
Montreal Toronto Winnipeg

## General Service Cars —Otis Dump Cars—

Built in  
Box  
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Stock and  
Ore Cars



For  
Standard  
or  
Special  
Service

The HART-OTIS CAR CO., Limited, MONTREAL

—SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA—



“MARION” Drag Line Machines,  
Steam Shovels and R. R. Ditchers

“HAYWARD”  
BUCKETS

Indispensable for General Contractors' Work  
SIMPLE—POWERFUL—QUICK ACTING



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**F. H. Hopkins & Co**

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# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

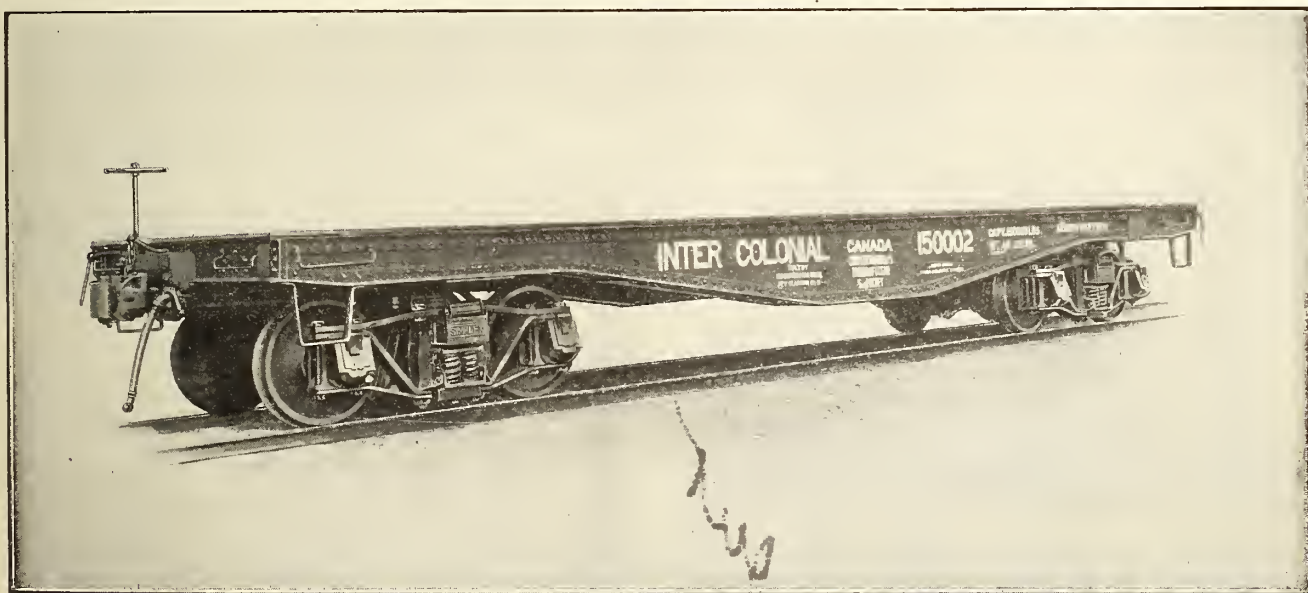
Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

*For prices and particulars write to*

**Head Office - - - New Glasgow, Nova Scotia**

**Western Sales Office, Room 14, Windsor Hotel, Montreal**



75 on Special Pit Car For Canadian Government Railways.

## FLAT CARS, CABOOSES AND MINE CARS

We make a specialty of Flat Cars, Caboose and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

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**ADD****Dearborn Treatment to Your Boiler Feed Water****SUBTRACT****Scale—Corrosion—Pitting—Foaming****RESULT****More Power**

More Power with less fuel. No delays from foaming or leaking. Longer life of flues and fireboxes. Longer Washout periods. Fewer repairs.

You can add Dearborn Treatment to the tender, or direct to boiler.

Made to suit water conditions on your line shown by analysis. Gallon samples of the waters required.

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or

**The Dearborn Chemical Company of Canada, Limited**

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*Cutting 3/8-inch Sheet Steel Piling (including Lock Joints 2 1/4 inches thick) by the Prest-O-Lite Process.*

## One Man Does the Work of Two in Less Time, at Less Cost

This illustration shows one man, with a Prest-O-Lite blowpipe, cutting 3/8-inch Sheet Steel Piling, used in the construction of the protection piers of a large draw bridge.

This one man handled the entire job, cutting an average of seven feet of piling per hour—an enormous saving over the old slow and costly method of sawing, which required the services of two men.

## *Prest-O-Lite* PROCESS

offers splendid opportunities for substantial savings in manufacturing, construction and repair work.

Prest-O-Lite Oxy-Acetylene Welding and Cutting is opening the way to construction and repair operations which cannot be performed by any other process.

Employs both gases (acetylene and oxygen) in portable cylinders. Prest-O-Lite Dissolved Acetylene is backed by Prest-O-Lite Service, which insures prompt exchange of full cylinders for empty ones. Provides dry, purified gas, insuring better welds, quicker work and lower operating cost.

Thorough instructions are furnished free to every user of Prest-O-Lite Dissolved Acetylene. Any average workman who understands metals can learn the process quickly and easily. There is practically no line of metal manufacturing or repairing in which oxy-acetylene welding has not already established itself firmly as standard routine method.

Write for valuable illustrated literature and data on work others are doing by Prest-O-Lite Welding Process. It may point out ways to solve your problems. Address Dept. C-109.

**The Prest-O-Lite Co., Inc.**

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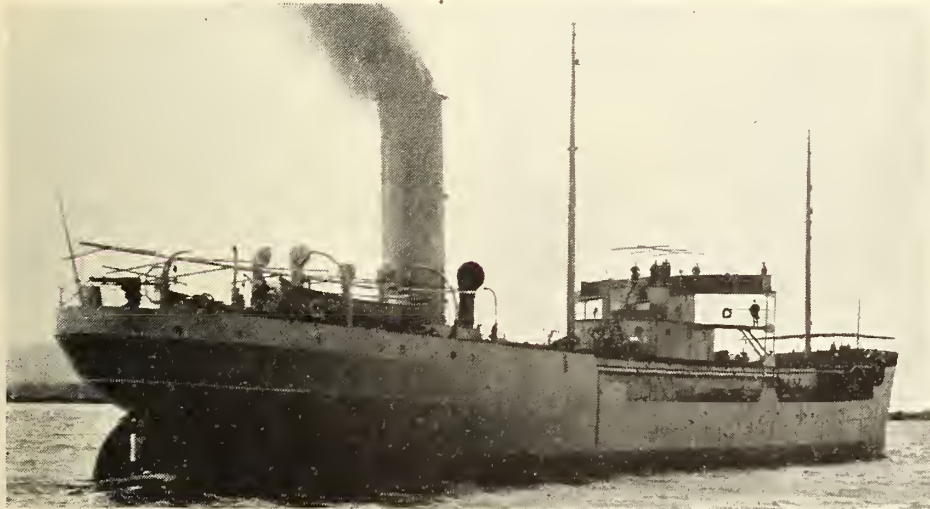
# The Collingwood Shipbuilding Co.

Limited

COLLINGWOOD—ONTARIO—CANADA

**Steel Ships, Engines, Boilers, Castings, and Forgings**

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



S.S. REGINOLITE

**Two Dry Docks  
and  
Shops**

EQUIPPED TO  
OPERATE

**Day or Night  
on  
Repairs**



**MANGANESE  
TRACKWORK**

*for*

*Steam and Electric Railways*

Hard-Centre Inter-  
section for Toronto  
Street Railway

**CANADIAN STEEL FOUNDRIES, Limited**

General Offices :—  
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# Port Arthur Shipbuilding Co., Limited

Port Arthur, Canada

*Designers and Builders of*

**STEEL SHIPS — BOILERS — ENGINES, Etc.**

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

**Dry Dock — 700 ft. x 98 ft. x 16 ft.**



PLANT AT PORT ARTHUR, CANADA

In Stock for Immediate Delivery

Several 1st Class, New

**CLAM SHELLS**

1½ and 2 yards.

**4 HOISTING ENGINES**

8¼ in. x 10 in.—with Boilers.

Head Office and Plant

**Port Arthur, Ontario**

To laymen, all files look alike, but skilled mechanics will tell you they prefer to work with "Famous Five" Files.

The steel in them is made from special formulas, which have proven best after years of investigation and practical experience.

Each file is well balanced, sharp and hard. Consequently it will cut efficiently, and last long.

There is such a wide variety of grades, that a buyer can select a file for any type of work and know that it will fulfil his requirements exactly.

*Specify "Famous Five" when ordering. They are:*

**Kearney & Foot    Great Western  
American    Arcade    Globe**

*Made in Canada by*

**The Nicholson File Company**

PORT HOPE

ONTARIO

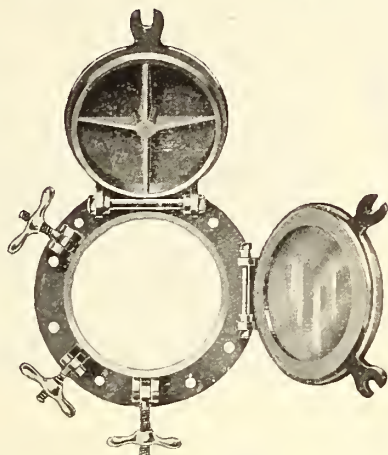
**50  
YEARS  
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BUSINESS**

**OVER  
60,000,000  
FILES  
A YEAR**



# Side Lights

With Heavy  
Polished  
Plate Glass;  
Pure Rubber  
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Improved Swing Bolt,  
Screw Eye and  
Socket Fastening



Extra Heavy  
All Brass or  
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Cast Iron  
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Brass Ports,  
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Storm Doors

*To Pass British Admiralty, Lloyds and Imperial  
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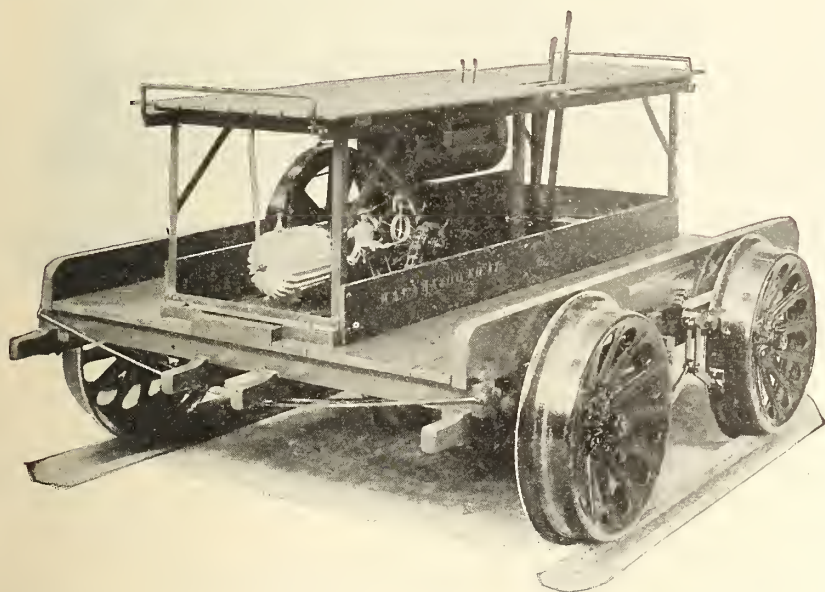
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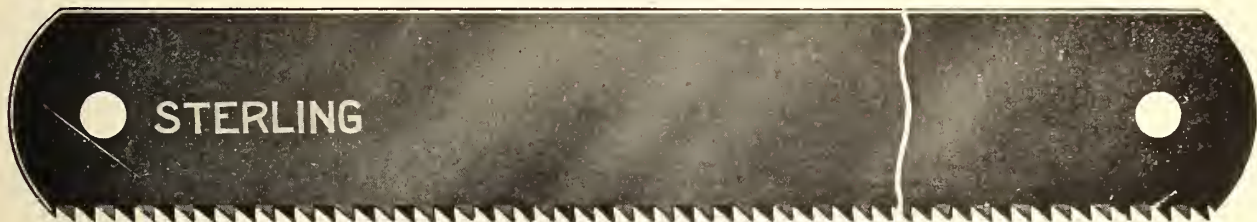
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
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


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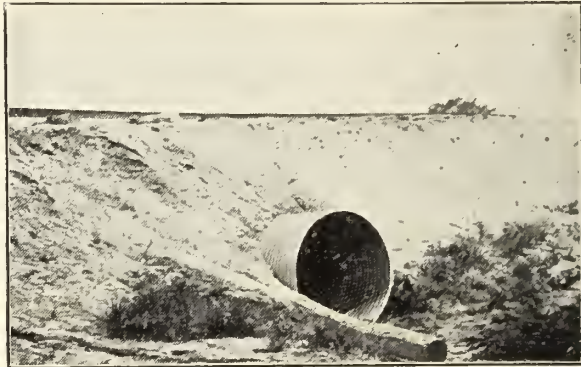
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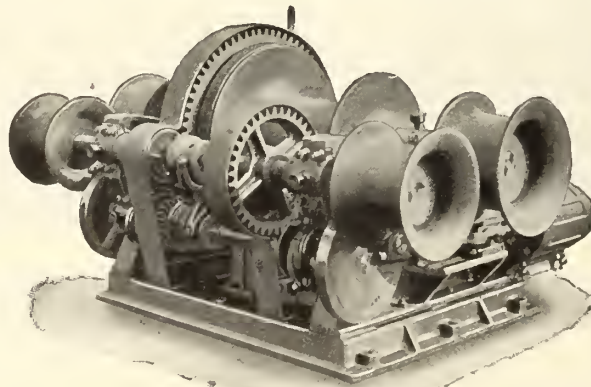
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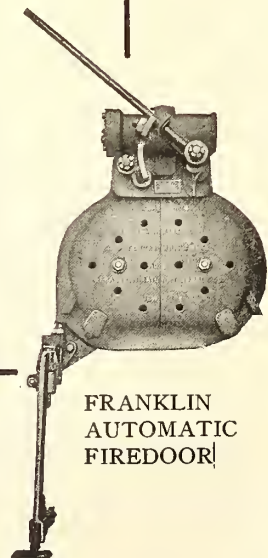
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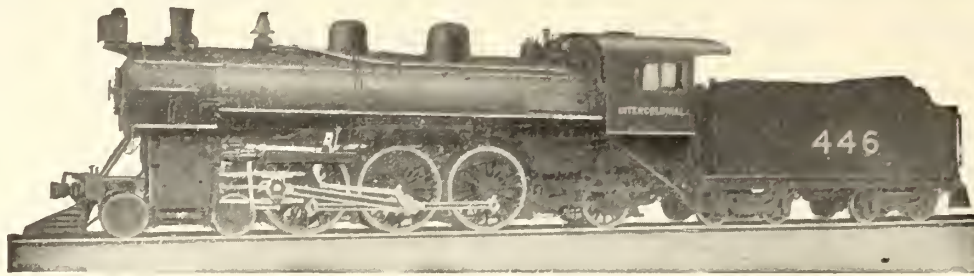
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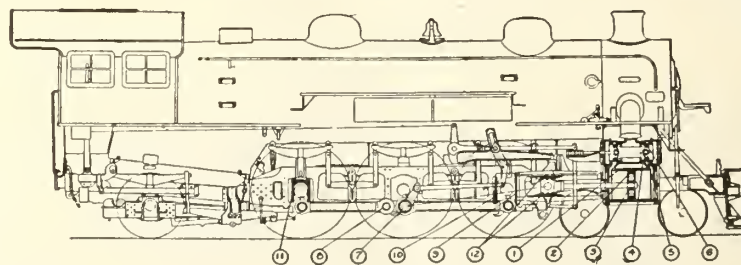
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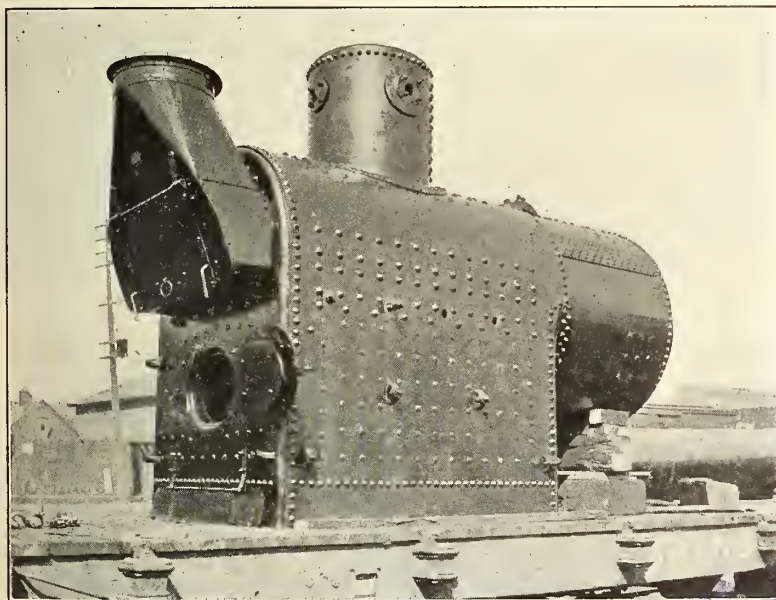


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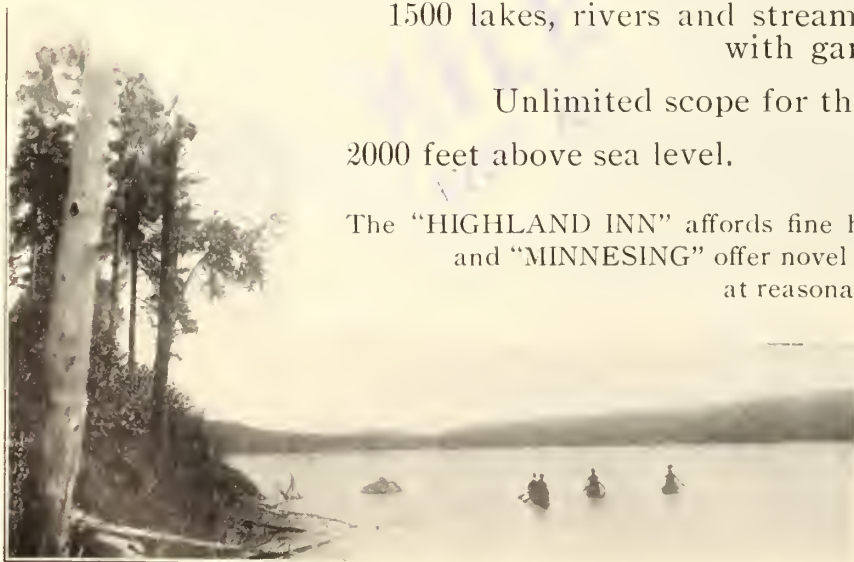
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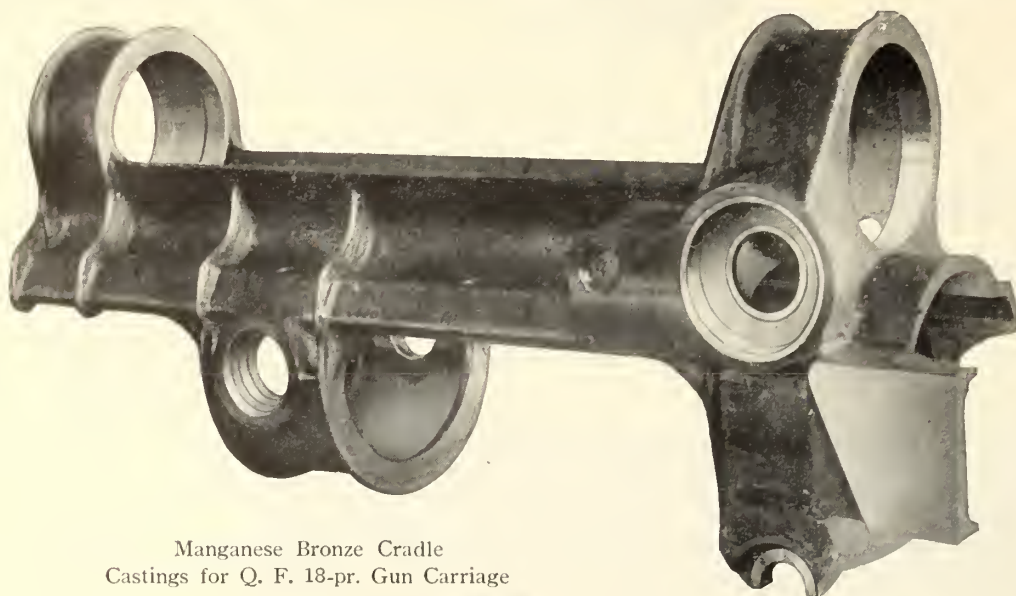
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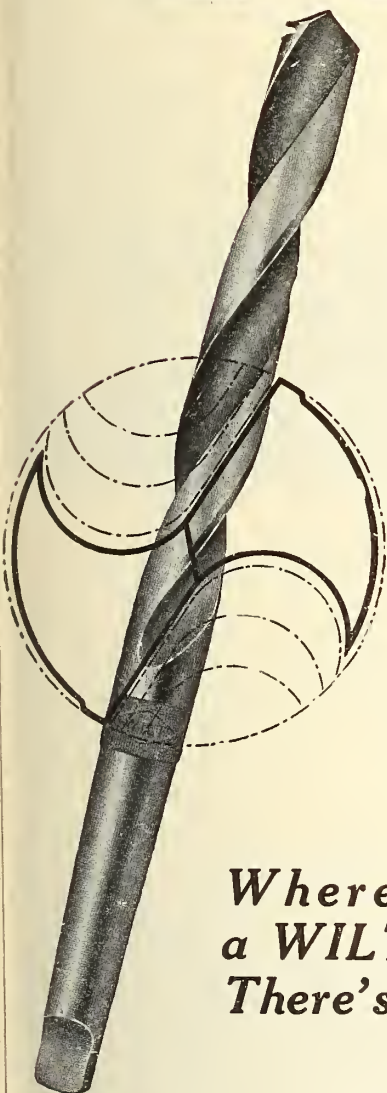
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# Canadian Railway and Marine World

May, 1918

## Tree Planting for Railway Snow Fences.

By W. C. Palmer, North Dakota Agricultural College.

Tree planting is one of the methods of protecting railway cuts from being filled with snow. The snow fence commonly used is expensive and not entirely satisfactory. In a winter of heavy snowfall it often causes more snow to stop in the cut than if there was no protection. When the snow fall is light the snow fence is all right. Part of the Minneapolis, St.

the north and west sides, and three rows on the south and east sides; the outside row of willows, the second and third rows of cottonwoods and boxelder, and the inside row of green ash. Golden, laurel leaved, white and Niobe weeping willows were tried. Of these the laurel leaved proved the hardiest and it is the one that will be used principally in the future. It

of North Dakota and is very hardy. It is shrubby in growth and very much branched, and produces a fruit that is suitable for jelly making. The artemesia dies back each winter, but the stalks remain standing, and a good many of the leaves stay on, so that it furnishes good protection. It is very hardy and does well in very dry and exposed locations. The second row



Tree planting on Minneapolis, St. Paul & Sault Ste. Marie Railway.

The left hand illustration shows the method of preparing the right of way for tree planting, by discing the sod. The right hand illustration shows the method of cultivating the trees. The common and the orchard disc are run alternately, the one throws the soil out, and the other throws it in. In this way the soil is kept level.

Paul and Sault Ste. Marie Ry. runs through North Dakota prairies where snow can drift for miles. Cuts in that section need good protection. A few years ago the officials decided to use trees in protecting the cuts, and the planting and care of them was assigned to T. A. Hovestad, the company's Agricultural Commissioner, who has had a good deal of

is also less subject to insect attack. The Niobe weeping willow gives some promise of being valuable in this work, but further trials will be needed to establish its usefulness. The plan of planting, as worked out, now consists of planting eight rows of trees on the north and west sides and six on the south and east sides, the outside row to be planted with a low grow-

will be planted with green ash or cottonwoods, that will be allowed to grow their full height. The third row will be planted with green ash or boxelder, and the remaining rows will be planted with the laurel leaved willow. These willows will be cut back periodically, one row at a time. The aim is to plant some evergreens in the second and third rows. For



Tree planting machines on Minneapolis, St. Paul & Sault Ste. Marie Railway.

The left hand illustration shows the planter used originally, drawn by horses. The right hand illustration shows the latest model tree planter, attached to a tractor.

experience in growing trees in southwestern and northwestern Minnesota. While tree planting to protect railway cuts is far different from a regular tree plantation yet the principles are the same.

The start on the M., St. P. & S. S. M. was made in 1914. Land was prepared and different tree combinations tried. The general plan was to plant four rows on

ing, spreading, branching tree, or shrub, such as the willow, buffalo berry, carragana, buckthorn or artemesia. The laurel leaved willow will be used the most and will be cut back occasionally. If cut back in the spring, the new shoots will reach a height of from 6 to 7 ft by the autumn, and so furnish protection for the winter. The buffalo berry is a native

North Dakota and Montana the varieties will likely be the ponderosa pine, Black Hills spruce and white spruce.

As the tree planting is to protect cuts, most of it will be on hill tops, hill sides, and ridges, on which the soil is often sandy and gravelly. This means that the trees have to be planted on high dry spots and in the poorer soils, the most



unfavorable conditions for tree growth. The land, if in native prairie sod, is given two years of preparation before the trees are planted. If it has been in crop recently it is given one year of preparation. This might at first seem a loss of time, but it is not, as the preparation given the land stores moisture, and puts the soil in good condition for the trees to make a good start.

A nursery has been started at Drake, N.D., on light sandy soil. The plan is to grow all the seedlings and cuttings needed. Up to the present time a good deal of the stock has been bought from the

puts them down the desired depth, and to a uniform depth. The machine can be set to open a furrow any depth up to 12 in.

The tree planter is made up of a sub-soil plough, to which two vertically mold boards are attached 6 in. apart. This is the furrow opener, that can be set to open a furrow 12 in. deep. Behind this follow two discs, one on each side, set to throw the soil in so as to fill the furrow. Behind the discs follow two press wheels, set at an angle so as to press the soil firmly about the tree roots. Seats are provided for two men, so that they can

time saver. Horses must be brought to camp, the tractor can be left where the day's work ends. A double crew can be worked on the tractor, in two shifts, in that way securing more work from the equipment.

In 1915, 35,000 trees were planted, in 1916, 75,000 and in 1917 500,000. The land has been prepared along 230 miles of right of way and 250 miles have been planted. The plan is to prepare and plant about 100 miles of right of way each year.

In the timbered sections, Mr. Hoverstad advocates securing the additional right



Trees planted in 1915 on the Minneapolis, St. Paul & Sault Ste. Marie Railway.

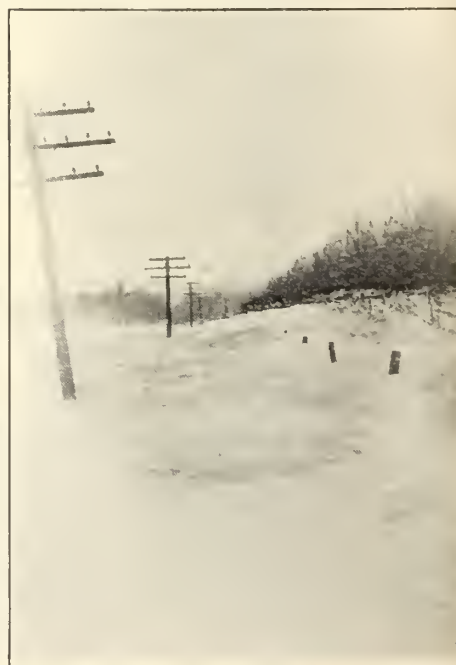
1st row, green ash; 2nd row, boxelder; 3rd row, cottonwood; 4th row, willow. The right hand illustration is from a photograph taken from the track, looking into the trees.

nurseries, but it has not proved so satisfactory as that raised in the nursery at Drake, which has a good deal the same soil and climatic conditions that the trees will have to grow in when set out on the right of way. The trees are dug while dormant, and are stored. They are conveyed in refrigerator cars to the cuts where they are to be planted. In this way it is possible to keep the trees dormant till July. The early planted trees do the best. In planting the trees are carried on motor cars to the cuts where they are to be set out and are heeled in for a day or two, or until needed. Two or three year old stock has been used. That which has been bought has been secured at \$2.50 to \$6.50 per thousand. The trees are planted 3 to 4 ft. apart in rows 8 ft. apart. This makes a strip of trees 72 ft. wide on the north and west sides, and 56 ft. wide on the south and east sides. The right of way being but 100 ft. wide, it is necessary to buy more land along the cuts so as to have 125 ft. wide on the north and west sides and 100 ft. on the south and east sides.

At first the trees were planted by hand, but this proved slow work, and not very satisfactory, as the laborers did not always set the trees deep enough and in case it was dry the dry soil would run into the holes and come into contact with the tree roots. One man would on the average plant 100 trees in a day. The best record made was the planting of 2,000 trees in one day by 12 men. Mr. Hoverstad set about devising a tree planter. The result is a machine with which three men will average from 5,000 to 10,000 trees a day, depending on the size of the places to be planted. The best record was the planting of 13,022 trees in an 8-hour day by three men. The average consumption of gasoline by the tractor is eight gallons a day. Three men will plant as many trees in a day with this machine as 50 to 100 would by hand. The machine planting, in addition to saving labor, puts the trees in contact with moist soil and

drop the trees to be planted into the furrow as it is opened, and the discs and press wheels immediately fill and press the moist soil against the tree roots. The first tree planter made was pulled by horses, but the last one is built on to a

of way before the land is cleared. It is then cheap and has trees growing on it. After the land is cleared the snow will give as much trouble as on the prairie and the land is then expensive and in addition to that trees will have to be



How the trees hold the snow on the Minneapolis, St. Paul and Sault Ste. Marie Ry.

tractor. A larger percentage of trees set out by the tree planter live than of those planted by hand. It was difficult to secure and keep enough men to do the tree planting by hand; the planter has solved this problem too. A good deal of the cultivating is done with the common disc and the orchard disc. They are used alternately, so as to keep the soil level. The weeds in the tree row are taken out by a hoe. The tractor is proving to be a

planted and cared for. In 1918 trees will be planted along some of the company's line in Wisconsin, on right of way that was once wooded.

Tree planting, when properly done, is a more effective protection against snow than the panel fences in common use, and tree planting also costs less. A 16 ft. snow fence panel costs at least \$2.50, and it takes 640 of them to furnish protection for a mile, or a total cost of \$1,600. The



depreciation is 20% a year, or \$320. The cost of setting up and taking down the snow fence is about 20c a panel, or \$128 a mile. Interest at 6% makes \$96 a year, or a total of \$544 as the annual cost per mile for the common snow fence. When the snow fence proves ineffective, as is often the case in winter of heavy snow, the loss in traffic may be more than that, to say nothing of the loss due to the name the railway gets for being blockaded. Planting eight rows on one side of the track and six on the other, will require 25,000 trees for a mile. These at \$5 a thousand will cost \$125. The cost of planting will be less than \$50. These trees will be set out on 15 acres; if the cost of preparation is \$15 an acre it will amount to \$225, or a total of \$400. There will have to be some replanting, and the trees will need to be cultivated for three or

four years and from then on there will need to be some cutting back of them. But such a plantation will offer protection in a winter of the heaviest snow, as well as in a winter of light snow. It will be a permanent affair.

In the prairie regions, tree planting along the right of way furnishes a good demonstration to the farmers as to what can be done in tree growing. Many are planting trees as a result. The tree planting machine is one of the big factors in the success of tree planting. It has cut out the need of big crews, cutting the cost to less than one tenth what it cost to do it by hand. It insures planting the trees the proper depth, and it puts the roots in contact with moist soil and the soil is packed firm about the roots. The machine is not patented, so that anyone can make it. Tree planting when proper-

ly done is one of the cheapest and most effective means of protecting railway cuts from snow.

[EDITOR'S NOTE. Canadian Railway and Marine World would like to obtain particulars of tree planting for snow protection on Canadian railways. Conditions on railways in Manitoba, Saskatchewan, and Alberta are very similar to those in Dakota and Minnesota, and it is hoped that some of our readers will send in particulars of anything that has been done. Some facts about tree snow fences on C.P.R. western lines were published in Canadian Railway and Marine World in Sept., 1913, and June, 1917. Later information is now desired. At one time some tree planting for snow fences was done on the Intercolonial Ry. Particulars in regard to this, or to similar work on any other railways, would be acceptable.]

## Progress in Locomotive Building and Repairing.

By I. C. NEWMARCH, Superintendent of Shops, New York Central Railroad, Col l ingwood, Ohio.

In thinking over the progress made in locomotive repairing and machine shop practice, I am carried back to my boyhood days, when I started to serve my apprenticeship in the Grand Trunk shops at Montreal. The experience that I received then has been beneficial to me throughout my railway career. When I think of the crude methods and means we employed for handling the different classes of work at that time, I realize the wonderful improvements we have made in machinery of all kinds and in all departments used for manufacturing and repairing locomotives.

In 1885, the majority of our machine shops knew but little about high speed steel, consequently carbon steel was used throughout the world on all machines that required cutting tools. From this it can be realized that the output of the shops was limited to a considerable extent. Tungsten, as an alloy of steel, had been known and used for a long period of time, it having been employed in the Damascus steel, but its actual effect was not known until Robert Mushet, after much experimenting, brought out the Mushet high speed steel. This caused radical changes in treating the crucible steel, and much progress and great improvement has been made along this line up to the present time. Prior to the use of high speed steel, it would take on an average of 18 to 20 hours to turn one pair of locomotive driving wheel tires. In 1885, in some shops, they were able to turn out one pair of driving wheels in nine hours. This gain in time was also true with other machines used in the general machine shop.

In 1900, with high speed steel much improved, the machines in operation were found to be almost useless. The machine builders realized what was required, and consequently, they at once began the building of machines to meet the requirements made necessary by the use of high-speed steel. Wheel lathes, engine lathes, boring mills, planing machines, etc., came on the market and greatly accelerated the output of the shop throughout the different departments. In 1909, we ran a test on a new wheel lathe that we received from the Niles people, and turned 14 pairs of driving wheel tires in 10½ hours. On other improved machines, the output has more than doubled. This is true in the average machine shop. This was all brought about by the use of high speed steel and improved machinery, without

which it would be impossible to build or take care of the heavy motive power that we have in this day and age.

About 1885, air drills, air hammers and air compressors were made and being experimented upon. A comparatively limited number of the drills and hammers were placed in shipyards and boiler shops, but their introduction to railway shops did not occur until some years later. In 1893 a pneumatic tool company was organized and began actively to introduce its hammer in railway shops. The air drills on the market at that time were made in Philadelphia and called the Phoenix rotary air drill. They were light in construction and did not have much power. However, a piston drill was brought out, and at that time was considered almost perfect.

Several companies have come to the front with piston air drills having roller bearings, which are considered strong and durable, and which will meet the requirements of any department. They revolutionized drilling, reaming and tapping in locomotive shops. Previous to the use of air drills, ratchets were used. In many instances flues were rolled by hand. The flue holes were reamed by hand, and in a great many cases all work had to be done by hand. This has all been eliminated by the use of air drills or motors. The pneumatic tools have been the means of reducing the number of men that were usually required to do certain kinds of work to about one third.

The bulldozer and forging machines in our blacksmith department are great labor savers in the way of producing forgings of all kinds. Before these tools came on the market, forgings of all descriptions were made on the anvil. Today, it is only a question of the making and manufacturing of dies to take care of the various kinds of work in our blacksmith shop. In fact, hundreds of forgings, usually made by hand, are turned out on this machine, and the output has been increased one half.

In 1885 the work in our boiler shop was crude compared with the improvements of the present day. At that time, the boilermaker was obliged to do all of his work by hand, such as the removing of side sheets, staybolts, etc. They were cut out with the hammer and chisel. The holes were drilled in the fire box, with ratchets and flat drills. The tapping of staybolts holes and similar work was done by hand. Later on, I recollect that

we had what was known as a flexible shaft which was used for the tapping of staybolts. This has all been changed in every sense of the word. Removing of firebox sheets today is done by the use of the torch, which is also used for cutting off staybolts in quite a number of shops.

The locomotives were being built larger from time to time to the present day, and consequently new methods of handling work became necessary and have been adopted. As the material in boilers is getting heavier, it is necessary to have up to date machinery, such as shears, punches, and rolls. The flanging of today in quite a number of our shops is done by hydraulic pressure. All rivets are driven by hydraulic pressure or with air hammers. This has increased the output in the boiler shop to a great extent.

At one time the welding of flues was done with a charcoal fire. As the flue was heated a man tapped the flue end with a tapper, and when brought to a welding heat, it was welded in a roller machine. The flue was then put back into the fire and swaged with a hand-swaging tool. Today, in quite a number of our shops, flues are welded with electricity, and in other shops they are welded by the use of oil furnaces, and under what is known as a Draper hammer.

In 1908 and 1909, oxweld acetylene welding was adopted for boiler work. This brought about a complete revolution in the method of boiler repairing. By the oxweld acetylene method we are welding all horizontal seams in the fireboxes, doing away with the troublesome leaky seams. Patches of all kinds in the fireboxes are also welded. I believe today that the welding process has been adopted all through the country for many different classes of work throughout the locomotive departments. About the same time electric welding came into vogue. This was used extensively for the same class of work as the oxweld acetylene welding, it being used extensively in the way of flue work, the welding of flues, beads and back flue sheets. By doing this, we get two or three times the amount of mileage from them over the old method of merely prossering and beading flues.

There has also been a radical change in the brake equipment on locomotives. In 1885 we had a vacuum brake. Today, we have a Westinghouse air brake. The makers adopted the 6-in. air pump and with the ET equipment.



# A Few Thoughts on the Treatment of Railway Ties.

By Edwin Winfield, Transportation Student, Canadian Pacific Railway.

In Canadian Railway and Marine World for November the writer saw a statement to the effect that it was not considered economical to chemically treat ties until they cost a certain amount. As he has been somewhat interested in the subject, particularly since seeing the experimental plant at the Forest Products Laboratory in Montreal, this statement set up a train of thought which will find expression in this brief analysis of the matter. It is hoped the views presented may prove of interest to the railway community.

It is evident that there is one big question in the matter, and that concerns dollars and cents. We have before us a tie, and what we want to know concerning it is, if the tie were treated before being put in the track, would we be further ahead financially, in the final analysis, than if it were put in untreated? In order to answer this question in such a way that we can feel our answer to be correct and based on good reasoning, we have to make a study of all the contributing factors; then, having done so and summarized the results of our enquiries along different lines, we are in a position to answer it.

Before proceeding, let us examine this treating proposition and see just what the treating is supposed to accomplish and how it does it. It is not supposed to add strength to resist mechanical wear, or make the tie physically stronger; it is supposed to make the tie better able to resist decay. Decay of wood is but the work of bacteria and fungi, which low forms of life, with a few exceptions, are unable to attack the living tree, but certainly thrive on the dead timber. They eat away the wood fibre, and the wood becomes rotten; it has decayed. Heat, air, food and moisture are necessary for the fungus to keep on living. If moisture could be kept out of the wood entirely, the fungus would die, but this is a difficult matter. If a poisonous substance is injected into the wood, the fungus dies. The ideal tie preservative, then, is one wherein a poisonous substance can be made to penetrate far into the wood. Having thus penetrated, it should adhere closely to the wood fibres and cells, act to the exclusion of moisture, and be not easily washed out of the wood, with cost right in proportion to results.

It is well known, particularly to those of us who have made a study of the thing from behind a track shovel or tamping bar, that ties in the track are rendered useless in one of two ways. These are: (1) Failure caused by the tie starting to decay, which softens it and renders its powers of resistance to wear and tear less. (2) Failure caused by wear and tear, as "rail-sawing," re-driving of spikes, splitting, crushing of fibres, etc., without decay having set in.

Our first line of enquiry deals with the causes necessitating the removal of the tie from the track. It will be at once appreciated that there will be many factors contributing to the result of our enquiry along this particular line, among which may be mentioned the kind of ballast, spacing of ties, volume of traffic, drainage, climatic conditions, etc. Just at this point, though, let us assume that in a stretch of track where conditions as above are similar, we have ties made from two or three kinds of wood. On observation, it will likely be found that one kind of

tie has always to be taken out, not because it is smashed and crushed through the effects of the wear and tear of traffic in itself, but because it has become so badly decayed that it could not stand this wear and tear at all. On the other hand, another kind may have a tendency to split and sliver, while quite sound as to decay; a third kind may be so crushed and cut, while not decayed at all, that its removal is imperative.

Suppose a tie which we may designate as tie A, is always found to fail from wear, and it thus fails before decay has set in. Evidently, it would not pay to treat that tie; treating it would not prolong its life, as it is worn out before it decays anyway. But suppose tie B is always found to have its failure due to decay in the first instance. We are not in a position to state that it would pay to treat that tie; we are able to say that it might pay to treat it. On the testimony of the roadmaster and some of the section foremen, it is determined that tie B has an average life of seven years in the piece of track we are considering. Another man comes along and produces facts and figures to show that if that tie had been treated with creosote, it would not have decayed, under identical track conditions, for 14 years. It is agreed though, as the result of experience, that the tie, (thus treated or not) would wear out, under those track conditions, in 12 years, 2 years before it would have to be removed because of decay. It is stated that it would cost to treat the ties, in the quantity we want them, 36c each, and we are then in a position to find out if it would pay to treat the tie as follows, also knowing the untreated tie costs 80c in the track.

There is a hole in the track where a good tie must be placed and a good tie must be kept there. Our object is to keep a good serviceable tie in that hole in the track, forever, at the least expenditure in dollars and cents. In order to find out what tie is going to do the business most economically, there must be considered: (a) First cost of the tie in the track; (b) life of the tie; (c) interest value of money; (d) cost of renewal, assumed equal first cost. Now suppose that, having put in a tie, we start a little sinking fund, such that, when it comes time to renew the tie, the accumulation of our contributions to this little sinking fund will pay for the new tie and the cost of putting it in. The yearly expense attached to keeping that hole in the track properly filled, then, will be, first, the yearly interest on the first cost of the tie, and second, the yearly contribution to this sinking fund. The tie which does the business satisfactorily, and for which this sum is the smallest, will be the best tie to use.

Let S be the first cost of a tie. R the amount of \$1 in one year; if the interest rate is 5%, R equals \$1.05. A be the amount of our annual deposit in the fund, n the number of years the tie lasts.

The yearly interest on first cost is  $SR - S$ . A is equal to  $S \left( \frac{R-1}{R^n-1} \right)$

The total yearly expense, equal to yearly interest on first cost plus the yearly contribution to sinking fund, is  $S \left( \frac{R^{n+1}-R^n}{R^n-1} \right)$

and the tie, treated or untreated, for which this sum is a minimum, is the most economical tie. The cost of treating, of course, is figured into the first cost of the tie.

Interest per year =  $SR - S$ . Amount of 1st payment in sinking fund at end of n years =  $AR^n$ ; amount of second payment =  $AR^{n-1}$  and so on, and the accumulated amount of all our yearly payments

$$= A \left( \frac{R^n-1}{R-1} \right) \therefore A \left( \frac{R^n-1}{R-1} \right) = S.$$

$$\text{or } A = S \left( \frac{R-1}{R^n-1} \right)$$

and total yearly expense = yearly interest + yearly contributions to sinking fund,

$$= SR - S + S \left( \frac{R-1}{R^n-1} \right) = S \left( \frac{R^{n+1}-R^n}{R^n-1} \right)$$

$$= \frac{SR^{n+1} - SR^n}{R^n - 1} = S \left( \frac{R^{n+1} - R^n}{R^n - 1} \right)$$

These calculations, of course, do not take into consideration the changes in price which will doubtless take place between renewals, but on the assumption that increasing values will be approximately proportional, this appears as good a way to investigate the subject as any.

The tie above mentioned costs 80c in the track untreated. It lasts seven years and fails because of decay. It costs 36c to treat it, making its first cost \$1.16. It then lasts 12 years and has to be removed because it is worn out. By making use of the above formula we see that the annual expense of keeping the untreated tie in the track is 13.6c, and the annual expense of keeping the treated tie in the track is 11.6c, and hence it is evident that the treatment of the tie in question would be an economical proposition.

Now suppose that we have another tie, of the same wood, but this time a no. 2 tie, instead of a no. 1. Untreated, its life is seven years, it still being rendered useless through decay, and not wear. At first sight it would appear good business to buy no. 2 ties, but more will have to be used and handled. The creosote treatment, with the same amount of creosote injected per cu. ft. of timber, will keep decay away just as long, but the tie will wear out in nine years. Say the first cost untreated is 70c in the track. If the tie were treated, its first cost would be 70c plus 36c, or \$1.06. The annual expense for keeping the tie in the track filled with untreated ties will be 11.9c, and with treated ties it will be 15.4c, so that it would evidently be poor policy to treat this tie as the no. 1 tie was treated.

Suppose that experience has indicated that the use of suitable tie plates would add two years to the life of such a no. 2 tie; that the tie plates cost 30c a pair, and are worth 20c when the tie is done. Would it be economical to treat such a tie with tie plates on it? The net cost of the plates adds 10c to the first cost of the tie, but the annual interest on the tie plates is 5% of 30c, or 1.5c. First cost untreated is 70c plus 10c, or 80c. Its life untreated is still seven years, as it fails through decay; it might last a little longer because of the tie plates, but once it begins getting rotten, nothing will help it much. The annual expense of keeping the hole in the track filled with untreated ties is 13.6c plus 1.5c, or 15.1c. First cost treated tie is 70c plus 36c, or \$1.16, and annual expense is 14.7c plus 1.5c or 16.2c.



Evidently, it would not be economy. But this degree of treatment will keep the tie from rotting for 14 years; the time it takes to wear it out is only 11 years, and it may be that a treatment which will keep decay away for 11 years can be secured for 26c a tie. The annual expense of the untreated tie, we saw, was 15.1c. First cost of treated tie is 70c plus 10c plus 26c or \$1.06, and the annual expense figures out to 13.4c plus 1.5c or 14.9c, so it seems that it would be a small saving to so treat that class of tie when used with tie plates.

Calculations concerning all kinds of ties can be made as above, the basis of such calculations must be the long experience of practical trackmen, combined with the knowledge of processes, results, and costs of men in the wood preserving business. The difference of a couple of cents as above shown may appear paltry and insignificant, but when the difference amounts to 5c or so on a single tie, and we are considering some millions of ties, the potential value of reasoning along the above lines is evident. The above method of analysis could of course be used as between two kinds of ties, both of which it is intended to use untreated, for example, to those between a 60c tie good for six years and a 75c tie good for eight years. It may also be combined with considerations of safety and those other factors which go to make up general desirability, in such a case as the question of tie plating on tangents. Ties without plates may, as indicated by experience, be good for five years, and for eight years with them, and the above method of calculation, modified as required, would serve to demonstrate the existence or non-existence of an economy.

The line of enquiry just concluded, then, shows us a good way to calculate as to whether it will be a paying proposition to treat a certain kind of tie which is going to be used under a certain set of conditions, as regards traffic, ballast, drainage, use or non use of tie plates and so on. But in order to thus calculate, we assumed the possession of a lot of information concerning the performance of the tie treated and untreated; our next line of enquiry will deal with the securing of the requisite information upon which to base calculations.

It is evident that the first knowledge that it is necessary to secure concerns the past performances of untreated ties under all the varying track conditions, and it would seem that a systematic series of questions and answers, covered by reports from section foremen to roadmasters, and from roadmasters to the man in charge of the matter, would lay clear the records of different classes of ties. A compact and simple series of questions concerning ties removed from track could be drawn up for each section foreman to answer, through observation, and a summary of these reports, covering the different classes of ties in service, with a striking of averages, would provide the required information. It is clear that better means of determining when each tie that has to be removed was put in the track would have to be provided than at present; also, to the eyes of many, the general impression given by observing an old tie is that it just naturally got decayed, dirty, worn out and generally undesirable and was therefore taken out. A little further examination of parts of the tie, however, will disclose just how far the process of decay was responsible for its failure, if at all, and what part mechanical wear had to play in the matter, and it is probable that the methods of making these

observations would have to be brought to the attention of some. In this country, the greater part of our ties are made from jackpine, cedar, spruce, tamarac, hemlock, fir and oak. It is evident that all of these will not make the same showing or fail from the same causes. It is evident that it will not pay to chemically treat ties which are worn out before decay sets in. It is evident that before it can be intelligently determined just what ties it will pay to treat, we must have all the information obtainable concerning the performance of all kinds of untreated ties under all kinds of conditions, and it seems that a carefully planned and simple systems of reports covering personal observations would supply that information.

The second line of information which it is necessary to secure will deal with the treating processes, costs, methods, degree of treatment, variations of cost and efficiency with degree of treatment, results of different treatments with different woods, under different conditions, and so on—a large order, truly. It would seem that the records of the results of past efforts would have to be collected and systematically arranged to as great an extent as possible; experimental test sections of track, wherein ties of different kinds, treated to varying degrees by different methods, would be the subject of the tests, would apparently be requisite, and the services of expert chemists would be required. Then, having secured information concerning the effect of the treatment of different woods used under differing conditions; having combined this with information concerning the same tie untreated, and having calculated on the basis of our complete information, we are then, and not till then, in a position to say whether, by treating our ties, we are effecting an economy in the interests of the railway and in the interests of the nation.

It is not the intent, in this paper, to discuss the relative efficiency of various methods of chemically preserving ties, but rather to indicate that there is a great deal to be taken into consideration before we can be sure that we are right in applying any of these methods. It may be of interest to state, however, that creosote oil is rapidly taking the place of zinc chloride as the most used preservative—has taken it, rather—and in some cases the two are used in combination. Similar treatment will not benefit different kinds of wood to the same degree; in fact, the age at which the tree was cut, the method and length of time used in seasoning, and the time of year the tree was cut, all have their effect on the internal structure of the cells and fibre of the timber, and therefore on the degree of success attending the chemical treatment. In Europe, it is estimated that over four-fifths of the wooden ties in use are treated with some kind of chemical preservative.

The thing most worthy of notice is that our timber resources are not what they are popularly supposed to be, or anything near it, and that it is in the interests of the community at large that what remains should be conserved as much as possible. But in that attempt to conserve, it is necessary to proceed correctly. The whole thing is a matter of dollars and cents; if by chemically treating a tie which lasts only half as long now as it can be made to last, and if it will pay the railway to do so, it is certainly in the interests of the community at large that this be done. But if by going ahead and indiscriminately treating all ties over a certain value, and thereby throwing

away the cost of the treatment in many cases, the loss is one borne not only by those individuals directly concerned, but through them, by the country at large.

## Service Department for Railways Recommended.

L. C. Fritch, formerly General Manager, Eastern Lines, Canadian Northern Ry., Toronto, and now General Manager, Seaboard Air Line Ry., Norfolk, Va., has written the Railway Age Gazette as follows:

For some time I have considered suggesting the creation of a new department on railways, to be known as the "department of service." Service is of paramount importance in an organization and my past experience leads me to believe that if the railways made it the business of some one department to see that service of the highest order was rendered, much criticism directed against the carriers would disappear.

The present organization on most lines does not provide a clearing house where important matters can be sifted and reduced to concrete form for the information of the president and the board of directors. A department with a competent, responsible head, therefore, would fill this need and result in a saving in expense and in added efficiency in service to the public, which cannot be over estimated. After 30 years experience in railway work I am firmly convinced of the need of the further application of business principles to the operation of our railways, and to this end I suggest the creation of a business department the organization and duties of which are outlined as follows:

### DEPARTMENT OF SERVICE. Organization.

#### Executives—

- 1 Vice President.
- 1 Assistant to Vice President.
- 1 Chief clerk.
- 6 Clerks.
- 3 Stenographers.
- 1 File clerk.
- 1 Assistant file clerk.
- 1 Messenger.

#### 16

#### Inspection Bureau—

- 1 Chief inspector.
- 1 Inspector, maintenance of way.
- 1 Inspector, maintenance of equipment.
- 1 Inspector of transportation.
- 1 Chief clerk.
- 3 Clerks.
- 3 Stenographers.
- 1 File clerk.
- 1 Messenger.

#### 13

#### Statistical Bureau—

- 1 Statistician.
- 1 Assistant statistician.
- 4 Clerks.
- 3 Stenographers.
- 1 File clerk.

#### 10

#### Labor Bureau—

- 1 Negotiator.
- 1 Assistant negotiator.
- 1 Clerk.
- 1 Stenographer.

#### 4

#### Summary—

- 16 Executives.
- 13 Inspection bureau.
- 10 Statistical bureau.
- 4 Labor bureau.

43 Total number of officers and employees.

### OUTLINE OF WORK.

1. Expenditure supervision—
  - (a) Allotments to departments and sub-departments on monthly expenditure.
  - (b) Supervision over all new-work expenditures.
  - (c) Audit of vouchers and payrolls.
2. Efficiency methods—
  - (a) Analysis of present practices and methods.
  - (b) Improvements in methods and practices.
  - (c) Reduction in waste and non-essential methods and operations.



3. Vital Statistics—
  - (a) Elimination of all except important statistics.
  - (b) Issue of vital set of statistics to each department and sub-departments.
  - (c) Comparative statistics of other roads.
4. Organization outlines—
  - (a) Establishment of organization and lines in various departments and sub-departments.
  - (b) Co-ordination of organizations in various departments.
  - (c) Co-ordination in all departments.
5. Reports and records—
  - (a) Establishment of standard reports and records.
  - (b) Elimination of unnecessary reports and records.
  - (c) Use of reports and records.
6. Labor adjustments—
  - (a) Analysis of schedules and comparison with other lines.
  - (b) Grievance adjustments.
  - (c) New schedule matters.
7. Analysis of results—
  - (a) Concrete analysis of operating results.
  - (b) Comparative analysis with other lines.
- (c) Fixed standard to be attained in operation.
8. Foreign relations—
  - (a) Cultivation of friendly relations with connecting lines in all departments.
  - (b) Analysis of methods used on foreign lines.
  - (c) Co-ordination of operation at common points with other lines to eliminate waste.
9. Publicity matters—
  - (a) Determination of extent of advertising and its results.
  - (b) Co-operation with federal, state, municipal and other officers to create friendly relations.
  - (c) Education of the public on railway matters.
10. Recommendations—
  - (a) Resume of past month's operations with comments and explanation.
  - (b) Monthly reports for all departments on program for succeeding month with recommendations on important operating matters.
  - (c) Monthly meetings of heads of departments and sub-departments for general discussion of vital matters relating to company's interests.

## Rates on Grain Milled at Montreal in Transit.

The following report by Jas. Hardwell, Chief Traffic Officer, Board of Railway Commissioners, has been adopted by the board as its decision in the matter therein referred to:—This is an application of the Montreal Board of Trade, on behalf of Ogilvie Flour Mills Co., Dominion Flour Mills Co. and St. Lawrence Flour Mills Co., for the maintenance of the arrangement whereby the C.P.R. carried western grain, either all rail or ex lake, to products destinations on the Intercolonial Ry. via Ste. Rosalie Jct., with the milling in transit privilege at Montreal. The company sought to restrict the arrangement to its own destinations in Quebec and New Brunswick by cutting out Intercolonial stations from Mar. 3, 1917, by supplements to the various tariffs applicable. These cancellations were suspended and necessary provision made by order 25904, Feb. 26, 1917, following the hearing on Feb. 21, 1917, at Ottawa. The tariffs referred to in the order have since been superseded by others to give effect to the judgment of July 17, 1917, in the application of the railway companies for a general increase in rates on grain and grain products east of Fort William, supplementing the judgment in the Eastern rates case.

The stop over or transit charge added to the through rates was 1c per 100 lb. on the all rail grain, whether the products were for domestic consumption, or for export from Halifax, and on the ex lake grain 1c for export and 2c for domestic consumption. By order 26642, Oct. 16, 1917, the last mentioned 2c charge was reduced to 1c, so that this is now the uniform charge so far as the C.P.R. is concerned. The C.P.R. takes the position that this traffic to Intercolonial points is unremunerative, because of the rate division, and the exceptional services necessary to reach the applicants' mills.

As concerns the division of the rate, the Montreal situation is not singular. The eastern arbitraries added to the rates from Fort William, Port McNicoll, or Goderich to Montreal, are for the purpose of striking the through rates; the allocation as between the C.P.R. to Ste. Rosalie Jct. and the Intercolonial is on a percentage basis, so that it is not unusual for the C.P.R. local to Montreal to be shrunk, as explained by Mr. Flintoft, Assistant General Solicitor, C.P.R. The figures are precisely the same whether the grain be milled at Montreal or at any milling point west of Montreal, and Ste. Rosalie Jct. is the common point of transfer to the government line. If, therefore, the line earnings are unremunerative, as

claimed, in connection with the Montreal mills, they must be unremunerative in connection with all the Ontario mills, but no such claim is advanced.

The only feature that differentiates Montreal is the additional service entailed in reaching the mills. These are located on the Lachine Canal north bank siding or branch, built and operated by the Grand Trunk for itself and the C.P.R. under lease from the Crown. The C.P.R. transfers to this siding at Atwater transfer, near its Highlands station. The distance from the transfer to the Ogilvie mill is given as 5.2 miles; the distance to the Dominion mill is somewhat less, but to the other Ogilvie plant at Mill St., where Mr. Black said the bulk of the business was done, it is greater. Mr. Flintoft predicated his distance on a movement of the grain to the Outremont yard, whence to Atwater transfer the distance is stated to be 6.7 miles, making 11.9 miles in all. But the grain, whether all rail or ex lake, moves over the Smiths Falls Division, and if, instead of going directly into Sortin yard, it is taken for operating purposes to Outremont, it does not appeal to me as a movement that should properly be debited to the traffic. The out of line haul between the transfer and the Ogilvie mill, grain in and flour out, is 10.4 miles. The plan gives the distance between the transfer and Sortin as 2 miles each way; but, on the other hand, more or less shunting has to be done at all milling points after the grain gets into the terminal. Mr. Flintoft gave the actual cost of handling cars on the Canal bank branch as \$1.30 a car paid the G.T.R. for the year ended Nov. 30, 1916, or \$2.60 for the double movement. This is no doubt the result of the basis of division of costs of operation and maintenance directed in order 9759, Feb. 17, 1910.

Mr. Flintoft's estimate that three cars are required to ship out the products of two carloads of inward grain has no particular bearing, since it must, if correct, apply everywhere. Undoubtedly, the millers in question necessarily require, from the C.P.R. at least, an unusual service, for which they should be prepared to pay an adequate compensation. The board did not, of course, intend its order 26642 to settle this complaint. By items 122 and 141 of its Special Tariff of Rules and Regulations C.R.C. 3280, the company makes in certain cases an out of line extra charge of 1c a ton per mile, with a minimum as for 20 miles. Applied to the present case, this would give a charge of 1c per 100 lb., in addition to the ordinary mill stop over toll of 1c paid by all trans-

sit millers, and it would not be more even if the Outremont mileage was used. In other words, the transit charge of 2c as desired, would be continued on grain ex lake, milled for domestic consumption, and the charge for export, also for all rail domestic, would be increased from 1c to 2c. This, in my opinion, ought to be satisfactory to all parties.

Mr. Flintoft complained that this traffic was thrown entirely on his company, and I consider there is justice in his complaint. The G.T.R. has no milling in transit arrangement in connection with the Intercolonial, although its local facilities are superior to those of the C.P.R. I mentioned in my memo of Feb. 23, 1917, that the Intercolonial and G.T.R. were negotiating an arrangement and that I expected it would be consummated, but it has not been.

## Quebec Public Utilities Act Amended.

The Quebec revised statutes, 1909, article 718, clause C, enacted as follows:—"The words 'public utility' mean every corporation other than a municipal corporation, firm, person or association of persons, the business and operations authority of this province, their lessees, trustees, liquidators or receivers appointed by any court, that now or hereafter own, operate, manage or control any system, works, plant or equipment for the conveyance of telegraph or telephone messages, or for the conveyance of travellers or goods over a railway, street railway or tramway, or for the production, transmission, delivery or furnishing of heat, light or power, either directly or indirectly, to the public."

In 1911, this clause was amended by substituting the word "passengers" for "travellers," and by the addition of "water." The clause was further amended at the legislature's recent session by the insertion, after the word "tramway," of the words "or across or along lakes, rivers or streams."

**Flagging Signals on Double Track.**—The Board of Railway Commissioners has under consideration the matter of more adequate flagging protection on double tracks and has sent to the railway companies the following draft order which it is proposed to issue in this connection:—"On double track, where trains run to the left, a yellow flag on two staffs, or a yellow light 5 ft. above rail level placed to the left side of a track, as seen by an engineer of an approaching train, with a yellow flag, or a yellow light, as a marker, placed on the opposite side of the track to be protected, indicates that the track 3,000 ft. distant is in condition for a speed of but 6 miles an hour, unless otherwise instructed and the speed of trains will be controlled accordingly. A green flag, or a green light, placed beside the track, on the left hand side, as seen by an engineer of an approaching train, at a point beyond the slow track, indicates that full speed may be resumed." Railway companies are asked to file with the board by May 8 any comment they may wish to make thereon.

**Freight Train Crews on Electric Railways.**—The Board of Railway Commissioners has asked electric railways whether, in the operation of electric freight locomotives, either switching or in road service, the crew consists of two men, the same as one a steam locomotive, or only one man to a locomotive.



## Birthdays of Transportation Men in May.

Many happy returns of the day to:

Jas. Bain, General Superintendent, Halifax & South Western Ry., Bridgewater, N.S., born at Pictou, N.S., May 24, 1860.

W. R. Baker, C.V.O., ex-Secretary, C.P.R., Montreal, born at York, Eng., May 25, 1852.

B. A. Bourgeois, Assistant to Comptroller and Treasurer, Canadian Government Railways, Moncton, N.B., born there May 24, 1869.

G. S. Cantlie, ex-General Superintendent of Car Service, C.P.R., Montreal, now in military service with Canadian Expeditionary Force, born at Montreal, May 2, 1867.

B. T. Chappell, Superintendent, Pacific Division, Canadian Northern Ry., Vancouver, B.C., born at Charlottetown, P.E.I., May 1, 1878.

R. Crosby, Car Foreman, Canadian Northern Ry., Moose Jaw, Sask., born at Hawick, Scotland, May 2, 1886.

N. R. DesBrisay, District Passenger Agent, C.P.R., St. John, N.B., born at Minneapolis, Minn., May 18, 1888.

M. Donaldson, M.Can.Soc.C.E., ex-Vice President and General Manager, Grand Trunk Pacific Ry., now of Ottawa, Ont., born near Edinburgh, Scotland, May 1, 1851.

A. E. Duff, ex-District Passenger Agent, G.T.R., Toronto, now of Winnipeg, born at Sherbrooke, Que., May 1, 1872.

G. C. Dunn, Division Engineer, Grand Trunk Pacific Ry., Winnipeg, born at Quebec, May 13, 1862.

M. A. Fullington, A.M.Can.Soc.C.E., ex-Superintendent, Smiths Falls Division, Quebec District, C.P.R., now of R. W. Hunt & Co., Montreal, born at Johnson, Vt., May 12, 1880.

G. E. Graham, General Manager, Dominion Atlantic Ry., Kentville, N.S., born May, 1870.

G. H. Hedge, General Master Mechanic, Western Lines, Canadian Northern Ry., Winnipeg, born at Neath, Wales, May 26, 1865.

G. A. Hoag, Superintendent, Superior District, Ontario Division, Canadian Northern Ry., Hornepayne, born at Walters Falls, May 31, 1866.

J. Irwin, Superintendent, Division 3, Western District, Canadian Northern Ry., Edmonton, Alta., born at Clinton, Ont., May 28, 1866.

S. McElroy, Trainmaster, Canadian Northern Ry., Rainy River, Ont., born at Lindsay, Ont., May 1, 1875.

W. Marshall, Assistant Manager of Telegraphs, C.P.R., Winnipeg, born at Garden Island, Ont., May 18, 1859.

J. N. Murphy, Roadmaster, C.P.R., Brandon, Man., born at Mooretown, Ont., May 10, 1879.

A. V. Redmond, Division Engineer, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., born at Kingston, Ont., May 16, 1879.

A. C. Shaw, Passenger Department, C.P.R., Montreal, born at Detroit, Mich., May 12, 1865.

W. H. Snell, General Passenger Agent, C.P.R., Montreal, born at Palmyra, Neb., May 23, 1872.

C. T. Stanger, District Freight Agent, C.P.R., Saskatoon, Sask., born in Rutland, Eng., May 11, 1887.

W. Stapleton, District Passenger Agent, Canadian Northern Ry., Saskatoon, Sask., born at Bristol, Eng., May 20, 1884.

E. Tiffin, General Western Agent, Canadian Government Railways, Toronto born at Hamilton, Ont., May 5, 1849.

J. H. Walsh, General Manager, Quebec Central Ry., Sherbrooke, Que., born at Quebec, May 12, 1860.

H. K. Wicksteed, B.A.Sc., M.Can.Soc.C.E., Consulting Engineer, Canadian Northern Ry., Toronto, born at Quebec, May 25, 1855.

C. L. Wilson, Assistant Manager, To-

ronto & York Radial Ry., Toronto, and President, Canadian Electric Railway Association, born at Boston, Mass., May 23, 1871.

A. O. Wolff, Resident Engineer, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at Copenhagen, Denmark, May 14, 1887.

James Yeo, ex-Roadmaster, Intercolonial Ry., Riviere du Loup, Que., born at Bideford, Devonshire, Eng., May 1, 1830.

## Canadian Pacific Railway's Honor Roll 33.

Acheson, Thos. Stewart

Allan, Adam

Anderson, Albert A.

Anderson, Alex.

Ashfield, Albert John

Astwood, Harold Frith

Banks, Robert

Bascomb, Herbert A.

Bassey, Wm. John

Beaumont, Albert G.

Bennett, George

Boorman, Hugh Bernard

Boyles, Sidney Chas.

Brennall, Frederick

Brophy, Frank L. A.

Bullock, William A.

Burgess, Thomas Herbert

Burleigh, James Harold

Bush, Seth

Buxton, Ernest

Campbell, Milton F.

Carey, John Wesley

Chinn, Percy

Cowdery, Fred'k John

Craeknell, Edward

Crocker, George H.

Cunningham, Chas. Hugh

Dawson, Albert

Dayton, Fred. Arthur

Devine, John

Dobson, Gordon

Doolan, Thos. Patrick

Ewell, William Ritchie

Ferguson, Henry Clark

Ferguson, John Melville

Ferris, Albert H.

Field, Horace Sidney

Finch, Henry Adams

Ford, Henry

Forrest, John Clelland

Forrest, Robert John

Fraser, Philip Geo.

Gilmour, Duncan J. McK.

Grant, John G. G.

Green, Albert

Green, Albert

Green, Henry

Green, Thomas

Gunderson, Louis

Haddleton, William

Hale, Jr., Thomas

Hardie, Joseph

Harland, Hugh Baxter

Harrison, Robert Hampton

Healy, Patrick Joseph

Hood, James

Hunter, Robert N.

Kelly, John

Kelly, Walter

Lessard, Louis

Liggins, Russell T.

Longworth, John W.

McCoy, John

McDonald, John

McElroy, David S.

MacGranachan, Wm.

Malcolmson, George H.

Marsh, John

Michie, Victor

Middleton, Ronald

Mills, Clifford Waldon

Mowbray, John

Payne, Oliver

Pederson, Wm. Henry

Peterson, Frank Victor

Polyblank, Thomas H.

Purnell, Walter

Raynor, Bertram

Sims, William

Smith, Robt. Kirby

Spencer, Gordon

Stewart, Harry Raymond

Swinden, Frederick

Tennant, George Harvey

Vanalsteyne, James Clifford

Vosper, Edward Agar

Waldon, George Cecil

Ward, Frederick

Whitehouse, Walter

Wilson, Henry

Wright, Murray LeRoy

Zakrinson, Anders

Gen. Agricultural Ag't

Billar

Junior clerk

Locomotive man

Rivet boy

Clerk

car heat and iceman

Stower

Brakeman

Fitter's helper

Brakeman

Engineer

Agent

Car repairer

Stenographer

Clerk

Baggage man

Towerman

Driller

Freight carpenter

Locomotive fireman

Trainman

Clerk

Clerk

Conductor

Locomotive fireman

Stockkeeper

Boilermaker's apprent.

Wiper

Slinger

Assistant

Car checker

Clerk

Pipefitter's helper

Call boy

Clerk

Clerk

Clerk

Shed foreman

Clerk

Cashier

Locomotive fireman

Clerk

Boilermaker's helper

Helper

Machinist

Locomotive fireman

Brakeman

Engineer

Car repairer

Wiper

Draftsman

Trimmer

Clerk

Waiter

Brakeman

Fitter

Trainman

Fireman

Baggage man

Clerk

Clerk

Locomotive fireman

Foreman

Laborer

Apprentice

Gripper

Engineer

Wiper

Watchman

Pipe fitter's helper

Car repairer

Brakeman

Clerk

Stower

Apprentice

Section man

Porter

Clerk

Operator

Trainman

Drill boy

Wiper

Trainman

Assistant agent

Clerk

Floorman

Inspector

Fitter's helper

Engineer

Locomotive fireman

Laborer

Winnipeg

Vancouver

Vancouver

Souris

Carleton Place

Fort William

Toronto

Winnipeg Terminals

Minnedosa

West Toronto

Moose Jaw

Fort William

Romford Junction

Winnipeg

Montreal

Angus

Renfrew

Calgary

North Bay

West Toronto

Regina

Havelock

Moose Jaw

Calgary

Fort William

Victoria

Calgary

Brandon

Winnipeg

Winnipeg

Montreal

McAdam Junction

Calgary

Coronation

Lambton

Calgary

London

Angus

Angus

Minnedosa

Moose Jaw

Souris

North Transeona

East Calgary

Montreal

West Toronto

Montreal

Montreal

Minnedosa

Nelson

Winnipeg

North Bay

Lacombe

Brandon

Saskatoon

Moose Jaw

Ogden

Basswood

Ogden Shops

Lethbridge

Weyburn West

Calgary



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta & Great Waterways Ry.**—The Alberta Legislature has extended for one year the time within which this railway is to be completed to McMurray.

The Alberta Railways Department report for 1917, shows that of the \$7,400,000 realized by the sale of the guaranteed bonds, \$6,353,658 had been paid over to the company in respect of work completed, and that the "fair original cost" of the line was \$6,121,164.

Replying to a question recently, the Premier informed the Alberta Legislature that, owing to difficulties with the grade on the last 14 miles into McMurray, a definite time could not be fixed for completing the line there. The contractors had promised to get the line into the town as speedily as possible.

**Alberta-Hudson Bay Ry.**—A deputation waited on the Alberta Government recently and asked a provincial guarantee of bonds towards the construction of this projected railway southwesterly from Calgary. The interests behind this charter are centered in what is known as the Grain Belt Co., of which F. Crandall, Calgary, is the representative, and the proposed route of the railway is northeasterly from Coutts, on the International Boundary between Alberta and Montana, via Medicine Hat, to Hilda, Alta., 175 miles. Mr. Crandall stated that some \$7,000 had been paid in on account of stock subscriptions, which had been expended upon preliminary expenses and surveys; that the farmers along the route of the proposed railway would subscribe \$5,000 a mile, and that they had already pledged themselves to the extent of \$1,000 a mile. The Premier told the deputation that there would be no subsidizing of railways this year; that in the future no subsidy would be granted any company that did not prove the possession of tangible assets, and that up to the present time the A.-H.B. Ry. had not shown the possession of such assets. It was asserted on behalf of the promoters that the construction of the line would not exceed \$12,000 a mile, but the Premier stated that the Alberta Railways Department put the minimum cost at \$20,000 a mile. (June, 1917, pg. 224.)

**Calgary & Southwestern Ry.**—A press report states that preliminary work for the construction of this newly incorporated company's railway from Calgary to the P. Burns coalfields on Sheep Creek, Alta., will be started June 1. The report also states that a supply of rails has been secured. (April, pg. 146.)

**Canada Central Ry.**—The Alberta Legislature has extended for a year the time within which the sections for which provincially guaranteed bonds have been issued, are to be completed.

The Alberta Railways Department report for 1917, shows that the proceeds of the guaranteed bonds were \$1,867,530, of which there had been paid over to the company \$1,350,347, while the "fair original cost" is placed at \$1,554,700.

The last pier of the substructure of the bridge across the river at Peace River Landing was reported to have been completed Mar. 26. (April, pg. 146.)

**Canadian Niagara Bridge Co.**—The provisional directors named in the application to the Dominion Parliament for the incorporation of a company with this title to build a bridge across the Niagara River, from a point between Chippewa and Fort Erie, Ont., to a point in the State of New York, are:—Lord Shaugh-

nessy, Montreal; J. N. Beckley, Rochester, N.Y.; E. S. Cahill, K.C., Hamilton, and W. P. Torrance, Toronto. It is apparent from these names that the bridge is proposed to be built for the Toronto, Hamilton & Buffalo Ry., the New York Central Rd., and the C.P.R. (April, pg. 146.)

**Edmonton & South Western Ry.**—The Hydro-Electric Power Co., which is developing a water power at the Blue Rapids of the Saskatchewan River, to supply power to Edmonton, Alta., has applied to the city council for an extension of time for the construction of the works. Under the agreement there was to have been expended by June 30, \$1,500,000 upon railway and other construction work; by June 30, 1920, a further sum of \$2,000,000, and the balance of the work was to have been completed by June 30, 1923. The length of line to be built is from 70 to 75 miles. In order to save its guarantee, the company is applying for the extension of time, stating that owing to the shortage of labor, the scarcity and high price of construction supplies, and the attitude of the Dominion Government as to bond issues, the works cannot be proceeded with at present. E. W. Bowers, Chief Engineer, reported that all the work possible to be done without the railway had been done, and that all preliminary work possible for the construction of the railway had been completed. The city council decided, April 10, that the utilities committee look into what had been done and report. (Mar., 1916, pg. 182.)

**Edmonton, Dunvegan & British Columbia Ry.**—The Alberta Legislature has extended for a year the period within which the sections of the line under construction, and for which provincially guaranteed bonds have been issued, may be completed.

The Alberta Railways Department report for 1917, shows that the proceeds of the guaranteed bonds for the main line were \$7,369,900, and for the Grand Prairie Branch, \$917,040, of which there had been paid over to the company, \$7,018,797 and \$544,806, respectively, the "fair original cost" of the lines being stated as \$8,715,562 and \$810,363.

Application has been made by J. D. McArthur, President, for a subsidy for 425 miles of line. The company has built a line from just outside Edmonton to the Spirit River, 370 miles, with a branch to the Grand Prairie country, 54.8 miles; while its subsidiary line, the Central Canada Ry., has built a line from McLennan to the Peace River, 49.8 miles. A Dominion subsidy was voted in 1910 in aid of the construction of 110 miles of railway from Edmonton towards the Peace River, in favor of the Pacific Northern & Omineca Ry., and it is stated that this subsidy was assigned by the P.N. & O. Ry. to the E.D. & B.C. Ry. Be that as it may, no contract has been entered into with the Dominion Government for the building of that line.

The Edmonton City Council has referred a communication from the company re the operation of gasoline cars on certain of the Edmonton Radial Ry. lines, to the public utilities committee for consideration. It was stated in the letter from W. R. Smith, Chief Engineer, that the company's terminals were situated five miles from First Ave., making passengers lose a good deal of time. The company proposed to make a connection from the Grand Trunk Pacific Ry. to connect its own line to the Edmonton Radial Ry., and to run cars to 100th St. These cars would

be run, not only to connect with trains on the E.D. & B.C. Ry., but would be run over that line to Westlock, mileage 52, to carry milk and other produce into the city. The company would pay either a fixed rental or a rate per passenger carried. As a result of the consideration by the committee, a press report of April 15 states that an arrangement has been made whereby the E.D. & B.C. Ry. trains will run over the Grand Trunk Pacific Ry. tracks to Nelson Ave. and 21st St., where a temporary shelter will be provided for passengers use, and for the transfer of freight. It is proposed to provide a short spur on 121st St. for the E.D. & B.C. Ry. (April, pg. 146.)

**Grand Trunk Ry.**—We are officially advised that while a proposal for the erection of a new locomotive house at either Brockville or Prescott, Ont., is under consideration, nothing definite has been decided upon. (April, pg. 146.)

**Grand Trunk Pacific Ry.**—The report of the late Sir Collingwood Schreiber, who was Chief Engineer for the Dominion Government in connection with the construction of this railway, for the year ended Mar. 31, 1917, as published by the Railways Department recently, shows that the total expenditure up to Dec. 31, 1916, on the prairie section, 915 miles, had been \$37,910,534.88, and on the mountain section, 833 miles, had been, \$93,160,195.76, a total of \$131,070,730.64. He estimated the value of the work remaining to be done to comply with the acts of Parliament, the contracts and the specifications, to be \$2,297,500 on the prairie section and \$2,334,385 on the mountain section. (April, pg. 146.)

**Hudson Bay Ry.**—A letter was read at a meeting of the Yorkton, Sask., Board of Trade, on April 3, from J. F. Reid, M.P., stating the Minister of Railways had made a definite promise that track would be laid this season on the final 90 miles of the line from Pas to Port Nelson, Man. We are, however, officially advised that nothing can be said definitely upon this matter, as it depends entirely upon what supply of steel rails may be available. (Mar., pg. 98.)

**Intercolonial Ry.**—A press report states that a contract has been let to P. G. Clarke, Summerside, P.E.I., for the erection of an express building at Sackville, N.B., at a cost of \$6,000.

The original station building at Moncton, N.B., used since 1896 as the train make-up office, was partially destroyed by fire April 15. (Mar., pg. 98.)

**Kettle Valley Ry.**—A press report states that a contract has been let to W. P. Tierney, Vancouver, for building a 14 mile branch from Princeton, to the Copper Mountain, in connection with the opening up of mining operations there by the Canada Copper Co., which is reported to have made a bond issue of \$2,500,000 for development purposes. (Mar., pg. 99.)

**Lacombe & Blindman Valley Electric Ry.**—The Alberta Legislature has extended to the end of this year the time within which this railway from Lacombe to Rimbey is to be completed. Though called an electric railway, it is not one.

The Alberta Railways Department report shows that the proceeds of the guaranteed issue of bonds for this line realized \$256,659, which was paid over to the company, and that the "fair original" cost of the line was \$408,958. The line is practically entirely graded, track is laid for some miles to beyond Bentley, and a train



service was being maintained up to Mar. 30, when a gasoline-electric car was put on, giving a daily passenger service, while a steam train is used for any additional service that may be required.

Reference was made to this report in the Alberta Legislature recently by the Premier, who is reported to have said that it might be necessary for the government to take over and operate the line, but it would not be a good example of government ownership, on account of the bad financial shape in which the company's affairs were.

W. D. Brown is Chief Engineer of the railway, and H. Warner is engineer in charge on behalf of the Alberta Government.

**Logging Ry. on Dean Inlet.**—A Vancouver press report states that a logging railway is to be built for the Pacific Mills, Ltd., from Ocean Falls, on Dean Inlet of Portland Canal, inland.

**Naas & Skeena River Ry.**—The British Columbia Minister of Railways, under the provisions of the B.C. Railway Act, has issued a certificate granting the company an extension of time for a year within which it may start the construction of its projected railway from Nasaga Gulf, or Naas Bay, or other point on Portland Inlet, along the Naas River to the Indian village of Ayance, thence to the Blackwater River Valley, to the outlet of Blackwater Lake by either of alternate routes, and thence to the Skeena River, and up the valley of that fork to its head. J. G. Scott and A. E. Doucet, Quebec, are among those interested. (June, 1917, pg. 225.)

**Pacific Great Eastern Ry.**—The entire length of the line from Squamish to Clinton, B.C., 167 miles, was reopened for traffic April 8, and a regular service is being maintained. Arrangements are being made by the British Columbia Government for resuming construction on the line, but, until the reports of the engineers who are looking over things have been made and considered, it is not possible to say what will be done.

Arrangements for resuming traffic on the section of the line out of North Vancouver, between Ambleside and Whytecliffe, were completed April 12, and it was reported that it was hoped to restart operations out of North Vancouver by May 10. In order to do this, it is necessary to restore the Capilano bridge, which has given a great deal of trouble since the line was built. Tenders for a temporary bridge were received to April 18, and the Premier stated, April 9, that a permanent bridge would be built as soon as possible. (April, pg. 156.)

**Prince Edward Island Ry.**—It is said that the Minister of Railways has not reached any definite conclusion upon the question of standardizing the P.E.I. Ry. gauge. While it is contended that the alteration of the present narrow gauge to standard would work out advantageously, particularly since the putting into operation of the car ferry between Port Borden, P.E.I., and Cape Tormentine, N. B., there are a number of other matters which have to be taken into consideration before a decision is reached. Since the possibility of standardization was definitely recognized, the department has authorized the carrying out of betterments which will make the work of standardization easier if it is decided to do it. During the 1916-17 fiscal year, 21,715 new ties were put in, and as has been the case in some previous years, a large proportion of these were of standard length, thus making a certain amount of provision for

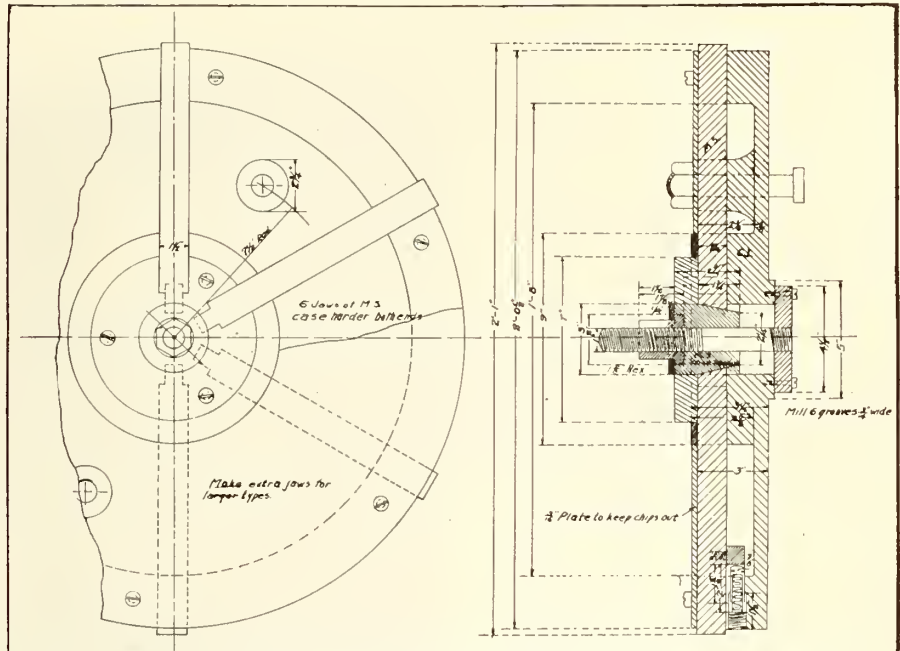
gauge widening; 5½ miles of ditching was done, and 9.2 miles of line were re-ballasted. The work done during the year also included the resurvey of 181 miles of the line. The work to be done during this year, for which a certain provision has been made in the estimates, covers further ditching, some widening of cuts, and other work, which is calculated to be of use in connection with the standardizing of the gauge. (April, pg. 146.)

**Quebec & Saguenay Ry.**—A press report stated on April 12 that it was expected that track would be laid to Baie St. Paul, Que., by May 31, and that by Aug. 31, track would be laid to Murray Bay, 56 miles from St. Joachim, the starting point. Work for the season has been opened up and quite a number of

made for it in the 1917 estimates. Owing to the scarcity of labor and the high cost of materials, the present is not an opportune time to undertake the work. Construction can be started as soon as a decision to build the branch is made. The votes for this year provide \$150,000 for the construction of this branch. (April, pg. 147.)

### Self Centring Chuck for Centring Tires.

The accompanying illustration shows a self centering chuck, which is used at the C.P.R. shops at Ogden, Alta., for centering tires after they have been bored out,



Self Centring Chuck for Centring Tires.

men are being employed. A contract for station end other buildings is reported to have been let. (Jan., pg. 12.)

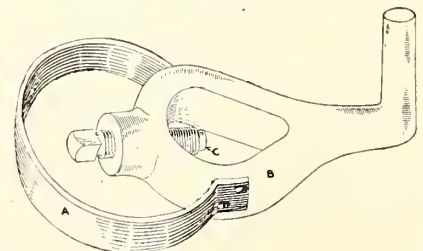
**Timiskaming & Northern Ontario Ry.** S. B. Clement, Chief Engineer and Superintendent of Maintenance, in his annual report to the Commissioners, refers to the revision of the main line between North Bay and Liskeard. Progress was made on three sections, that between mileage 54 and 55 has been partially completed by the railway's road department forces. Tenders were asked for the revision of the two other sections, mileage 63 to 65.5 and mileage 80.8 to 81.2, and a contract was let to the Port Arthur Construction Co. for the work at a cost of \$58,973.25 on estimate quantities. The contractors experienced great difficulty in obtaining labor, but good progress was made on the first section, and half the grading was completed on the second section during the 1917 construction season. It was expected to have the new pieces of line ready for tracklaying by July 1.

Surveys have been made for a branch line from Swastika, on the main line, to serve the Kirkland Lake gold camp. The location gives a line of 6 miles, passing close to all the producing mines. The country through which it would run is comparatively rough, and as the traffic will probably never be heavy, gradients of 1.5% and curvature up to 12 degrees have been used. The estimated cost of construction at the time the survey was made was \$125,000, and provision was

and grooved on one side, for the mansell ring, so that the second operation of grooving for the mansell ring on the opposite side can be gone on with without loss of time by re-setting. Different length of jaws are used for the different sizes of tires.

### A Safety Lathe Dog.

The accompanying illustration shows a means of making the ordinary lathe dog a safety one. A piece of cold-rolled steel A is bent in circular form with its ends flattened. These flattened ends are pro-



vided with holes to receive screws for attachment to the lathe dog B as shown. This steel piece is of such size that the clamping screw C is permitted to clear the opening in the dog which receives the stock.—F. Fruhner in American Machinist.



# John G. Sullivan's Presidential Address to the American Railway Engineering Association.

At the opening of the American Railway Engineering Association's convention in Chicago recently, the President, J. G. Sullivan, M.Can.Soc.C.E., Chief Engineer, Western Lines, C.P.R., gave an address, from which the following are extracts:—

A study of the railway situation in the United States for the past 30 years indicates that the boom year for construction was in 1887, when nearly 13,000 miles of new railway were constructed. In the years 1894 to 1897 this rate of construction dropped to less than 2,000 miles a year. From 1900 to 1907 the average was about 5,000 miles per year. It gradually decreased from that time until 1917, when the construction was less than 1,000 miles. In Canada, the rate of construction from 1901 to 1904 averaged about 500 miles. This rate gradually increased until 1913, when it reached a maximum of 3,000 miles. It has dropped from that time until the present and the track mileage last year was actually decreased, on account of some lines being taken up; the steel being shipped to France.

During the past ten years we have not suffered in Canada through adverse railway legislation or regulation, but, on the contrary, the people and the country are suffering from the encouragement of legislation to unnatural rapid development, resulting in the expenditure of enormous sums of money and the building of unnecessary railways; railways that cannot for the present, or any time in the near future, pay operating expenses, to say nothing of paying interest on the investment.

The annual report of the Railways Department to Mar. 31, 1916, shows that for the nine years from 1917 to 1916, the government expended over \$22,000,000 a year on government railway construction. Their working expenses during that period have exceeded their revenue by \$2,000,000, and at present the working expenses are considerably over \$1,000,000 a year greater than the revenue. In addition to this expenditure made directly by the government, the federal and provincial governments have guaranteed the interest on bonds up to between three-quarters of a billion and one billion dollars. During the same period they also granted large sums of money in the way of subsidies to privately owned railways; some provincial governments going so far as to get rich contractors to organize railway companies (tempted no doubt by the bait of profits on construction) to build railways where the present railway companies of Canada could not be tempted to build, even though the bonds might be guaranteed by the government. Would it therefore be any great surprise, if assuming this great world war was not being carried on, public opinion regarding railways as represented by legislation would not show signs of modification in Canada and if we should hear threats of anti railway legislation of the most radical character? Nevertheless, as already explained, the railway troubles of Canada are not due any more to the efforts of railway promoters and builders than to an uninformed and over-sanguine public opinion. Is it not logical to assume that similar boom conditions existed in the United States prior to 1887? Then came the Interstate Commerce Commission; followed by numerous State Commissions. A study of the Interstate Commerce Commission reports shows that, for the past 30 years, probably only for two or three

years did the dividend paid on the stocks of the companies amount to over 5% on the total stock, while for 6 or 7 years, the interest was less than 2%, and that never in that time has over 68% of the stock paid any dividend; while there were years when less than 50% of the railway stock of the United States paid any dividend. These reports also show that the interest on the bonded indebtedness never amounted to 5% and there was always a considerable percentage of bonds which paid no interest. These reports also show that by either comparing the tons of freight handled, or more properly, the tons of freight carried one mile, the business of the country has increased nearly twice as fast as the capital invested.



J. G. Sullivan, M.Can.Soc.C.E.  
Chief Engineer, Western Lines, C.P.R., and  
ex-President, American Railway Engineering Association.

These reports also show that the number of cars and locomotives in service has not kept pace with the business. We must, of course, take into account, in considering this factor, the increased weight of the individual locomotives and the increased capacity of the cars. These reports also show that the miles of track have not increased anything like the rate of increase in business. More significant is the rate of increase of sidings and yards. The reports do not separate passing sidings from terminal yards and other business yards, but when one considers the necessarily large increase in the mileage of passing sidings required for an increase in business, it is almost self evident that the increase in terminals and business tracks has not kept pace with the business. It may seem strange to you that I should bring up this subject at this time when the "house is on fire" and when the government has stepped in and has asked all hands to lend a hand to put out the fire, making no reference to what has caused the trouble, it only being intimated by a very few discredited radicals that the

railwaymen were to blame for the setting of the fire. It is generally conceded that lack of capital has been the cause of the difficulty and that capital has been frightened away by anti railway legislation and regulation. A great many are apt to blame our governments for this condition, when as a matter of fact, it is you and I, citizens and voters of this country (the responsible parties), who are actually to blame, and it is for this reason that I have brought up the subject and wish to discuss politics. I wish to emphasize that we engineers, as a body, as more to blame than any other class of men, for the reason that we take less interest in politics than any other body.

Another reason why I wish to discuss this subject somewhat further is the fact that if we do not win this war, nothing much matters. If, however, as we all hope, democracy will come out victorious, our responsibilities will be the greater and we must meet those responsibilities with courage and do our duty as men. To make my meaning a little more clear, I will ask you to consider how you railway men would think the railways of the country would be managed if all the offices were filled by office seekers rather than by men chosen on account of their ability and fitness to fill the office. I venture to say that there are very few chief engineers in this room who did not protest at their first promotion to take charge of a location party or a party on construction. I further venture to say, that there is not a locating engineer in this room who at some time did not have the experience of having a rodman or stakeman mistaken for the chief of the party, and I will go further and say that if his party had been a political organization the chances are ten to one that the rodman or stakeman would have been in charge of the party. Only the other day I asked a prominent citizen of a town in Western Canada, how it happened that a certain party had not been elected a member of parliament. His reply was, "The other man had a larger acquaintance and was better known." Every railwayman should realize that his own welfare depends on the welfare of the country and the company for whom he is working, no matter whether he is a section laborer, chief engineer or president, and he should take the same interest in selecting representatives to the legislature who will make laws controlling the actions of the railways, as he would in selecting directors of a railway if he was a stockholder.

In conclusion, let me impress on you the necessity of taking an active interest in politics, not alone in going to the polls and voting for the least objectionable office seeker, but by taking an active interest in choosing the candidates, and, if necessary, sacrificing time and other interests to become officers if called upon to do so, remembering that when this war is over, the responsibility placed on the voters of democracies will be greatly increased and especially so in the United States, where you have gone one step further than democratic Canada, and other less radical democracies, by the fact that you not only elect your legislative bodies, but you also elect your judiciary and executive officers by popular vote. And realize further, that you need honest, intelligent and capable representatives more in times of prosperity than you do in times of adversity. In the meanwhile, let us join hands with the government,



put our shoulders to the wheel and do all in our power to win this war for freedom and democracy. Then after the victory, let us not shirk our duty, but assume the responsibility of self government, making sacrifices where necessary, and thereby making democracy a real success.

### The "Mackenzie-Mann" Bugaboo.

Sir Donald Mann has written as follows:—"My attention has been called to the press report of proceedings before the Power Controller, April 18, in which Sir Adam Beck refers to 'the London Electric Co., a Mackenzie-Mann concern,' to 'Toronto Electric Light Co. and other Mackenzie-Mann companies,' and again 'to the power given the Mackenzie-Mann Co. to go on using extra water at Niagara.'

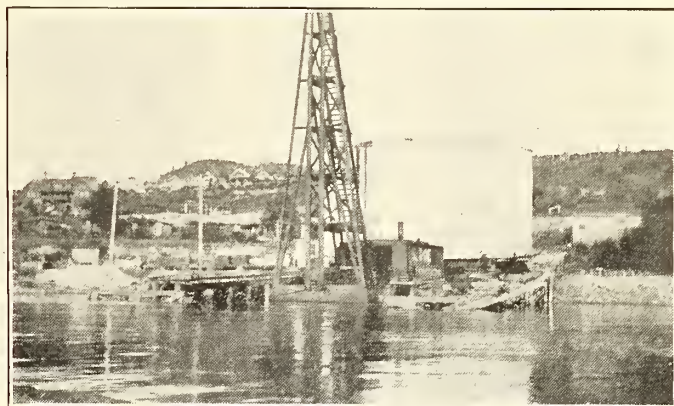
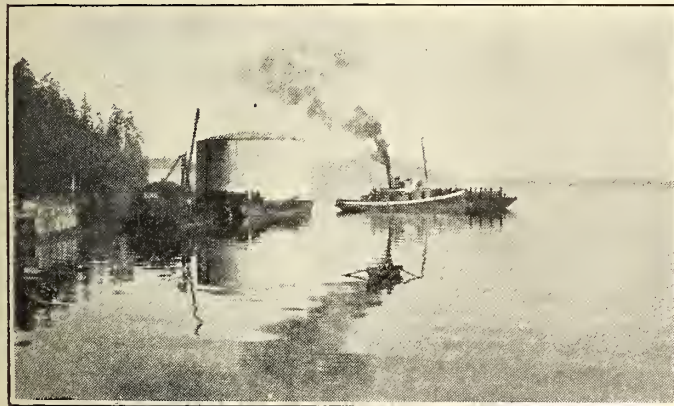
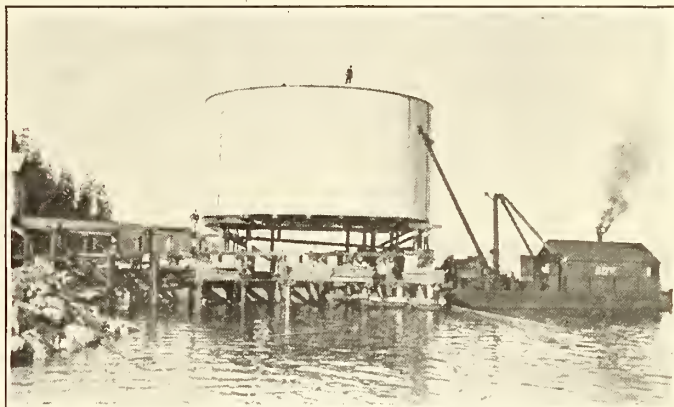
"The use of the name Mackenzie & Mann in this connection is absolutely without justification. Mackenzie, Mann & Co. have no interest, and have never

## Unique Transportation of Fuel Oil Tanks in British Columbia.

The removal of three fuel oil tanks from Bamberton, Vancouver Island, to Powell River, on the B.C. mainland, about 120 miles, had some interesting features. At Bamberton the tanks were located on a bank 22 ft. above low water, the range of tide there being 12 ft. In order to get a tank on a scow, 2 trestles, about 100 ft. long and 34 ft. apart, had to be built out in the water, so that a scow 32 ft. wide could get in between the trestles, of which the last 60 ft. were so constructed that the top part, about 10 ft., could be quickly removed and give place on a lower level for the tank to rest on. The upper right hand view in the accompanying illustration shows a tank on posts, placed on the scow, at high tide, and the upper part of

latter place, about 650 ft. from the shore line and 75 ft. above water level, rails had to be put down from the end of the trestles up to the pit, where foundations were made to receive the tanks. Two trucks, about 60 ft. long, with 2 sets of wheels at each end, were placed under the tanks for going up the grade. On the bank, above the foundations, was placed a donkey engine which did the pulling. Two 3-sheaved steel blocks, with  $\frac{3}{4}$  in. cable, were used for tackle. At this end the trestles were built on a 10 per cent. grade, far enough out in the water to receive the tank at high tide without raising it on the scow.

The tanks are 60 ft. diameter and 30 ft. high; capacity 15,000 bbls. each;



Moving Oil Tanks in British Columbia.

Upper left view, oil tanks on foundations at Bamberton. Upper right view, tank on posts at high tide at Bamberton, with upper part of trestle removed. Lower left view, tank leaving Bamberton in tow. Lower right view, hauling tank up 10% grade at Powell River, over double track railway.

had an interest in the London Electric Light Co., in the Toronto Electric Light Co., in any of the companies developing power at Niagara Falls, or in any of their subsidiaries. Personally I have neither capital holdings nor official position in any of the Niagara companies or their subsidiaries. One would expect from a man occupying Sir Adam's responsible position something more than reliance upon street gossip; in fact, one would expect a careful adherence to facts, certainly in matters such as this where the facts are readily obtainable. I have not followed hydro power matters in Ontario closely enough to know the merits of the controversy, but if the rest of the information which Sir Adam has so freely given to the public is no more accurate, then heaven help the public."

the trestles removed, as mentioned above.

While the tide was high, a new foundation was made to receive the tank when the tide came down to nearly low water. When the tank was landed on this new level, and the scow released, this was taken out from under the tank, the posts removed and cribbing put instead, just so high that when placed under the tank it would lift the same clear of the trestles at the next high tide. This operation had to be repeated three times before a tank could be landed on the deck of the scow. The tanks were moved to the end of the trestle on iron rollers.

At the same time as this work was being performed at Bamberton, another crew built a double trestle and road at Powell River. On account of the long distance the tanks had to be moved at the

weight, with sills under, about 70 tons each. The scow used was 32 ft. wide x 100 ft. long x 9 ft. 8 in. deep. The work was started at Bamberton on Sept. 10, 1917, and the third tank was in place at Powell River on Nov. 5. The contractor was S. Doe, of Victoria, B.C.

**Observation and Private Cars.**—The Minister of Railways stated in the House of Commons, Apr. 4, in answer to a question by T. MacNutt, M.P. for Saltcoats, Sask., that no order had been issued to discontinue observation and private cars on transcontinental and other trains, and that the government was not aware that a heavy private car was attached to the rear end of Imperial Limited train 2, at Vancouver, recently, and hauled to some point in Ontario.



## Rolling Lift Bridge on Canadian Northern Railway at Victoria.

A single track, deck girder, rolling lift bridge across Selkirk Water, Victoria, B.C., for the Canadian Northern Pacific

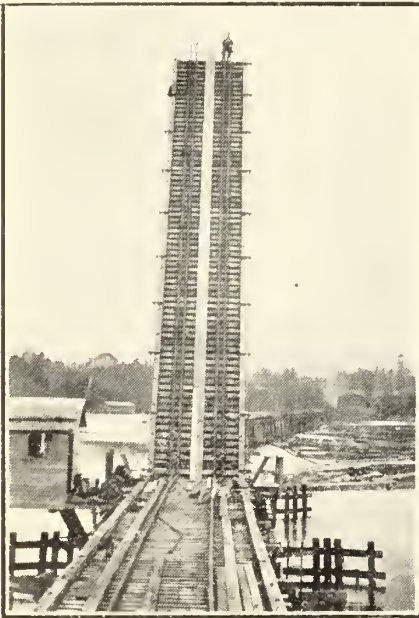
Cook, Resident Engineer, C.N.P.R., Victoria. The cost, including interlocking, was about \$21,000.



Canadian Northern Ry., Rolling Lift Bridge over Selkirk Water, Victoria, showing bridge closed and also in full open position.

Ry., has been completed recently. The length, centre to centre of end bearings, is 77 ft. From base or rail to high tide, 13 ft., from from base of rail to low tide, 23 ft. There is a clear channel of 70 ft., and at low tide 16 ft. headroom. The substructure is of concrete.

The counterweight is composed of concrete and steel punchings, averaging 271 lb. a cu. ft., aggregating 55 cu. yards. All is below the deck and as the bridge rises the counterweight descends slowly to the concrete pit provided. The bridge is operated by hand power and so ar-



Canadian Northern Ry., Rolling Lift Bridge at Victoria, in full open position.

anged that an electric motor for operation can be attached when desired. The machinery forms a small percentage of the weight and is considered highly satisfactory. One man can raise or lower the span in about three minutes.

The whole layout is arranged with a view to duplicate the span for second track when required. The bridge was designed in accordance with Dominion Government specification, class heavy loading, under the direction of W. P. Chapman, M.Can.Soc.C.E., Engineer of Bridges, C.N.R., Toronto, by the Scherzer Roller Lift Bridge Co., the erection being done under the supervision of E. F.

## Thermit Welding on Michigan Central Railroad.

We have made a great many Thermit welds on locomotive frames in the Michigan Central shops at St. Thomas, Ont., and in every case they have proved successful. While we have endeavored to obtain photographs, it has been difficult to obtain good ones. I would like to call attention, however, to the accompanying illustration of my last weld, made on Nov. 3, on locomotive 7540, which was electric welded on the lower rail, and after breaking again at that point finally caused the top rail to break also. Both these fractures were then welded by the Thermit process, using 125 lb. of Railroad Ther-



Thermit Weld on Locomotive Frame.

mit. This repair was accomplished without keeping the locomotive out of service more than four days.

Another difficult weld which we were called upon to make was on one of our largest freight locomotives, the break being 5 x 14 in., and located just back of the right cylinder. We removed 1 in. from the butt of the main cylinder in order to provide room for a riser. This weld was made six months ago, and has given satisfactory service ever since. We find our Thermit welds not only satisfactory, but money savers as well.

**Workmen's Compensation in Alberta.** In connection with the Workmen's Compensation Act passed by the Alberta Legislature, it is stated that by an arrangement with the railway labor unions, it has been decided that the act will not apply to railway employes, but that their case will be dealt with next year.

**Government Railway Employees.**—The Minister of Railways informed the House of Commons, Mar. 27, that 20,917 persons were on the Canadian Government Railways pay rolls on Dec. 31, 1917, of whom 1,901 were on steamships and car ferries, and 480 were on military service.

## Value of Different Sizes of Coal for Locomotives.

Until recently nearly all coal used on locomotives was mine run, i.e., the entire unscreened product of the mines. In the past few years, however, increasing quan-

tities of screened lump coal have been used in locomotive service. This increase in the consumption of lump coal has been due partly to the belief that lump coal, when burned on a locomotive, produces enough more steam than mine run coal to compensate for its greater cost. Special considerations, such as the desire to lessen the amount of smoke formed, have also led in some instances to the use of lump coal, which is generally believed to require less skill in firing than mine run coal. The introduction of mechanical stokers for locomotives has resulted in the use of increasing amounts of various sizes of screenings. Thus far there has been little use of such sizes as egg, egg run, and nut coal on locomotives, although traffic and market conditions occasionally make it feasible and desirable to use them.

The relative values of several sizes of coal for locomotive use have not been well understood, since most laboratory and road tests have been made with mine run, or occasionally with lump coal, and the data are inadequate and conflicting. A series of tests to determine the value of different sizes of coal has been conducted by the University of Illinois Engineering Experiment Station under a co-operative agreement with the International Railway Fuel Association and the U. S. Bureau of Mines. A mikado locomotive, weighing 142 tons, belonging to the B. & R.O. Rd., was used, the tests being made in the locomotive laboratory at Urbana. The results are published in bulletin 101, entitled, "Comparative tests of six sizes of Illinois coal on a mikado locomotive." Copies may be had without charge by addressing the Engineering Experiment Station, Urbana, Illinois.

**The Reid Criminal Libel Case.**—When this case, which was taken against Sir William D. Reid, formerly President, Reid Newfoundland Co., by a Newfoundland politician, came before the local magistrate at St. John's, Nfld., recently, it was dismissed, as no case was made out. Action was taken subsequently by indictment before the Supreme Court, and at the sittings in April, the grand jury threw out the bill. The Chief Justice, in instructing the grand jury, stated that, if they found that the letter sent by Sir William Reid to Lord Shaughnessy, did not mean what the indictment said it meant, they could not bring in a true bill, but if they found that the words of the letter were libellous in themselves, they could bring in another bill.



# Fuel, From a Transportation Standpoint.

By W. M. Neal, Secretary, Canadian Railway Association for National Defence.

No one needs to be reminded of the close and intimate connection between the humble coal pile in his cellar and the pride and comfort of the loftier apartments in his house. We may in the past have treated the coal bin as a mere poor relation or humble servant. We gave it the poorest room in the house. We even hired other people to attend to it, so as not to have to soil our fingers by contact with the fuel problem, but nowadays I think one can observe a much more kindly attitude toward this humble factor in our domestic arrangements. We have been forced, as it were, to enter into diplomatic relations with the coal bin and to treat it with consideration and very great respect. The greatest coal bin in Canada is that of the railway companies. Many have seen some of the young mountains of coal which the transportation companies are forced to maintain at their terminal points. There are in Canada over 5,000 locomotives, whose appetites require an average ration of from 100 to 160 lb. of coal for every mile run. The locomotives which draw the passenger trains from Montreal to Toronto burn not less than 16½ tons of bituminous coal. If we allow that the average tender on the average locomotive holds 10 tons of coal, then the requirements of the railways for a single loading of their tenders amount to over 50,000 tons. The total coal consumption of the railways of Canada in the last year for which these are official figures (1916) was 8,995,123 tons, which cost \$27,961,186. This was almost as much as the total Canadian import of bituminous coal and slack in the same year.

But, of course, what the railways themselves consume is only the beginning of the coal problem for the railway managers. Although we imported only about 9,000,000 tons of bituminous coal and slack in 1916, the railways hauled that year 18,122,835 tons. In addition to this they hauled 7,057,628 tons of anthracite coal and 1,772,854 tons of coke. The hauling of fuel both for themselves and the public amounted to approximately 25,000,000 tons, or over one fifth of the total freight tonnage carried by all the railways of Canada that year. It was four times the weight of the ore carried, and twice the weight of the total products of manufacture which were carried by the railways. It required the service of 29,948 trains of 23 cars a train, or the exclusive service for one year of approximately 1,000 freight locomotives and 23,000 freight cars. The weight of bituminous coal carried by the railways runs, as a rule, just a trifle less than the weight of all the grain produced in the Dominion.

I give these figures to impress the extraordinarily intimate connection between the coal situation and the railways of Canada. I cannot refrain from remarking, just in passing, that although coal carrying represents such a great part of railway work, it does not represent a proportionate part of railway earnings. Coal is carried farther in Canada for less money than in any other country in the world. It costs the coal dealer less for the freight on a ton of coal transported 60 miles than to team than same ton one mile in Montreal or Toronto. The recent rail rate increases give the railway about 15c a ton more than before on an average anthracite shipment from the mines to Toronto. One hears a great deal about this increase, yet the general increase

of 66 2/3% in teaming costs due to increased price of oats, labor and horse-flesh has scarcely been mentioned in the public press. I intend first of all to outline roughly the machinery of coal distribution in Canada as it existed before the war. It is necessary to divide the country into five districts, according to the fuel situation in each. I will then try to show what each district used, where it obtained its supply and how.

Starting in the east, let us define district 1. It reached from Halifax to, say, Montreal. It was supplied with bituminous coal from the Nova Scotia mines. This coal was distributed partly by rail, by chiefly by boat. In 1913, the last normal year, the Dominion Coal Co. distributed 1,750,000 tons by boat in the St. Lawrence alone, and the Nova Scotia Steel Co. another 500,000 tons. The s.s. *Storstadt*, which sank the *Empress of Ireland*, was one of the fleet of vessels distributing this coal. Very little of it was consumed farther west than Montreal. Nova Scotia and New Brunswick consumed quantities in addition to the St. Lawrence requirements. Much of this, also, before the war, was carried by steamer or by the humbler but more picturesque schooners of this region.

District 2, overlapping district 1 to some extent, reached, say, from Quebec City and towns like Sherbrooke and St. Johns, Que., west to Windsor and Sarnia and north to Sudbury, North Bay and Cochrane, Ont. This was, and is, the great coal importing area of Canada. It is here that the major portion of our anthracite coal was consumed and the chief share of bituminous coal was converted into energy and manufactured goods. It came by three different means, by rail, by water, and by car ferry. The chief rail points from which coal passed directly into Ontario were Black Rock, Victoria Park, Suspension Bridge, Niagara Falls, and Bridgeburg. These are the points we call the Niagara frontier, where special precautions had to be taken this past winter, as I shall describe later on. Another direct rail connection from district 2 to the United States is, of course, at Sault Ste. Marie, but no coal of any account passes there.

Of the car ferry connections the largest are at Sarnia-Port Huron and Windsor-Detroit. A considerable amount of Illinois coal passes there. Much more crosses Lake Erie from Cleveland to Port Stanley; Ashtabula to Port Dover; Ashtabula to Port Burwell; and Lake Ontario from Ogdensburg to Prescott and Charlotte to Cobourg. Practically the only traffic from Port Burwell is empty coal cars south-bound and loaded coal cars north. This one little port accounts for 54 cars of coal a day in good weather.

So much for the direct rail connections in coal schooners and steamboats of a sort plying on Lake Ontario from Oswego to Kingston or Toronto, and on Lake Erie from the American coal ports to the Canadian ports just named. These are the coal-carrying connections between district 2 and the U.S. coal fields. The coal thus received is distributed chiefly from Toronto, Hamilton and London to the rest of the older parts of the province.

In district 3 let us place all the north share of Lake Superior west to the eastern boundary of Manitoba. In this region, Port Arthur and Fort William are the central points. Another port of which little is heard is Jackfish, a C.P.R. point

where this company obtains enough coal by water during the summer to supply the north shore divisions all the year round, without having to burden the line itself by hauling coal via Toronto and Sudbury. The centres of public distribution are the twin cities. Many of the vessels which go north for cargoes of east-bound grain take coal on the up voyage. This coal is scattered westward by the returning empty grain cars from Fort William to Winnipeg. How far west of Winnipeg this movement goes I cannot say definitely, as it depends upon the production and movement of Western coal. There the U.S. coal going up the lakes begins to come in competition with the coal from our western foothills. The greater the production of western coal the farther east it comes.

District 4 might be said to include Winnipeg and the eastern portion of British Columbia, overlapping district 3 to some extent. In its most westerly extension it is fed almost exclusively from the Alberta coal fields.

Of district 5 I need only say a word. It takes in the western slope of British Columbia. The railways there use coal and oil fuel. The supplies of coal were and are from Washington and Nanaimo. The consumption is not large and the problem of distribution is not great.

Such are the outlines of the fuel situation from a transportation viewpoint as it existed before the war. I will now explain the changes which war has brought about in each district.

In district 1, the steamships plying from Sydney to St. John, Halifax, Quebec and Montreal, have, so to speak, enlisted. The distribution of coal from these mines falls entirely, therefore, upon the railways. The 2,000,000 tons distributed by boat in the St. Lawrence are now carried by rail. The schooners on the coasts of Nova Scotia and New Brunswick continue to do their share, but even there the railways have had to assume an extra burden. Eastern Canadian bituminous coal is now moving into district 2 as far as Ottawa and Cornwall. The increased consumption of coal in district 1 has made necessary the use of U.S. coal there, too, which is hauled north via Montreal and then east.

In districts 2 and 3 there have been two changes: a falling off of water carriage of coal on the lakes, and the congestion of the U.S. roads, which made it impossible to send the proper number of coal cars south for coal, on account of the danger that they would be lost down there even before they could be loaded at the mines. The loss of the water carriers was perhaps the more serious of these two considerations. From these three districts a tremendous proportion of the water carriers have disappeared. Practically the entire burden—amounting to 2,000,000 tons or 50,000 carloads for St. Lawrence points alone—has been forced upon the railways. They met this condition by building more coal cars, by converting sand and gravel cars for coal use, by enforcing economy in their own use of coal, by pressing box cars into the coal carrying service, and by trying to move as much coal as possible in the summer when the traffic may take advantage of easier transportation conditions. By a campaign among the big shippers, asking them to accept coal deliveries last summer instead of in the autumn, much good was accomplished. With respect to the danger of



losing our coal cars in the U.S., thousands of tons of coal were worked through the U.S. tangle in returning Canadian "empty" box cars. The use of box cars for coal carrying can only be applied from mines and docks where there are devices for loading and unloading these cars with coal. Fortunately, these devices are already established in the west, i.e., districts 3 and 4, otherwise we should have had a lot of trouble sending to Winnipeg special coal cars instead of using the westbound empty box cars.

I must make special reference to the work done on the Niagara frontier this winter by the administrative committee of the Canadian Railway Association for National Defence. In this work all roads co-operated to the fullest extent. The incoming coal cars at Black Rock, Bridgeburg, Victoria Park, Niagara Falls and Suspension Bridge were forwarded rapidly to Hamilton, Toronto, London and other points, without respect to what road they were routed by. In spite of blizzards and exceptional weather conditions, about 5,000 cars (chiefly coal) were put through in a period of two months over and above what would have been regarded as a normal movement. This meant to the Canadian consumers about 150,000 tons of coal extra.

So much for districts 1, 2 and 3. In district 4, that is, from Winnipeg to the eastern half of British Columbia, the question is being discussed whether the western bituminous mines could not look after the bituminous requirements of that district, while the lignite, being compressed into briquettes, might replace the anthracite. This is a consummation devoutly to be desired and members of the Canadian Railway Association for National Defence have already taken up the question with a view to being ready, as far as transportation is concerned, to make Western Canada, by the winter of 1919-20, as nearly self-sufficient as possible. How far this is possible I cannot even guess, although I may mention some of the factors governing the situation. First, as to production of both bituminous and lignite coal, the mines have never been able to turn out maximum quantities because of labor troubles, as high rates of pay enable men to take time off with impunity, and because of lack of storage facilities for lignite coal. But even with these, much might be done, so far as the railways are concerned, by a concerted effort on the part of the mines, the railways and the public to persuade consumers to place their orders for delivery during the slack months.

Conditions in district 5 have not changed. There is some talk of having the California supply of oil fuel for railway locomotives cut off. This would be very serious for the railways, as the following figures show: Fuel oil consumed in British Columbia, 1917—C.P.R. received 48,763,554 gall. and consumed 46,608,660; Grand Trunk received 6,350,840 gall. and consumed 6,303,500; Esquimalt and Nanaimo used 2,646,400 gall.; Pacific Great Eastern used 1,638,000 gall.

I have described briefly the changed conditions of the Canadian fuel traffic and how the railways have met these changes. Just one word about the special means of internal economy which the railways have undertaken with a view to economizing in their own use of coal. In districts 1 and 2, the coal is poorer in quality, and higher in price, than ever before. This is due to the labor scarcity at the U.S. mines where the product is no longer picked over as it used to be.

First, regarding passenger trains, the Canadian Railway Association for Na-

tional Defence, and the individual railways before the association was formed, have cut off trains whose total yearly mileage would amount to 12,000,000 miles. Assuming an average of 100 lb. of coal per passenger train mile, this means 600,000 tons saved. Parlor and observation cars have been eliminated, except in cases where there are combinations of dining or sleeping cars. Fewer sleeping cars are attached to night trains, thus a greater use of upper berths is made and the wheel resistance of extra cars is done away with. The speed of all trains has been reduced to the point where a maximum of effort is obtained from a given amount of fuel. No train is allowed to run at excessive speed to make up time. This has always been a practice very hard on coal economy. Special trains and the hauling of private cars, except at the request of government officials, have been done away with.

Even more important economies have been made in connection with the freight services. A campaign for heavier loading resulted in a great improvement. For example, in the movement of freight to St. John during Jan., 1918, as compared with Jan., 1917, the average load per car rose from 26.4 tons to 32.3, an increase per car of 5.9 tons. The saving from this improvement on this traffic alone that month was 1,313 cars and over 7,300 tons of coal. There was also a saving of the time of 11 locomotives and 55 locomotive and train men for that month, besides a great many shopmen, yardmen, car checkers, repairmen, etc. The handling of less than carload lots of freight has been so rearranged as to load the cars more heavily. We are thus able to reduce the ratio between net weight and tare weight in any given train. The wheel resistance is lowered. The train is made shorter and can therefore be handled more promptly.

In the actual firing of the locomotives, further economies have been effected in spite of the lower grade of coal available in districts 2 and 3. Expert firemen are sent out to show the less experienced men the best way of dressing the fires.

The old practice of burning worn-out ties on the sides of the railways has been discontinued since the war. In some districts it does not pay to haul these ties to places where the railways can use them. In these cases the farmers alongside the track or the railway trackmen are being given the ties for firewood. The greater proportion of them, however, are taken to the shops and locomotive houses. It was found impossible to saw these ties, owing to the amount of gravel and dirt with which they were impregnated. A device has been made which breaks them into appropriate lengths and they are now used under the boilers.

As a railway man, I take great pride, along with my fellow railway men, in the record which Canadian railways have established, not merely in the handling of fuel, but in the handling of food, munitions and domestic traffic. We have had two exceptionally severe winters. We have had labor shortage. Fuel has been scarce and of low quality. The nature of traffic and the direction of traffic has shifted and changed overnight in a manner sufficient to strain the resourcefulness of even the most alert railroad men in the world. Changes which I have indicated with regard to the movement of coal in Canada apply even with greater force to the movement of other commodities. The Canadian railways have moved hundreds of thousands of soldiers, eastbound and westbound; they have handled 75,000 foreign laborers passing from Vancouver across the continent en route to France.

There have been some difficulties, but on the whole I think there have been fewer railway troubles in Canada since the war than in any other country in the world.

The foregoing paper was read in Toronto recently, at the Canadian Society of Civil Engineers' general professional meeting.

## Railway Department Estimates for 1918-1919.

The Railway Department estimates for the year ending Mar. 31, 1919, submitted to the House of Commons recently, contain, among others, the following items chargeable to capital account:—

Canadian Government Railways.	
Construction and betterments, including equipment .....	\$18,000,000.00
Dartmouth to Deans Branch .....	30,000.00
To provide car ferry—construction of terminals, etc. ....	65,000.00
Hudson Bay Ry.—Construction of railway terminals .....	1,000,000.00
National Transcontinental Ry.—To pay claims for right of way, etc. ....	250,000.00
Quebec & Saguenay Ry.—Construction .....	900,000.00
Quebec Bridge.—Construction .....	700,000.00

The following items are chargeable to income:—

Arbitration and awards .....	\$ 2,000.00
Board of Railway Commissioners for Canada—Maintenance and operation of, including \$800 for Clyde Leavitt as Chief Fire Inspector .....	183,850.00
Board of Railway Commissioners for Canada—To pay expenses in connection with cases before .....	15,000.00
Contribution of Government Railways to McGill University towards the foundation of a school of railway engineering and transportation in general, in connection with Faculty of Applied Science .....	2,500.00
Contribution of Government Railways to Polytechnic School, Montreal, for advancement of learning in connection with railway engineering and transportation in general ...	2,500.00
Contribution to International Association of Railways' Congress ....	97.33
Costs of litigation .....	3,000.00
Governor General's car, attendance, repairs and alterations to .....	5,000.00
Miscellaneous works not provided for Surveys and inspections—canals, including salaries and expenses of experts employed temporarily .....	25,000.00
Surveys and inspections—railways, including salaries and expenses of experts employed temporarily .....	40,000.00
Expenses in connection with consolidation of Railway Act .....	5,000.00
Inquiry and report on railway situation of Canada .....	40,000.00
To provide for audit on behalf of government of any railway company Loan not exceeding \$7,500,000, repayable on demand, with interest payable half yearly at 6%, to be used to meet expenditure made or indebtedness incurred in paying interest on securities of the Grand Trunk Pacific Ry. or Grand Trunk Pacific Branch Lines Co.; to meet deficit in operation of G.T.P.R. System and for betterments and purchase of equipment; loan to be secured by mortgage upon undertaking of G.T.P.R. Co. containing such terms and conditions as the Governor in council may approve. The disposition of the loan to be subject to the direction of the Governor in council. The company agrees to constitute its board of directors as may be required from time to time by the Governor in council .....	7,500,000.00
Loan not exceeding \$25,000,000 repayable on demand with interest half yearly at 6%, to be used to meet expenditures made or indebtedness incurred in paying interest on securities or paying maturing loans of Canadian Northern Ry. Co. or any company included in the Canadian Northern Ry. System, to meet deficit in operation of C.N.R. System and for construction, betterments and the purchase of equipment; said loan to be secured by mortgage upon the undertaking of Canadian Northern Ry. System, containing such terms and conditions as the Governor in council may approve .....	25,000,000.00
Salary of Board of Railway Commissioners and Secretary .....	55,000.00



# Railway Electrification.

By John Murphy, M.Can.Soc.C.E., Electrical Engineer, Railways and Canals Department, and Board of Railway Commissioners.

Still smarting from the sufferings of two successive winters' fuel shortages, caused by inadequate transportation facilities, we are foregathered to see what can and should be done to prevent, if possible, recurrences of such serious and trying experiences. No argument is required to support the contention that eliminating the need for coal at a considerable distance from the mine is a greater measure of relief, and of true conservation, than increasing mine production and thereby incidentally adding more load to the already overburdened railways. Reducing coal consumption automatically relieves or releases men and apparatus all along the route from the mine to the consumer; it also relieves the route itself from some of its congestion. So eminent an authority as E. W. Rice, President of the American Institute of Electrical Engineers, addressing that body in New York recently, made the following statement:—

"It is really terrifying to realize that 25% of the total amount of coal which we are digging from the earth is burned to operate our steam railways—and burned under such inefficient conditions that an average of at least 6 lb. of coal is required per horsepower hour of work performed. The same amount of coal, burned in a modern central power station, would produce an equivalent of three times that amount of power in the motors of an electric locomotive, even including all the losses of generation and transmission from the power station to the locomotive."

Mr. Rice went on to say that 150,000,000 tons of coal, nearly 25%, of all the coal mined in the U.S., were consumed in steam locomotives last year. Here, in Canada, steam locomotives also did their bit and consumed about 9,000,000 tons; 30% of the 30,000,000 tons of coal imported into and mined in this country. Our 9,000,000 tons cover, I believe, wood and oil consumed on steam locomotives; some 49,000,000 gall. of oil are covered by the Canadian record. But in the U.S. figures, 40,000,000 barrels of oil (15% of the total output) are not included.

The conservation of—the elimination of the necessity for mining—those great quantities of fuel would be secured if all the railways were operated electrically, and if the electrical energy were generated from water power. Modern steam central stations would save from 50 to 66% of the coal now used in steam locomotives if the latter were discarded and electric locomotives used instead. With such possibilities for fuel conservation in sight may we not soon expect to learn that the fuel controllers in both countries have asked the railways, and that the railways managers have asked their engineers: "How many of these millions of tons of coal can you save? When will the good work begin?"

It is said that our fuel shortages were due to a combination of bad weather and inadequate transportation. As we cannot control the weather, our attention and efforts must be directed to the transportation portion of the difficulty. Railway electrification will reduce coal consumption and haulage; it will also greatly improve traffic conditions. Electrification, therefore, seems to be the solution of the problem. Under these circumstances it may not be out of place to recite in general terms what electrification has actually accomplished on some notable railways. Railroad in the mountains is the most strenuous kind of railway work. The examples which I have chosen cover

mountain sections. The Butte, Anaconda and Pacific Ry., by electrification, increased its ton mileage 35%, and at the same time decreased the number of trains, and its incidental expenses, 25%. The time per trip was decreased 27%. It is said the savings in the first year's operation, after electrification, amounted to 20% of the total cost of electrification. It buys power from water power plants.

On the Norfolk & Western Ry., power is obtained from its own steam station. Twelve electric locomotives have replaced 33 Mallets of the most modern and powerful type. The tonnage has been increased 50%. Electrification obviated the necessity for double tracking. The salvage value of the released steam locomotives was 45% of the cost of electrification. Electric locomotives make eight times as many miles per train minute delay as the steam ones. Their terminal lay overs average 45 minutes and they are double crewed every 24 hours. Pusher locomotive crews have been reduced from 8 steam to 4 electric. Pusher locomotives have been reduced from 7 steam to 2 electric. Steam locomotives used to "fall down" in cold weather—the electrics always "stand up," and are really more efficient in cold weather. At the New York Railroad Club meeting last year the N. & W. electrical engineer stated that "coal wharves, spark pits, water tanks and pumps, as well as roundhouses and turntables, have all disappeared from the electric zone. The track capacity has been doubled. The operating costs have been reduced. From an engineering, an operating and a financial viewpoint the electrification has been a success." Speaking of the value of the regenerative electric braking of the system, he went on to say: "The use of the air brake is practically eliminated; it is only used to stop trains. It is regrettable we are unable to put a dollars and cents value on this great asset; to appreciate it properly, one must have had experience with the difficulties of handling 90-car trains with air." Another official, referring to the same subject, made the following statement:—"the 2.4% grade, without ever touching the summit 12 to 20 times every day, down the 2.4% grade, without ever touching the air. We never broke a train in two or slid a wheel. It is done so nicely we wouldn't spill a drop of water out of a glass in the caboose."

The 440 route miles of the Chicago, Milwaukee & St. Paul Ry. which have been electrified will soon be augmented by 450 miles more. Nearly 900 route miles and about 33% in addition for passing tracks, yards, industrial tracks and sidings will soon represent the extent of this great railway electrification. Among the advantages secured by this railway on its electric sections are the following: The cruising radius of each electric locomotive is twice that of the steam locomotive. Subdivisional points, where freight crews and steam locomotives were formerly changed, have been abolished; the passenger crews' runs are now 220 miles, instead of 110. For railway purposes, these stations do not now exist; seven or eight miles of track have been taken up; through freights do not leave the main line track at all; shops and locomotive houses have disappeared along with their staffs, and one electrician replaces the whole old force. An electric locomotive

has made 9,052 miles in one month. Although schedules have been reduced, the electrics have made up more than two and a half times as many minutes as steam locomotives—time which had been lost on other divisions; 29% of electric passenger trains made up time in this manner. On a mileage basis alone, the operating costs of the electrics are less than one-half the steam locomotive costs. Freight traffic increased 40% shortly after electrification—double tracking would have been necessary to handle such increased business under steam operation. An average increase of 22% in freight tonnage per train has taken place. One electric handles about three and a half times as many tone-miles as a steam locomotive; the reduction in times in handling a ton-mile is 30%; faster and heavier trains have accomplished these results, the number of trains has not been increased. About 11½% of the energy used by the railway is returned to the line in the process of regenerative braking and this returned energy helps to haul other trains. While this is a very important item and reduces the power bills, it is only regarded by the management as of secondary importance in comparison with the more safe and easy operation of trains on the grades and the elimination of former delays for changing brake shoes and repairs to brake rigging, when operating with steam locomotives. The electrics maintain their schedules much better than steam locomotives. In three months the electrics only waited for the right of way 254 minutes, while the steam locomotives in a similar period waited 1,910 minutes, or seven and a half times as long. Extra cars on trains only delayed electrics one ninth of the time steam trains were delayed for a similar reason. Cold weather delayed steam trains 445 minutes in the three months under discussion, but the electrics were not delayed a minute; the latter are more efficient in cold water. Many of the delayed steam trains were double headers—never more than one electric is hitched to a passenger train. An entire suspension of freight service, due to steam locomotives losing their steaming capacity and freezing up, was not an uncommon experience. Electrical energy for the operation of these trains costs considerably less than coal. This latter statement is one of the most interesting in connection with the operation of the C. M. & St. P. Ry. and it is especially interesting because it was made more than a year ago. The foregoing experiences of men who are actually operating large railway electrification projects, show what the electric locomotive is doing every day. As the Vice President of the last mentioned railway said, "Electrification has made us forget that there is a continental divide."

The limitations of the steam locomotive are due to the fact that it is a mobile steam power plant of very limited capacity, compelled to carry its own supply of coal and water, and unable to take advantage of many of the economical refinements of the large modern stationary steam plant. On the other hand, the electric locomotive has no such limitations. It merely acts as a connecting link between efficient gigantic stationary steam or water power plants and the train to which it is connected. A technical paper summed up the situation a short time ago when it



said: "Why continue to haul millions of tons of coal, for and by uneconomical steam locomotives, all over the country, and thus add more loads to the already overburdened railways, when the power which they need so badly can be much more economically and efficiently transmitted to electric locomotives over a wire the size of one's little finger?"

The continual increasing cost of coal and fuel oil will force railway managers to look more and more carefully into railway electrification. Estimates of a few years ago now need revision. Money may be hard to get, but if, at times, fuel cannot be obtained at all, some substitute must be obtained if normal life is to be continued in northern latitudes. A representative of the National City Bank of New York, writing of the period after the war, referred to the stagnation which may ensue in all the great industries now engaged in war work as soon as peace is declared; the multitude of people thus thrown out of work, in addition to the men of the returning armies, would create unbearable conditions unless suitable employment will have been arranged for them in advance. He referred to the economic advantages of railway electrification and was of opinion that this work might solve the whole question if soon taken up with vigor.

The Minister of Public Works, Hon. F. B. Carvell, addressing the Canadian Society of Civil Engineers, Ottawa branch, recently, spoke of the necessity of conserving the energy of our water powers, instead of letting them run to waste, so that this great store of energy might be employed in assisting to build up our own and rebuild other countries when peace comes. How nicely these two ideals, water power development and railway electrification, work together if properly carried out.

With the view of securing something really worthy of presentation to this important meeting, I wrote recently to an eminent engineer, a man of international fame, and recognized as an authority on railway electrification, requesting him to tell me his own views upon this subject. A specialist's opinion, in my opinion, is always very valuable. Here is a short extract from his interesting reply: "Generalization is always dangerous, especially in connection with electrification of railways, where so many factors, such as the physical location, character of loads, the power situation, etc., come in to affect the decision if applied locally." From his sober statement it may be seen that my correspondent is an engineer, not a politician. He proceeded, as follows: "... with present equipment prices, the cost is absolutely prohibitive." This opinion, let me point out, is in connection with the proposal to "electrify everything." Do not let it dampen our enthusiasm. Listen to this also and kindly keep it in mind; it is another extract from the address of E. W. Rice, above referred to. He said: "I think we can demonstrate that there is no other way known to us by which the railway problem facing the country can be as quickly and as cheaply solved as by electrification."

While the present fuel shortage questions have made us look to railway electrification for relief, I feel such a project on a large scale can only follow or go hand in hand with power plant development and co-operative operation of power plants. The location of a number of plants at different points—large water power plants and auxiliary steam plants—so situated and inter connected that a failure at one plant or the connections to it will not jeopardize the others or completely cut off and isolate an important railway district is, in my opinion, an essen-

tial feature in connection with any large railway electrification project.

The 99-year contract of the Chicago, Milwaukee & St. Paul Ry. is worthy of more than a moment's attention and consideration in this discussion. That railway has a contract with a power company which has a series of plants stretching across the country parallel to the railway. The railway owns its sub-stations and secondary lines, but is not concerned with the power company's high tension lines or power plants. A reasonable rate for power, arranged between a willing purchaser and a willing seller—a contract, in fact, which each party knows the other will respect—is the basis and the real reason for that great railway electrification. Neither party questions the other's integrity or financial soundness. One delivers the power it has undertaken to supply and the other uses it. The arrangement is ideal in its simplicity and entirely satisfactory to everybody concerned. It will, in my opinion, be necessary to have such attractive power supply situations as those outlined above, backed by abundant supplies of power, in order to foster and encourage early railway electrification work in this country. Railway electrification is, in my opinion, a very pressing financial, economic and engineering problem—a problem worthy of the best attention of the most highly trained and experienced specialists.

The writer wishes to acknowledge his indebtedness and to publicly return his thanks to officials of the railways mentioned, and of the manufacturers of the apparatus referred to, as well as to the technical press, from which much of the material has been gleaned.

The foregoing paper was read before the Canadian Society of Civil Engineer's general progressive meeting in Toronto recently.

## Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1914, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 215-C. Apr. 2.—Approving standard freight mileage tariff of Oshawa Ry. C.R.C. 15, effective Apr. 15.

General order 223. Mar. 28.—Amending general order 204, Aug. 11, 1917, to read as follows, 1644 (b). Dangerous explosives, for which a certified and placarded car is prescribed (see paragraph 1661), must not be loaded higher than the car lining. (c). When the lading of a car consists of or includes explosives, the weight of the loading should be distributed so that it will be equalized on each side of the car and over the trucks.

General order 224. Mar. 27.—Amending general order 222, Mar. 19, re oleomargarine, by adding following words, "the said tariffs to become effective Apr. 15, 1918."

General order 225. Apr. 3.—Approving bill of lading issued by U. S. Government for use in respect of all shipments of munitions, war materials and supplies by or on its behalf, or any of its contractors. Notwithstanding provisions of general order 41, July 15, 1909, form approved may be used by all such railway companies, in respect of said shipments.

General order 226. Apr. 4.—Amending general order 199, July 24, 1917, re equipment of locomotives with electric headlights.

General order 227. Apr. 12.—Ordering all railway companies, including Government railways, to advance by one hour standard time used in different zones in which they operate; effective not before 12 o'clock Saturday night, Apr. 13, and not later than 2 a.m. Sunday, Apr. 14, to remain in effect until 2 a.m. Friday, Oct. 31.

27092. Mar. 22.—Recommending to Governor in council for sanction, St. Lawrence & Adirondack Ry. bylaws of Sept., 1915.

27093. Mar. 21.—Authorizing C.P.R. to build extension of siding for Brackman-Ker Milling Co., Calgary, Alta.

27094. Mar. 22.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Acme Shingle Co., Port Alberni, B.C.

27095. Mar. 21.—Relieving Halifax & South Western Ry. from providing further protection at Tannery St., near Bridgewater, N.S.

27096. Mar. 22.—Disallowing express tariffs,—Dominion Supplement 11 to C.R.C. 4418, and Supplement 8 to C.R.C. 4437; Canadian, C.R.C. 1683, 1684, 1685 and 1686, and Supplement 1 to C.R.C. 1527, and Supplement 2 to C.R.C. 1622; Canadian Northern Supplement 1 to C.R.C. 835.

27097. Mar. 26.—Authorizing C.P.R. to divert road allowance on south boundary Sec. 2, Tp. 31, Range 4, west 2nd meridian, Sask.

27098. Mar. 28.—Ordering C.P.R. to rearrange train service at Smiths Falls, Ont., effective by Apr. 8.

27099. Mar. 30.—Relieving Canadian Northern Ry. from providing further protection at highway at St. Michel, Que., mileage 13.1 from Quebec.

27100. Apr. 2.—Approving British Yukon Ry. bylaw 12, authorizing W. H. Wheeler, General Manager, and A. E. Zipf, Traffic Manager, to prepare and issue tariffs.

27101. Apr. 2.—Ordering Canadian Northern Ry. to build farm crossing for R. Toye, Minnotas, Man.

27102. Mar. 30.—Approving Dominion Atlantic Ry. bylaw 14, authorizing F. G. J. Comeau, General Freight Agent, and R. U. Parker, General Passenger Agent, to issue tariffs for freight and passenger traffic.

27103. Mar. 30.—Approving Algoma Central & Hudson Bay Ry. bylaw, authorizing R. S. McCormick, General Superintendent and Chief Engineer, to prepare and issue tariffs of telephone tolls.

27104. Apr. 2.—Authorizing London & Port Stanley Ry. to increase freight and passenger rates. This order is given fully on another page.

27105. Apr. 4.—Authorizing Lake Erie & Northern Ry. to advance freight and passenger rates. This order is given fully on another page.

27106. Apr. 4.—Authorizing London & Lake Erie Ry. & Transportation Co. to advance its freight and passenger rates. This order is given fully on another page.

27107. Apr. 3.—Authorizing G.T.R. to rebuild bridge at Broadway St., Tillsonburg, Ont.

27108. Apr. 3.—Authorizing C.P.R. to build additional tracks across Runnymede Road, Toronto, and to extend existing subway, and divert Ethel Ave.

27109. Apr. 3.—Approving agreement, Mar. 15,

between Bell Telephone Co. and North Wellington Telephone Co.

27110. Apr. 4.—Ordering C.P.R., by Apr. 30, to do the work on Big Creek drain, Tilbury North Tp., Ont., within limits of its right of way, covered by the township engineer's report.

27111. Apr. 5.—Amending orders 24882, Apr. 8, 1916, and 26734, Nov. 12, 1917, re G.T.R. crossing protection at Coteau, Que.

27112. Apr. 4.—Dismissing complaint of R. W. Hannah, Toronto, that G.T.R. refuses to apply special mileage tariff rates on potatoes between its stations on shippers' circuitous routing.

27113. Apr. 5.—Establishing collection and delivery limits of express companies in Walkerville, Ont.

27114. Apr. 8.—Ordering Canadian Northern Ry. not to exceed 18 miles an hour on tangents and 12 miles an hour on curves with trains from Lobstick Jct. to Chip Lake, Alta.

27115. Apr. 9.—Authorizing Canadian Northern Ry. to build spur for Seranton Coal Co., Drumheller, Alta.

27116. Apr. 9.—Approving Western Canada Telephone Co.'s bylaw, Mar. 30, re issue of tariffs.

27117. Apr. 9.—Approving London & Port Stanley Ry. standard freight tariff of maximum mileage tolls, C.R.C. 176, and standard passenger tariff, C.R.C. 115, effective Apr. 15.

27118. Apr. 9.—Dismissing application of Canadian Consolidated Rubber Co., Montreal; Good-year Tire & Rubber Co.; Dunlop Tire & Rubber Co., and Gutta Percha & Rubber, Ltd., Toronto, for carload rating on rubber boots, etc., and authorizing corrections in certain classifications.

27119. Apr. 9.—Authorizing C.P.R. to build spur for Canadian Ingersoll-Rand Co., Sherbrooke.

27120. Apr. 9.—Authorizing Canadian Collieries (Dunsmuir), Ltd., to build mining slope under Esquimalt & Nanaimo Ry., at South Wellington, B.C.

27121. Apr. 10.—Approving Lake Erie & Northern Ry. standard freight tariff of maximum mileage tolls, C.R.C. 103, and standard passenger tariff, C.R.C. 23, effective Apr. 15.

27122. Apr. 11.—Authorizing C.P.R. to build spur for Imperial Oil, Ltd., Calgary, Alta.

27123. Apr. 11.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to build bridge over Brunette River, New Westminster, B.C.



27124. Apr. 12.—Authorizing Vancouver Power Co. to cross with its tracks the Vancouver, Victoria & Eastern Ry. & Nav. Co.'s tracks in District Lots 2 and 3, Group 2, South Westminster, B.C.

27125. Apr. 11.—Rescinding orders 26865 and 27001, Dec. 26, 1917, and Feb. 18, 1918, re Canadian Northern Ry. train service, Toronto to Nanawane, Ont.

27126. Apr. 12.—Amending order 26972, Feb. 9, re Grand Trunk Pacific Ry. operation of trains between Lobstick Jct. and Chip Lake, Alta.

27127. Apr. 15.—Authorizing Grand Trunk Pacific Brand Lines Co. to build across and divert highway at mileage 107.3, Prince Albert rural municipality, 461, Sask.

27128. Apr. 17.—Ordering C.P.R. to build interchange track with G.T.R. at Guelph, Ont., plan to be submitted by C.P.R. within one week from date, and reserving question of apportionment of cost.

27129. Apr. 16.—Ordering Canadian Northern Ry. to build culvert 14 x 28 in. under spur serving Quaker Oats Co., Neepawa, Man.; to be completed by May 15.

27130. Apr. 19.—Approving clearances at siding for William Davies Co., Don, Toronto.

27131. Apr. 18.—Authorizing Canadian Northern Ry. to build spur for Pointe Anne Quarries, Ltd., Thurlow Tp., Ont., and rescinding order 25767, Dec. 28, 1916.

27132. Apr. 17.—Authorizing G.T.R. to use bridge carrying North Front St., Belleville, Ont., over its main line.

27133. Apr. 16.—Authorizing C.P.R. to divert road allowance on southern boundary of s.w. 1/4 sec. 26, Tp. 40, range 23, west 3rd meridian, Sask.

27134. Apr. 16.—Authorizing G.T.R. to take up portions of sidings on Toronto Harbor Commissioners' property, Ashbridges Bay, serving Canadian Stewart Co., and relay same on locations shown on plan 172, R.Y.E., Jan. 31, 1918.

27135. Apr. 16.—Approving agreement, Apr. 6, between Bell Telephone Co. and Allenford Rural Telephone Co., Bruce and Grey counties, Ont.

27136. Apr. 18.—Ordering Windsor, Essex & Lake Shore Rapid Ry. to move derrails at crossing of Pere Marquette Ry., at Pelton, Ont., so they will be 200 ft. from diamond; signals to points 50 ft. beyond derrails or 250 ft. from diamond; to be completed by June 30.

27137. Apr. 17.—Ordering Canadian Northern Ry. to erect 3rd class station at Sturgis, Sask., to be completed by Oct. 1.

General order 228, Apr. 16.—Amending general order 227, Apr. 12, re change of time (daylight saving) on railways, by substituting "Thursday," Oct. 31, for "Friday," Oct. 31.

## Daylight Saving on the Railways.

The United States Director General of Railroads issued the following general order, Mar. 25:—

The American Railway Association's Committee on Transportation, having at the request of the Director General, submitted to report in connection with the federal law to save daylight and to provide standard time for the U.S., which becomes effective on Mar. 31, at 2 a.m., the following instructions, based on such report, are issued:

On Mar. 31, all clocks and watches in train dispatchers' offices, and in all other offices open at that time, must be advanced one hour to indicate 3 a.m.

Employees in every open office must, as soon as the change has been made, compare time with the train dispatcher. Clocks and watches in all offices, at the first opening, at or after the time the change becomes effective, must be advanced to conform to the new standard time, and employees, before assuming duties in such offices, must, after the change is made, compare time with the train dispatcher.

Each railway will issue necessary instructions and arrange for such supervision and check of its employees' watches as to insure that they have been properly changed to conform to the new standard time.

Owing to the varying conditions which will prevail on railways, it is not advisable to issue a uniform rule or order to cover the details involved in the movement of trains at the period the change in standard time becomes effective. Therefore, each railway must adopt such measures as may be necessary to properly

safeguard the movement of its trains on the road at the time of the change.

## Canada's Daylight Saving Act.

The following act was passed by the Dominion Parliament early in April and was assented to immediately:

"1. This act may be cited as The Daylight Saving Act, 1918.

"2. During the prescribed period in each year in which this act is in force, the time, for general purposes in Canada, in each province, shall be one hour in advance of the time which under the law of the province is the time prescribed for such province, and, if there is no time so prescribed, of the accepted standard time.

"3. This act shall be in force during the present year for such time as may be prescribed by the Governor in council.

"4. Wherever any expression of time occurs in any statute, order in council, order, regulation, rule or bylaw, or in any deed, time table, notice, advertisement or other document, the fixing of the time with respect to which is within the legislative jurisdiction of the Parliament of Canada, the time mentioned or referred to shall be held during the prescribed period, to be the time as fixed by this act. Provided, that where, in consequence of this act, it is expedient that any time fixed by any bylaw, regulation or other instrument should be adjusted, and such adjustment cannot be effected except after the lapse of a certain interval or on compliance with certain conditions, the Governor in council may, on the application of the body or person by whom the bylaw, regulation or other instrument was made or is administered, make such adjustment from the time so fixed as in the circumstances may seem to the Governor in council proper.

"5. The Board of Railway Commissioners for Canada shall have power to advance by one hour the standard time used by railway companies, including Government railways, in Canada, for such period as may be prescribed by the said board, and to make such orders as may be necessary for the convenient carrying out of the provisions of this act in so far as railway companies may be affected thereby."

An order in council was passed at Ottawa April 12, providing that the act quoted above shall be in force from April 14, at 2 a.m., to Oct. 31, 1918, at 2 a.m.

The Board of Railway Commissioners passed general order 227, April 12, ordering all railway companies in Canada, including Government railways, to advance by one hour the standard time now observed and used by them in the different zones in which they operate; the said change to become effective on the respective railways and in the said different zones not before 12 o'clock Saturday evening, April 13, and not later than 2 o'clock Sunday morning, April 14, and to remain in force and effect until 2 o'clock on Thursday morning, Oct. 31, 1918.

**Parliamentary Railway Committees.**—Jos. E. Armstrong, M.P. for East Lambton, Ont., has been elected chairman of the House of Commons Railway Committee, and Senator Blain, chairman of the Senate Railway Committee for the current session. Senator Blain was chairman of the Railway Committee of the House of Commons for several years prior to being called to the Senate in 1917.

The Great North Western Telegraph Co. has opened offices at Little Metis Lighthouse, Thamesville, Ont., and Sylvan Lake, Alta., and has closed its offices at St. Genevieve de Batiscan, Que., and Madoc, Ont.

## Closing of United States Railway Freight and Passenger Offices.

The U.S. Director General of Railroads issued the following instructions to the regional directors early in April:—

"Discontinue the separate city freight or passenger offices where the public may be adequately served at the depot. This applies particularly. Consolidate or group all city ticket offices, placing the union office in convenient location, where rental is reasonable, providing sufficient space to properly accommodate the public. Cancel all arrangements with tourists or other similar agencies for solicitation of passengers or sale of tickets. Discontinue all off-line traffic offices.

"Employees released as result of above to be assigned to other duties to the extent possible. Some now employed in off-line offices will be needed by local line to strengthen its traffic forces, in order to properly care for the additional work which will result from the above changes.

"The functions and services formerly performed by the off-line offices in protecting the needs of the public will be incorporated in the offices of the initial lines.

"Separate off-line traffic offices were created by the various transportation interests on account of existing keen competition for passenger and freight traffic, and were practically headquarters for soliciting agents, who were stationed in all commercial districts for the purpose of protecting the interests of the carriers by whom they are employed. Now there is no competition, which eliminates need for solicitation by the individual carriers. The policy is one of efficiency, with all possible retrenchment and economy consistent with protecting the best interests of the public.

"The employees released from their present duties, as a result of this, are to be assigned to other duties as far as possible with the same road. Some now employed in off-line offices will be needed by the local lines to strengthen other traffic forces to properly take care of the additional work entailed upon the initial lines on account of this change. In making this readjustment it is intended to work as little hardship as possible upon the employees concerned. Many of these men have been in the service of their respective lines for long periods and their railroad insurance and pension rights will be protected.

"No community will be deprived of adequate sources of information and advice as to matters connected with passenger and freight service. It will be a necessity for the lines directly serving each locality to see that their offices are manned and equipped to furnish the needed information and advice. This to include the issuance of through bills of lading, quotation of rates, passing reports of cars en route, advice to prospective passengers, and all other necessary information heretofore furnished by the off-line offices."

In accordance with the foregoing instructions, Canadian offices maintained by U.S. railways and the solicitation of business in Canada will be discontinued. At the time of writing, Apr. 26, the situation regarding the closing of all the offices, and the disposition of the various staffs, is not sufficiently clear to enable definite information to be obtained. It was at first thought that U.S. railways, which own, or control, lines in Canada, would be permitted to continue to maintain their offices, but it developed later that the order is intended to apply to all railways.



These offices will therefore be closed on or about Apr. 30, but it is possible that in one or two cases, there will be some little extension of time, to enable some outstanding business matters to be cleared up. It is felt in some quarters that the execution of the order will work considerable hardship on staffs in some cases, and, in many cases will leave the railways with unexpired office leases on their hands, which, under present conditions, are not easy to dispose of.

### Canadian Northern Railway Construction, Betterments, Etc.

A Montreal report states that the excavation work yet to be done on the company's tunnel at Montreal can be finished by May 31, and that the remaining track work can be completed within a month thereafter. It is thought likely that things will be ready for running trains through the tunnel into the temporary station on Lagachetiere St. during July.

The Alberta Railways Department's report, presented to the legislature recently, shows that of the \$11,022,000 of bonds authorized to be issued, with the guarantee of the province, for the construction of branch lines, the bonds marketed produced \$8,800,000, of which \$7,658,256 had been paid over to the C.N.R. The provincially guaranteed bonds authorized to be issued in respect of lines to be built by the Canadian Northern Western Ry. amounted to \$11,222,250. The securities marketed realized \$5,437,434, of which \$4,095,046 had been paid over to the company.

A spur line is reported to have been built to the Brule Lake coal fields in Northern Alberta, and a freight and passenger traffic is said to be in operation over it. The coal mines at this point expect, a press report says, to be able to ship 1,000 tons a day by the autumn.

After having been under discussion on several occasions from its first introduction Mar. 19, the British Columbia Legislature, on April 2, passed a resolution stating that the Canadian Northern Pacific Ry. had entered into contracts with the B.C. Government for the construction of certain railways; that the C.N. Ry. owned the entire share capital of the C.N.P. Ry., and that the latter company had made default in carrying out its contracts, and expressed the view that before any payment to the owners of the C.N. Ry. shares be made, the obligations to the province should be fulfilled.

The company's freight sheds on False Creek flats at Vancouver are reported completed, and the local freight staff have taken possession of their offices. The freight yards are connected by inter-switching arrangements with the C.P.R. and the Great Northern Ry. It is expected that the passenger station on the same site will be ready for occupation during July. (April, pg. 143.)

The Board of Railway Commissioners has suspended the Dominion Ex. Co.'s supplementary tariff respecting cartage delivery to customers' premises, of fish, in carloads, from Western Canada. The company contended that the rate from Western Canada was an extremely low one, and that it was never intended to include cartage of carload lots. The previous tariff, including free cartage, is maintained, and it was pointed out that though specific reference was made to the Dominion Ex. Co., all express companies are bound by the judgment.

## Traffic Orders by Board of Railway Commissioners.

### Increases in Electric Railway Freight and Passenger Rates.

Orders passed by the board, authorizing increases in freight and passenger rates on several electric railways, are given in the electric railway department of this issue on pages 205 and 206.

### Transportation of Explosives.

General order 223. Mar. 28. Re general order 204, Aug. 11, 1917, authorizing for the observance of railway companies which accept explosives for carriage, the Revised Regulations for the Transportation of Explosives, as amended and filed by letter dated Dec. 16, from the Chairman of the Canadian Freight Association. Upon reading what is filed on behalf of the Canadian Freight Association, it is ordered that paragraph 1644, (b) and (c), of the said regulations be amended to read as follows:

"1644 (b). Dangerous explosives for which a certified and placarded car is prescribed (see paragraph 1661), must not be loaded higher than the car lining.

"(c) When the lading of a car consists of or includes explosives, the weight of the lading should be distributed so that it will be equalized on each side of the car and over the trucks."

### Classification of Oleomargarine.

General order 224. Mar. 27. Re general order 222, Mar. 19, 1918, requiring that tariffs of Pere Marquette Ry. and Canadian Pacific, Grand Trunk, and Canadian Northern Railways, providing for transportation of packing house products, fresh meats, and other articles in pedlar cars, be revised so as to include oleomargarine as a packing house product. Upon reading what is filed on behalf of the Canadian Manufacturers' Association, it is ordered that the said general order be amended by adding the following words thereto, namely: "the said tariffs to become effective April 15, 1918."

### Bill of Lading for Munitions.

General order 225. April 3. Re application of Canadian Freight Association, on behalf of all railway companies subject to legislative authority of the Dominion Parliament, Canada, under sec. 340 of the Railway Act, and such other sections as may be applicable thereto, for an order approving the form of bill of lading issued by the United States Government, for use in respect of all shipments of munitions, war materials, and supplies by or on behalf of the said government, or any of its contractors; and providing that, notwithstanding the provisions of general order 41, July 15, 1909, the form herein referred to may be used by all such railway companies in respect of such shipments. Upon reading what is filed in support of the application, and its appearing that the said bill of lading is made subject to the conditions of the bill of lading approved by general order 41, it is ordered that the said form of bill of lading issued by the United States Government be approved, and that, notwithstanding the provisions of general order 41, the form herein approved may be used by all such railway companies in respect of the said shipments of munitions, war materials, and supplies.

### Potatoes Circuitously Routed.

27112. Re complaint of R. W. Hannah of Toronto, that the G.T.R. refuses to apply its special mileage tariff rates on potatoes between its stations on shippers' circuitous routing. Upon hearing the complaint at Toronto, Feb. 15, 1918, the complainant and the railway company be-

ing represented at the hearing, the complainant also appearing in person, and what was alleged, it is ordered that the complaint be dismissed.

### Classification of Rubber Goods.

27118. April 9. Re application of Canadian Consolidated Rubber Co., Montreal; Goodyear Tire & Rubber Co. of Canada, Toronto; Dunlop Tire & Rubber Goods Co., Toronto; and Gutta Percha & Rubber, Limited, Toronto, for revision of ratings of rubber and rubber articles as they appear in Canadian Freight Classification 16. Upon hearing the application at Ottawa, Nov. 20, 1917, the applicants, Canadian Manufacturers' Association, Canadian Freight Association, Toronto Board of Trade, and the Grand Trunk, Canadian Pacific, and Canadian Northern Railways, being represented; and upon the report and recommendation of the board's Chief Traffic Officer, it is ordered:

That the application for a carload rating on rubber boots, shoes, and socks be refused.

That item 32, page 122, of Canadian Classification 16, be corrected to read as follows:

	L.C.L.	C.L.
"Tires, solid, on reels or spools, burlapped .....	1	3"

That item 16, page 21, and item 30, page 35, of Supplement 10 to Canadian Freight Classification 16, be corrected to read as follows:

	L.C.L.	C.L.
"Tires, pneumatic, including inner tubes:		
"In bales or bundles, burlapped..	1 1/2	
"In boxes or crates.....	1	
"Loose or in packages named c.l. minimum weight 16,000 lb. (see note) .....		2
"Note: When shipped loose, must be loaded and unloaded by owners."		

And it is further ordered that the changes herein mentioned be made effective in Supplement 11 to Classification 16, now before the board for approval.

### Railway Finance, Meetings, Etc.

**Algoma Central & Hudson Bay Ry.**—The London, Eng., Stock Exchange Committee has ordered the following securities to be quoted in the official list:—A.C. & H.B.R. 1st mortgage 5% 50 year gold bonds, stamped under the scheme of arrangement, in lieu of deposit receipts now quoted; Algoma Central Terminals 5% 1st mortgage 50 year gold bonds, stamped under the scheme of arrangement.

**Timiskaming & Northern Ontario Ry.** Revenue from passenger traffic for February, \$38,859.36; from freight traffic, \$109,393.20; total revenue, \$148,252.56, against \$37,928.31 passenger traffic; \$99,715.42 freight traffic; \$137,643.73 total revenue for Feb., 1917. Aggregate total revenue for two months ended Feb. 28, \$308,894.28, against \$284,320.04 for same period 1917.

**White Pass and Yukon Route.**—Gross earnings from Jan. 1 to Jan. 21, \$8,626, against \$15,740 for same period 1917.

**Railway Lands Patented.**—Letters patent were issued in March for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres
Alberta & Great Waterways Ry.....	123.97
Calgary & Edmonton Ry.....	2,874.83
Canadian Northern Ry.....	804.00
Canadian Pacific Ry.....	9,015
Grand Trunk Pacific Branch Lines Co....	5.57
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.....	7,607.66
Total .....	11,425.045



# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canada Atlantic Transit Co. of United States.**—C. A. GORMALY, Commercial Agent, G.T.R., Chicago, Ill., has had his duties extended to include traffic, except bulk grain, via C.A.T. Co., and reports to General Agent, Boston, Mass., on westbound, and to Freight Traffic Manager, Montreal, on eastbound traffic.

H. W. PLOSS, Commercial Agent, G.T.R., Milwaukee, Wis., has had his duties extended to include traffic, except bulk grain, via C.A.T. Co., and reports to General Agent, Boston, Mass., on westbound, and to Freight Traffic Manager, Montreal, on eastbound traffic.

**Canada Steamship Lines, Ltd.**—N. VAN WYCK, heretofore Freight Claims Agent, Montreal, has been appointed Purchasing Agent, vice Peter Paton, resigned to enter private business. Office, Montreal.

R. V. ROBINSON, heretofore General Freight Agent, Northern Navigation Co., Sarnia, Ont., has been appointed Freight Claims Agent, C. S., Ltd., vice N. Van Wyck. Office, Montreal.

**Canadian Government Railways.**—M. McLEARN, heretofore Chief Dispatcher, Truro, N.S., has been appointed acting Assistant Superintendent, District 2, Intercolonial Division, vice S. B. Wass, assigned to other duties in engineering department at Moncton, N.B.

S. B. WASS, A.M.Can.Soc.C.E., heretofore Assistant Superintendent, District 2, Intercolonial Division, South Devon, N.B., has been assigned to duties in engineering department, Moncton, N.B.

E. B. ROBB, heretofore Travelling Freight Agent, Montreal, has been appointed Division Freight and Passenger Agent, Transcontinental Division, with territory from O'Brien, Que., to Graham, Ont. Office, Cochrane, Ont.

W. PRIEST has been appointed foreman of passenger car yard, Transcona, Man., vice J. Hughes, who has left the service.

M. IRWIN has been appointed foreman of paint shop, Transcona, Man., vice M. Morrow, who has left the service.

**Canadian Northern Ry.**—V. DAVIES has been appointed Supervisor, Boarding Car Department, which has been organized for boarding extra gangs on Eastern Lines. Office, Toronto.

P. COTTON has been appointed Inspector, Western Lines, Sleeping, Dining and Parlor Car, Hotel and News Department, with headquarters at Winnipeg.

B. GRIERSON, chief clerk to General Agent, Minneapolis, St. Paul & Sault Ste. Marie Ry., Winnipeg, is reported to have been appointed chief clerk to District Freight Agent, C.N.R., Winnipeg, vice A. Sinclair, transferred to general freight department.

P. McLELLAN has been appointed Trainmaster, Kamloops Jct., B.C., vice P. K. Manahan, assigned to other duties.

**Canadian Pacific Ry.**—W. WELLS, heretofore Master Mechanic, Schreiber Division, Algoma District, Schreiber, Ont., has been appointed Master Mechanic, Farnham Division, Quebec District, vice L. L. Craig, transferred. Office, Farnham, Que.

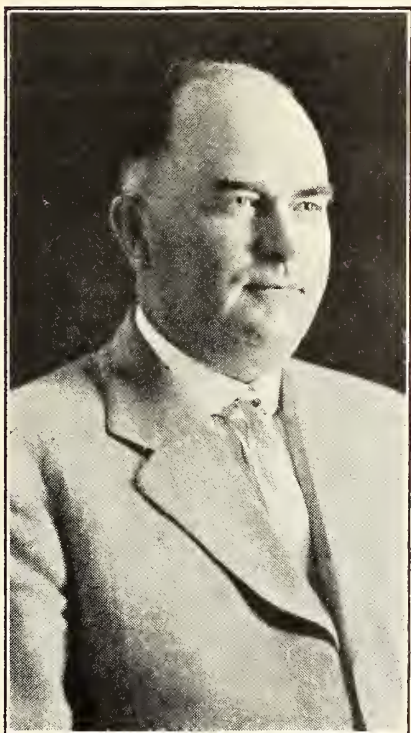
H. J. HUMPHREY, heretofore Superintendent, Brownville Division, New Brunswick District, Brownville Jct., Me.,

has been appointed Superintendent, Laurentian Division, Quebec District, vice W. Tansley, transferred. Office, Montreal.

W. E. MCGILL, heretofore Assistant



P526  
C. G. Bowker,  
General Superintendent, Ontario Lines, Grand  
Trunk Railway.



P524  
W. R. Davidson,  
General Superintendent, Eastern Lines, Grand  
Trunk Railway.

Superintendent, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Assistant Superintendent, Montreal Terminals Division, Quebec District,

vice J. B. Blair, transferred. Office, Montreal.

J. B. BLAIR, heretofore Assistant Superintendent, Montreal Terminals Division, Quebec District, Montreal, has been appointed Superintendent, Farnham Division, Quebec District, vice J. H. Boyle, transferred. Office, Farnham.

E. J. WORTH, heretofore Chief Dispatcher, Laurentian Division, Quebec District, Montreal, has been appointed Night Chief Dispatcher, Smiths Falls Division, Quebec District, Smiths Falls, Ont.

J. FLYNN has been appointed Car Foreman, Smiths Falls, Ont., vice J. A. Leaman, resigned.

K. K. DONNELLY has been appointed Purchasing Agent, Vancouver, B.C., vice J. T. H. Ferguson, deceased.

H. M. S. SPEDDING has been appointed ticket agent, Vancouver wharf, vice J. A. Brown, transferred.

H. M. BEYERS has been appointed City Passenger Agent, Spokane, Wash., vice J. F. Speakman, resigned.

**Erie Rd.**—In accordance with the recent order of the U.S. Director General of Railroads, the company's Canadian offices were closed Apr. 27. M. MacGREGOR, heretofore General Canadian Agent, Toronto, has been attached temporarily, to the Assistant General Freight Agent's staff at Buffalo, N.Y. G. S. FORSTER, heretofore Contracting Agent, Toronto, has left the service to enter private business in Toronto.

**Grand Trunk Ry.**—W. R. DAVIDSON, heretofore General Superintendent, Western Lines, Chicago, Ill., has been appointed General Superintendent, Eastern Lines, vice C. G. Bowker, transferred. Office, Montreal.

J. W. FARRELL, heretofore Trainmaster, Districts 1, 2 and 3, Montreal Division, Eastern Lines, Richmond, Que., has been appointed Trainmaster, District 1, Montreal Division, Eastern Lines. Office, Island Pond, Vt. The position of Assistant Trainmaster, Districts 1 and 2, has been abolished.

N. P. NORTH has been appointed Trainmaster, Districts 2 and 3, Montreal Division, Eastern Lines. Office, Richmond, Que.

C. G. BOWKER, heretofore General Superintendent, Eastern Lines, Montreal, has been appointed General Superintendent, Ontario Lines, vice H. E. Whittenberger, transferred. Office, Toronto.

H. E. WHITTENBERGER, heretofore General Superintendent, Ontario Lines, Toronto, has been appointed General Superintendent, Western Lines, vice W. R. Davidson, transferred. Office, Chicago, Ill.

**Grand Trunk Pacific Ry.**—A. D. CAREY, heretofore Assistant Superintendent, Biggar, Sask., has been appointed Assistant Superintendent between Prince George and Prince Rupert, B.C. Office, Smithers.

**Northern Pacific Ry.**—J. M. RAPELJE, heretofore General Manager, has been appointed acting Vice President in charge of operation, vice G. T. SLADE, now Major in the U.S. Railway Transportation Corps, who has received indefinite leave of absence.

A. M. BURT, heretofore Chief Engineer, Maintenance of Way, has been appointed acting General Manager, east of Paradise, vice J. M. Rapelje, and his former duties are for the present consolidated with those of the Chief Engineer, H. E. Stevens.



# Railway Rolling Stock Orders and Deliveries.

## Dominion Government Rolling Stock Orders.

In the House of Commons, on April 9, the Minister of Railways moved: "That it is expedient to provide that during the present war and for one year thereafter, the Minister of Railways and Canals, with the approval of the Governor in council, may acquire engines, cars, rails and other railway equipment and materials, and may sell, lease or otherwise dispose of any such equipment to any Canadian railway company, or companies, upon such terms and conditions as may be approved by the Governor in council, and may defray all expenditure made hereunder out of any unappropriated moneys in the Consolidated Revenue Fund of Canada; and that for the payment in whole or in part of any such equipment the Minister of Finance, with the approval of the Governor in council, may issue equipment notes or other obligations or securities, or may guarantee the principal and interest of any securities issued by any company approved by the Governor in council; and the times and manner of the issue of such securities, and the forms and terms thereof or of any trust deed, lease or other instrument incidental thereto, and the trustees shall be approved by the Governor in council, and the provisions of section 4 of chap. 38 of the statutes of 1907 shall apply to any instrument relating to such equipment executed under the terms hereof, and such securities shall be made payable by instalments, the last instalment to be made payable on or before the expiry of 10 years from the issue thereof and further, to provide that the Minister may transfer to the Canadian Government Railways any equipment so acquired, and in such event there shall be charged to the accounts of the said railways such amounts as may properly be chargeable therefor, and the provisions of the Consolidated Revenue and Audit Act shall, as far as applicable, extend to the accounts and charges incurred hereunder."

In moving the resolution, the Minister said:—"Owing to the government taking over the Canadian Northern Ry. and requiring more equipment for the government railway, and on account of the war, owing to other railways requiring equipment, it is necessary for the government to purchase and finance this equipment. In doing so, we wish to have the power, after purchasing it, to lease or sell it to railways, other than the government railways, that may require further equipment. In purchasing this equipment, we wish to be in the same position as other railways are at present in making such purchases. For instance, other railways, such as the Canadian Pacific, the Canadian Northern and the Grand Trunk, are in a position to issue equipment bonds and in that way not pay the full purchase price of the equipment at the time delivery is made. By issuing equipment bonds they can spread the payment over a term of years. It certainly makes it very difficult for the government to finance the purchase of equipment when it is called upon to pay a very large amount in one year at the present time. For instance, last year the Railways Department ordered 150 locomotives and 6,000 or 7,000 cars. We put the amount in the estimates, and of course we were compelled to pay the amount of the equipment delivered last year. We received the equipment, and we leased portions of it to the Grand Trunk and Canadian Northern

Railways. The C.P.R. got four or five of our large locomotives, and the others went to the Canadian Government Railways. If we had not purchased that equipment, we would have been in a very serious position during last winter, on account of not having sufficient motive power. The other day we had, in order to protect the transportation situation during the coming winter, and for the future, on account of the heavy movement of troops and so on, to give orders for a very large quantity of locomotives, cars and other railway equipment. We had to order 100,000 tons of rails that will cost \$5,000,000 or \$6,000,000. We want to be in a position to pay for the equipment and then transfer it to other railways by sale or lease. The purchase of the items that come under the bill to be based on this resolution will be all done in the regular way by tender and order in council, and any lease or sale will be done by order in council in the usual way."

After considerable discussion, during which several members, most of them opponents of the government, objected to giving the power asked, for more than one year, or for a greater expenditure than \$50,000,000, the Minister agreed to strike out of the third line of the resolution as printed above, the words "war and for one year thereafter" and to substitute the words "fiscal year"; also to add in the seventh line of the resolution as printed above, after the word "materials," the words "to an amount not exceeding fifty million dollars." The effect of the change is that the authorization for the purchase of locomotives, cars, rails, and other railway equipment and material, is limited to the current fiscal year, and to an amount not exceeding \$50,000,000. The resolution, as amended, was carried, and the Minister immediately introduced a bill based thereon, which was read a first time and was passed by the House of Commons on April 12.

In the course of the discussion above referred to, the Minister gave particulars of orders he had placed for rolling stock this year, which confirmed the information in regard to the same as published in Canadian Railway and Marine World for March and April, and which is recapitulated further on with some additional information with which we have since been supplied officially. The Minister, in speaking of the distribution of the rolling stock ordered, said:—"There will be a small amount for the Canadian Government Railways, which, of course, include the National Transcontinental between Moncton and Winnipeg, as well as the Intercolonial and Prince Edward Island Railways. The largest portion of it, however, is for the Canadian Northern and Grand Trunk. Seventy five of the locomotives ordered are for the Grand Trunk. Last year we purchased 100 or 150 locomotives, and the Grand Trunk got 45 or 47 of them. So that we are really providing equipment for the Grand Trunk."

In answer to a question as to further purchases of rolling stock, the Minister said:—"Outside of what I have read, the only equipment that I contemplate purchasing is as follows: A requisition has been made on me for 10 or 15 snow ploughs, which might probably cost \$100,000. I have been urged by the Canadian Railway Association for National Defence, the organization representing all the railways in Canada, to purchase 100 tourist cars. At present, speaking from memory, there are probably 600 or 700

cars owned by all the railways in Canada that are available for the transport of troops to and from the seaboard, and I have been discussing the proposed purchase of 100 additional cars with Sir George Bury, of the Canadian Pacific, with a view to ascertaining if we cannot get along without any more equipment of the kind. We have also been asked to purchase 19 baggage cars to be used in connection with the movement of troop trains to and fro, and it may be requisite to acquire a few more things of that kind."

## Details of Dominion Government Orders.

Following is a complete list of the rolling stock ordered by the government this year, as originally published in Canadian Railway and Marine World in March and April, with additional information of further orders placed, dates for delivery and as to its distribution between the Canadian Government Railways, Canadian Northern Ry. and Grand Trunk Ry. These are the first complete details of these orders published and may be relied on, as the greatest care has been exercised in their compilation, and the figures have been checked by the Railways Department officials.

Canadian Car & Foundry Co., Montreal, 5,000, forty-ton, standard, steel frame, single sheathed, box cars, \$2,750 each, \$13,750,000. For Canadian Northern Ry. Delivery to begin three months from date of order and to be completed by Sept. 30.

Canadian Car & Foundry Co., Montreal, 300 thirty-ton stock cars, with steel draft arms, \$2,271 each, \$681,300. Air brakes and couplers to be supplied by the government. For Canadian Northern Ry. Delivery to be completed by Aug. 1.

The Canadian Car & Foundry Co., 250 standard, all wood, refrigerator cars, with metal draft arms, \$4,097 each, \$1,024,250. Of these 100 are for Canadian Government Railways and 150 for Canadian Northern.

Eastern Car Co., New Glasgow, N.S., 750 steel, underframe, 41-ft., 40-ton, flat cars, \$2,370.40 each, \$1,777,800. Of these 250 are for Canadian Government Railways and 500 for Canadian Northern. Delivery to start by June 15 and to be made at rate of 10 cars a day.

Eastern Car Co., 650, fifty-ton, enterprise composite coal cars, \$3,179.50 each, \$2,066,675. Of these 400 are for Canadian Government Railways and 250 for Canadian Northern. Delivery to start by June 15 and to be made at rate of 10 cars a day.

Hart-Otis Car Co., 200 all wood ballast cars, with side and centre dump, \$3,125 each, \$625,000. For Canadian Government Railways. The Hart-Otis Car Co. to commence delivery during June and complete it before July 31.

Hart-Otis Car Co., Montreal, 250 all wood ballast cars, with side dump only, \$3,040 each, \$760,000. For Canadian Northern Ry.

National Steel Car Co., Hamilton, Ont., 1,000, forty-ton steel frame box cars, \$2,750 each, \$2,750,000. For Canadian Northern Ry. Delivery to be completed by Sept. 15.

Pressed Steel Car Co., New York, 25 tank cars, 8,000 imp. gal., with 50-ton trucks, etc., for general service, \$3,926 each, f.o.b. Pittsburg District, \$98,150. For Canadian Government Railways.

Pressed Steel Car Co., New York, 25 tank cars, 8,000 imp. gal., with 50-ton trucks, for water service, \$3,770 each,



# Canadian Railway AND Marine World

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## NOTICE TO ADVERTISERS.

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f.o.b. Pittsburg District, \$94,250. For  
Canadian Northern Ry.

The Pressed Steel Car Co. is to begin  
delivery within 150 working days of set-  
tlement of all terms, and to continue at  
average rate of three cars per working  
day thereafter.

Pullman Co., Chicago, 14 sleeping cars,  
\$35,890 each, f.o.b. Chicago, \$502,460. For  
Canadian Government Railways. Deliv-  
ery in June and July.

Pullman Co., Chicago, 7 dining cars,  
\$34,100 each, f.o.b. Chicago, \$238,700. For  
Canadian Government Railways. Deliv-  
ery in June and July.

Pullman Co., Chicago, 15 second hand  
parlor cars, \$3,000 each, \$45,000. Of  
these 11 are to be delivered f.o.b. tracks,  
Buffalo, N.Y., and 4 f.o.b. tracks, Chi-  
cago. Ten of them are to be converted  
into express refrigerator cars for carry-  
ing fruit and fish on Canadian Govern-  
ment Railways, and 5 are to be converted  
into baggage cars for Canadian Northern  
Ry.

Canadian Locomotive Co., Kingston,  
Ont., 6 six-wheel 0-6-0 switching locomotives,  
equipped with Schmidt superheater, 251,000 lb.  
in working order, \$41,000 each,  
\$246,000. For Intercolonial Division, Cana-  
dian Government Railways. Delivery f.  
o. b. C.G.R. tracks, Montreal.

Canadian Locomotive Co., Kingston,  
Ont., 4 ten-wheel 4-6-0 locomotives, equip-  
ped with Schmidt superheater, 162,000 lb.  
in working order, with tender, 3½ ft.  
gauge, \$34,020 each, \$136,080. For Prince  
Edward Island Division, Canadian Govern-  
ment Railways. Delivery in June, f.o.b.  
C.G.R. tracks, Montreal.

Canadian Locomotive Co., Kingston,  
Ont., 60 Mikado freight locomotives,  
\$62,000 each, \$3,720,000. Of these, 10 are  
for Canadian Government Railways, 40  
for the Grand Trunk and 10 for the Grand  
Trunk Pacific.

Canadian Locomotive Co., Kingston,  
Ont., 10 switching locomotives, \$40,500  
each, \$405,000. For Canadian Northern  
Ry.

Delivery of the Canadian Locomotive  
Co.'s order for Mikados and switchers is  
to commence July 1 and be completed not  
later than Dec. 31.

Montreal Locomotive Works, Montreal,  
50 consolidation freight locomotives,  
\$58,000 each, \$2,900,000. For Canadian  
Northern Ry.

Montreal Locomotive Works, Montreal,  
30 Pacific passenger locomotives, \$60,000  
each, \$1,800,000. For Canadian Govern-  
ment Railways.

Delivery of the Montreal Locomotive  
Works orders is to be made at the rate of  
30 locomotives a month, beginning Sept.  
1, and to be completed by Dec. 31.

Summary of Orders Placed by Dominion Govern-  
ment.

Canadian Car & Foundry	Price each.	Total.
Co.		
5,000 box cars.....	\$2,750.00	\$13,750,000
300 stock cars.....	2,271.00	681,300
250 refrigerator cars.....	4,097.00	1,024,250
Eastern Car Co.		
750 flat cars.....	2,370.40	1,777,800
650 coal cars.....	3,179.50	2,066,675
Hart-Otis Car Co.		
200 ballast cars.....	3,125.00	625,000
250 ballast cars.....	3,040.00	760,000
National Steel Car Co.		
1,000 box cars.....	2,750.00	2,750,000
Pressed Steel Car Co.		
25 tank cars.....	3,926.00	98,150
25 tank cars.....	3,770.00	94,250
Pullman Co.		
14 sleeping cars.....	35,890.00	502,460
7 dining cars.....	34,100.00	238,700
15 parlor cars (second hand) .....	3,000.00	45,000
Canadian Locomotive Co.		
6 switching locomotives .....	41,000.00	246,000
4 narrow gauge loco- motives .....	34,020.00	136,080
60 mikado locomotives .....	62,000.00	3,720,000
10 switching locomotives .....	40,500.00	405,000

Montreal Locomotive Works.

50 consolidated loco- motives .....	58,000.00	2,900,000
50 Pacific locomotives .....	60,000.00	1,800,000
		\$33,620,665

It is probable that tenders will be asked  
for at once for from 20 to 30 snow ploughs  
for the Canadian Government and Cana-  
dian Northern Railways. Nothing is be-  
ing done at present about the 100 tourist  
cars and 19 baggage cars which the Min-  
ister of Railways spoke of in the House  
of Commons on April 9.

## General Railway Rolling Stock Notes.

Canadian Government Railways have  
received 13 mikado type locomotives from  
Canadian Locomotive Co.

The C.P.R. has received 4 decaped loco-  
motives from its Angus shops, Montreal.

The C.P.R. has ordered 100 steel under-  
frame box cars from its Angus shops,  
Montreal.

The Canadian Northern Ry. has re-  
ceived 373 steel frame box cars from  
National Steel Car Co. These are a por-  
tion of an order placed with the company  
by the Dominion Government for 1,000  
cars, 500 of which have been assigned to  
the C.N.R.

The Canadian Northern Ry.'s wooden  
stock cars, of which 300 have been or-  
dered by the Dominion Government, as  
mentioned in our last issue, will have cast  
steel draft arms, and will be the same as  
those now under construction by the  
Canadian Car & Foundry Co., details of  
which have been given in a previous issue.

The G.T.R. has already received 37  
mikado locomotives and is to get 5 more  
out of the order given by the Dominion  
Government last year to Canadian Loco-  
motive Co. The G.T.R. will also get 40  
more and the G.T.P.R. will get 10 out of  
the order for 60 given the Canadian Loco-  
motive Co. recently. It is not yet an-  
nounced whether they will be leased or  
sold to the G.T.R.

The 250 refrigerator cars which the  
Dominion Government has ordered from  
Canadian Car & Foundry Co., as men-  
tioned in our last issue, will have the fol-  
lowing general dimensions:—

Length over end sills.....	36 ft.
Trucks, centre to centre.....	26 ft.
Width over sheathing.....	9 ft. 1¾ in.
Top of rail to top of running board.....	13 ft.
Length inside .....	35 ft. 2 in.
Width inside .....	8 ft. 2¼ in.
Capacity .....	30 tons
Meat racks and brine tanks.....	4 at each end
Bolsters, brake beams and couplers.....	Simplex
Draft Springs.....	Class E

The Canadian Car & Foundry Co.'s  
annual report, dated April 15, says: "The  
combined order books of your company  
and its subsidiaries, at the date of writ-  
ing, show a total value of unfilled orders  
aggregating \$36,500,000. For the first  
time in several years your directors are  
able to state that over 75% of this value  
represents orders for the regular and nor-  
mal products of the car equipment indus-  
try. If unforeseen conditions and contin-  
gencies beyond your management's con-  
trol do not arise, your present order book  
assures continuous and profitable opera-  
tions during 1918."

The Canadian Northern Ry.'s 5,000 box  
cars, 40 tons capacity, which the Dominion  
Government has ordered from Canadian  
Car & Foundry Co., will be of the steel  
frame type, inside sheathed, and similar  
to the 5,000 now being built by the com-  
pany for the government, details of which  
were given in July, 1917, issue, except  
that the centre sills will be reinforced  
with a ¼ in. cover plate running from  
end sill to end sill, and they will also be  
equipped with a cast steel buffing block,  
instead of deadwood as previously used.



Some further refinements in construction will also be made with a view to facilitating better maintenance. A new type of brake is to be applied to the cars of this order, providing for the adjustment of cylinder travel at floating lever fulcrum. This system having proved satisfactory, has been adopted as standard by the government. McCord journal boxes, twin spring draft rigging, Simplex brake beams, couplers and truck holsters, are amongst the specialties to be applied.

The Canadian Northern Ry.'s 1,000 steel frame box cars, which the Dominion Government has ordered from National Steel Car Co., as mentioned in our last issue, will have the following general dimensions:—

Capacity .....	80,000 lb.
Length inside .....	8 ft. 6½ in.
Height, floor to bottom of earline, at side .....	7 ft. 11½ in.

Width of side door opening .....	7 ft. 8 7/16 in.
Length between end sills .....	36 ft. 11 5/8 in.
Width over side sills .....	8 ft. 9 1/2 in.
Height, rail to top of brake mast .....	13 ft. 10 1/4 in.
Height, rail to top of running board .....	12 ft. 4 3/4 in.
Height, rail to centre of coupler .....	12 ft. 10 1/2 in.
Height, sill to bottom of side plate .....	7 ft. 10 3/16 in.
Height, top of rail to eaves .....	12 ft. 7 11/16 in.
Width over eaves .....	9 ft. 3 1/2 in.
Centre to centre of body bolster .....	26 ft. 10 in.
Couplers .....	Steel, 5 x 7 shank, 8 1/2 butt
Draft springs .....	M.C.B. class G
Journal boxes .....	McCord
Journal bearings .....	M.C.B. brass, 5 x 9
Journal bearing wedges .....	Cast steel
Truck bolsters .....	Simplex
Wheels .....	Cast iron, 33 in.

The G.T.R., as stated in Canadian Railway and Marine World for March, is having twenty-five 060 type switching locomotives built at its Point St. Charles shops, Montreal. They will have a total weight, including the tender, of 298,060 lb., and a tractive power of 34,398 lb. The

diameter of the boiler at the front end will be 68 9/16 in. and at the dome course 76 in. The boilers will give the following heating surfaces:—Firebox 168 sq. ft., tubes and flues 1,836.5 sq. ft., total 2,004.5 sq. ft., the grate area being 50.62 sq. ft. They will be fitted with Schmidt superheaters, having 28 units. Power reverse gear will be applied, the driving and total wheel base will be 11 ft. 6 in., total wheel base of locomotive and tender coupled 45 ft. 11 1/2 in., and total length of locomotive and tender overall 62 ft. 5 1/2 in. The cylinders will have a diameter of 21 and 26 in. stroke, with 51 in. driving wheels, and the working pressure will be 180 lb. per sq. in. The total weight on the driving wheels of engine will be 170,000 lb., and the tender, with a water capacity of 6,000 gall. and 10 tons of coal, will weigh 128,060 lb.

## Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

**Canadian Railway Troops in Action.**—Sir Robert Borden read in the House of Commons, April 2, the following dispatch from the war correspondents' headquarters in France, dated Mar. 28:—"Fighting, digging, blowing up roads and bridges, Canadian railway troops have been worthily keeping up the traditions of Ypres and Vimy. A majority of the battalions were in the battle area and close to that heroic British line that gave but never broke. They fought at Gouzeaucourt and a good majority of them are old soldiers. One company of an Ontario battalion whirled into the fight at Ham with a veteran British division and stayed with them two days, fighting every inch of ground. Another railway battalion rescued three heavy howitzers, repairing their broken line and loading the big guns on trucks when the British infantry were holding back the Huns only a few hundred yards away. In Peronne sector, another battalion, after getting all its equipment and rolling stock away, organized ambulance trains on what tracks were left, carrying out wounded. When the last locomotive and night cars came through, the track had to be mended seven times in less than an hour. One company of Canadian railway troops of a battalion that fought with the U.S. troops at Court put up a wonderful fight to rescue a big railway howitzer. They patched up the shell shattered line with any material at hand, got it over a quarter of a mile when broken rails spread and the task seemed hopeless. They bumped the 20-ton truck over ties for another hundred yards and found themselves alongside an old engineers' dump. The line ahead was torn and twisted and there were no rails to be had. Canadian railway huilders started to construct line with heavy dugout timbers from the dump. The big gun was hauled another 150 yards towards safety when the Huns were sighted almost upon them. The battery commander reluctantly decided to blow up the great howitzer. He gave the railway men ten minutes to construct some kind of line to take the locomotive

out and then destroyed his big pet. As the retiring infantry came up the gun crew and Canadians piled on the locomotive and steamed away through a hail of German bullets to safety. In no place where we had to retire were railway lines and bridges left intact. All the first day from Arras to Ham the battalion was running back rolling stock and blowing up the line. In many places they were doing their work of destruction with U.S. engineers and more than once little companies of both found themselves alongside each other in the fighting line. When their own part of the work was cleared the majority of companies were gathered in under command of their own Canadian brigadier and day and night they continued to give effective assistance in other directions. 'And when they are wanted,' declares one Canadian colonel who has

Operating Companies at this point and large yards with immense quantities of both standard and narrow gauge rolling stock. Of the latter all the Huns obtained were two derelict light railway locomotives and about a dozen trucks. Bridges over the Nord Canal were all destroyed. Miles of sidings in the valley at Ypres were mined and rendered completely useless. Repair shops, after lathes and other machinery had been taken away on the last trains, were burned and even the dugouts destroyed. A delicate compliment is paid to the Canadian railway destruction troops in German communiqué on Thursday. It says: 'Our railway troops are now coping with traffic behind the front and are working ceaselessly on the reconstruction of destroyed railways.' That means to make the lines fairly effective."



On the Western Battle Front.

A large water tank being filled within shell range. The tank is pulled up the line by the armored tractor, and is a great improvement on the old time water wagon drawn by horses. The Canadian corps front is a mass of light railways. They have done away with the slow horse transports. From Canadian official photograph loaned by C.P.R.

commanded troops in the line, 'they will be there, also ready to do their bit with rifle and machine gun.'"

The second dispatch was from London, dated April 1:—"Canadian officers who were acting as town majors in places like Ypres, Royalcourt and Bus had exciting experiences before they retired. Their duty was to see that all stores which could not be moved were destroyed, and they spent their last evening in their respective centres blowing up what little ammunition was left, and obliterating canteens that might yield supplies for advancing Huns. They came out with the last of the British troops and gave a graphic story of how complete was the destruction of roads, bridges and railways which might have been of use to the enemy. Ypres was one of the largest railway centres in the sector. In addition to the Canadian Railway Construction Battalion, there were Canadian Railway

**Decorations for Railway Troops.**—On March 18 an interesting ceremony took place at the 13th Canadian Light Railway Operating Co.'s camp in France, when the officer commanding, Capt. R. McKillop, formerly Division Superintendent, C.P.R., Montreal, presented a number of men with ribbons for decorations awarded recently. The men receiving the ribbons were:—Regimental Sergeant-Major W. R. Spencer, formerly Chief Dispatcher, Canadian Government Railways, Cochrane, Ont., and son of Geo. Spencer, Chief Operating Officer, Board of Railway Commissioners, Ottawa, who was awarded the meritorious service medal for strict devotion to duty in the field. The military medal for saving government railway equipment, under shell fire, while on duty, was awarded to Company Sergeant-Major John Bloomfield, formerly conductor, G.T.R., Belleville, Ont.; Sapper J. M. Vally, formerly fireman, Canadian Northern Ry.,



Trenton, Ont.; and Sapper Jas. McK. Baker, formerly fireman, G.T.R., Sarnia, Ont. Corporal Angus Probert, formerly baggage man, Canadian Government Railways, Truro, N.S., was complimented for being mentioned by Sir Douglas Haig in dispatches Nov 7, 1917, for conspicuous work in the field.

The G.T.R. Employees' Patriotic Association, up to Dec. 31, 1917, contributed \$15,000 to the Toronto Patriotic Fund; \$3,093 for motor ambulances; \$2,226 for Christmas boxes for enlisted employees; \$1,750 to the Tobacco Fund; \$2,500 to the British Red Cross, and several other smaller amounts for various objects. The fund has a balance in hand of \$1,197.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, up to Dec. 31, 1917, had contributed \$20,133.00 to the Canadian Red Cross; \$25,133.39 to the Canadian Patriotic Fund, and \$13,765.16 direct to enlisted employees.

#### PERSONAL NOTES.

Lieut. H. L. Atto, 5th Canadian Mounted Rifles, who received the Military Cross recently, and was mentioned in dispatches, was formerly chief clerk in the Superintendent's office, Dominion Express Co., Montreal.

F. L. C. Bond, formerly Division Engineer, G.T.R., Montreal, is now a Major in Company C, 10th Battalion, Canadian Railway Troops, on overseas service.

Lieut. A. O. L. Cameron, Aurora, Ont., of the Canadian Railway Troops, was awarded the Military Cross recently for work in maintaining light railway lines under shell fire. He relaid the tracks continually under heavy shell fire, and kept them repaired and in working order throughout the operations, setting an example of devotion to duty to his men.

Capt. A. H. Cowie, M.C., who was awarded a bar to the Military Cross recently, is a son of H. J. Cowie, European Agent, Canada Steamship Lines, Ltd., Liverpool, Eng. He joined the Canadian Expeditionary Force in the early stages of the war, prior to which he was engaged in engineering in Montreal.

Bruce W. Erb, for eight years Advertising Manager for T. McAvity & Sons, St. John, N.B., has enlisted in the Canadian Engineers, as a sapper, and is now training at St. Johns, Que.

Lieut. Andrew S. Fraser, of the Royal Field Artillery, who was reported about the middle of April as having been wounded and in a hospital at Rouen, France, is a son of Mrs. H. J. Fraser, of Ottawa, and a nephew of Jas. D. Fraser, director and Secretary-Treasurer, Ottawa Electric Ry. Having taken the first year's engineering course at McGill University, Montreal, he took a course at the Royal Military College, Kingston, Ont., and was gazetted as a lieutenant in the Royal Field Artillery, July 17, 1917. He went to England Sept. 1, 1917, and crossed to the European continent at the end of Dec., 1917. He has been removed to England to convalesce.

C. E. Goodman, who has been on Canadian Railway and Marine World's staff, as a business representative, for some time, during which he travelled over the entire Dominion, from Nova Scotia to British Columbia, has enlisted in the 1st Tank Battalion, and is now training at Ottawa, preparatory to going overseas.

Corporal Geo. K. Hudson, 13th Canadian Light Railway Operating Co., who was killed in action in France, Mar. 28, was the eldest son of T. C. Hudson, Master Mechanic, Canadian Northern Ry.,

Joliette, Que. He was born at Carleton Place, Ont., Sept. 10, 1897, and at the time of his enlistment, Feb. 28, 1917, was in the Canadian Northern Ry. mechanical department at Quebec. He left Canada in April, 1917, with the Skilled Railway Corps under Capt. McKillop.

Col. C. W. McLean, D.S.O., son of Major-General H. H. McLean, K.C., M.P., formerly President, St. John Ry., St. John, N.B., has been awarded two bars to his Distinguished Service Order, for services while in command of the 9th Scottish Division. He was specially mentioned in dispatches by Field Marshal Sir Douglas Haig.

Major C. V. McLean, of the Royal Artillery, son of Brig. Gen. H. H. McLean, K.C., M.P. for Royal, N.B., and formerly President, St. John Ry., is reported as wounded.

Lieut. J. D. McMurray, Vancouver, B. C., of the Canadian Railway Troops, was awarded the Military Cross recently for his conduct during very heavy enemy shell fire, when he accomplished the laying of 800 ft. of light railway. He personally took a train through a heavy barrage and enabled material to reach the work, and by his inspiring example and fearless devotion to duty he held his men together and finished most important work.

Engineer-Commander C. H. Oxlade, R.N.R., who was lost recently, when his armed trawler was sunk, was formerly chief officer of the C.P.R. s.s. Empress of India, and was well known in Vancouver, B.C.

W. J. D. Reed-Lewis, while on light railway construction, during the operations round Cambrai last autumn, as a lieutenant in the 6th Canadian Railway Troops, did work that brought special mention from headquarters, and he has been promoted to captain. He was employed as a civil engineer on the Hudson Bay Ry., and having taken his wife and young family to Barrie, Ont., where Mrs. Lewis came from, he went overseas, his efficient work in France resulting in his being seconded to the Imperial headquarters staff.

Lieut. W. R. Spencer, formerly Chief Dispatcher, Canadian Government Railways, Cochrane, Ont., son of George Spencer, Chief Operating Officer, Board of Railway Commissioners, Ottawa, who is Regimental Sergeant-Major, 13th Canadian Light Railway Operating Co., which has been operating a unit of light railways in France, has been awarded the meritorious service medal, in recognition of valuable service rendered in the field.

American Railway Engineering Association.—Following is a list of officials elected for the current year, at the association's recent annual meeting:—President, C. A. Morse, Chief Engineer, Chicago, Rock Island & Pacific Ry., Chicago; Vice President, H. R. Safford, Chief Engineer, G.T.R., Montreal; Treasurer, G. H. Bremner, Interstate Commerce Commission; Secretary, E. H. Fritch, Chicago; directors—J. L. Campbell, Chief Engineer, El Paso & Southwestern Ry.; E. A. Frink, Principal Assistant Engineer, Seaboard Air Line Ry.; E. H. Lee, Chief Engineer, Chicago & Western Indiana Rd.; nominating committee—J. E. Crawford, Chief Engineer, Norfolk & Western Ry.; H. T. Douglas, Jr., Chief Engineer, Chicago & Alton Ry.; J. V. Hanna, Chief Engineer, Kansas City Terminal Ry.; J. B. Jenkins, now on military service; J. E. Willoughby, Chief Engineer, Atlantic Coast Line Rd.

### Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$3,344,900	\$2,940,000	\$ 404,900	\$ 292,800
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	425,900	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
Dec.	3,273,300	3,207,900	65,400	758,500
Jan.	2,715,300	3,290,300	x675,000	1,057,100
Feb.	2,691,000	3,171,400	x480,400	588,600
	\$27,263,100	\$24,983,400	\$2,279,700	\$4,606,700
Incr	\$ 440,400	\$5,047,100		
Deer			\$4,606,700	
x Deficit.				

Approximate earnings for March, \$3,436,300, and for three weeks ended Apr. 21, \$2,766,700, against \$3,273,200 and \$2,381,400 for same periods 1917.

### Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, compared with those of 1917, from Jan. 1, 1918:

	Gross Earnings	Expenses	Net Earnings	Decrease
Jan.	\$10,789,818	\$9,621,824	\$1,167,993	\$1,263,485
Feb.	9,574,302	8,983,404	590,898	1,396,151
	\$20,364,120	\$18,605,228	\$1,758,891	\$2,659,636
Incr.	\$1,121,535	\$3,770,171		
Dec.			\$ 2,658,636	

Approximate earnings for March, \$12,265,000, and for three weeks ended Apr. 21, \$8,935,000, against \$11,692,000 and \$8,371,000 for same periods 1917.

### Grand Trunk Railway Earnings.

Subject to audit, the accounts for 1917 show the following results, compared with those for 1916:

	1917.	1916.
Gross receipts	\$10,725,500	\$9,819,700
Working expenses	9,002,900	7,228,000
Net receipts	\$1,722,600	\$2,591,700
Balance of income from rentals and hire of equipment	68,000	62,400
Total net revenue	\$1,790,600	\$2,654,100
Net revenue charges, less credits	1,496,700	\$1,914,600
Balance	\$293,900	\$739,500
Grand Trunk Western Ry.	Dr.95,200	Cr.119,200
Detroit, Grand Haven & Milwaukee Ry.	Dr.143,600	Dr.40,200
Toledo, Saginaw & Muskegon Ry.	Dr.28,800	Dr.16,200
Surplus	\$26,300	\$802,300

\*Including special allocation of \$400,000 for contingencies.

#### TRAFFIC RECEIPTS OF THE SYSTEM.

	1918.	1917.	Decrease
Aggregate from Jan. 1 to Mar. 31:—			
G.T.R.	\$10,304,506	\$10,836,188	\$531,682
G.T.W.R.	1,921,780	1,989,536	67,756
D.G.H. & M.R.	666,567	716,177	49,610
Totals	\$12,892,853	\$13,541,901	\$649,048

Approximate earnings for three weeks ended Apr. 21, \$4,132,801, against \$3,403,918 for same period 1917.

### Grand Trunk Pacific Ry. Earnings.

Approximate receipts for March, \$600,430, against \$405,695 for March, 1917; aggregate receipts from Jan. 1 to Mar. 31, \$1,505,025, against \$1,031,315 for same period 1917.

Quebec Bridge Commission.—An Ottawa press report of April 26 stated that C. N. Monsarrat, Chairman of the commission, was there arranging for the transfer of the commission's office from Montreal to Ottawa, where the commission's work will be wound up, which will probably take about a year. It also stated that in addition to working on the commission, Mr. Monsarrat had been appointed a consulting engineer to the Railways Department.



# Mainly About Railway People Throughout Canada.

**Jno. Gray**, Freight Agent, G.T.R., Toronto, who died there recently, left an estate of \$11,550, to his widow.

**Joseph H. Meglemry**, Assistant General Freight Agent, Michigan Central Rd., Buffalo, N.Y., died there, Apr. 2.

**R. Home Smith**, Toronto, who is President, Mexico North Western Ry., has also been elected President, Buffalo, Lockport & Rochester Ry.

**Hayter Reed**, formerly Manager in Chief of Hotels, C.P.R., who has been in England since Nov., 1917, is expected in Canada shortly. Mrs. Reed is at Dinard, France.

**Jas. Flintoft**, for years Sheriff of Lambton County, who died at Sarnia, Ont., April 5, aged 76, was the father of E. P. Flintoft, Assistant General Solicitor, C.P.R., Montreal.

**Geo. McLaren Brown**, European Manager, C.P.R., London, Eng., has, according to a press dispatch, been appointed Assistant Director General of Movements and Railways, at the War Office, with the rank of colonel.

**Mrs. A. E. Stevens**, wife of the General Superintendent, C.P.R., Moose Jaw, Sask., died at Los Angeles, Calif., April 17, of pneumonia, while on a trip with her husband. Their eldest son, Flight Lieut. Alex. Stevens, is at the front.

**C. W. Mitchell**, who is spoken of in a press dispatch as "one of the few surviving engineers who were engaged on the first survey for the C.P.R. along the Fraser River Valley and in the mountains," died at Vancouver, B.C., Apr. 15, aged 64. He was born at Newcastle, N.B.

**S. P. Howard**, formerly General Freight Agent, Eastern Lines, C.P.R., Montreal, has been awarded \$40,000, as damages against J. Findlay, for wrongful dissolution of a partnership. He retired from C.P.R. service May 31, 1910, after 28 years service, and entered the real estate business with Mr. Findlay.

**H. Rindal**, who has been elected a member of the Canadian Society of Civil Engineers, was born at Tyvold, Norway, Nov. 1, 1879. He was for some time in service with the Norwegian Government Railways, and the Pennsylvania Rd., and entered C.P.R. service in 1903, since when he has been, to 1905, Resident Engineer; 1905 to 1907, Assistant Division Engineer; since 1910, Engineer, British Columbia District, Vancouver.

**Frederick A. Rutherford**, whose appointment as Inspector of Transportation, G.T.R., Montreal, was announced in our last issue, was born at Parkhill, Ont., Sept. 16, 1877, and entered G.T.R. service, Jan. 18, 1894, since when he has been, to July, 1894, assistant to agent, Aylmer, Ont.; July, 1894, to July, 1900, telegraph operator, various points; July, 1900, to Jan., 1908, dispatcher, London, Ont.; Jan., 1908, to Mar., 1914, Chief Dispatcher, London, and Stratford, Ont.; Mar., 1914, to June, 1917, Trainmaster, Battle Creek, Mich.; June, 1917, to Feb. 1, 1918, Trainmaster, Durand, Mich.

**Sir Collingwood Schreiber**, K.C.M.G., General Consulting Engineer to Dominion Government, whose death was announced in our last issue, left an estate valued at \$144,331, made up as follows: Household goods and furniture, \$3,000; life insurance, \$16,443.21; stocks, \$10,313.75; bonds, \$104,565.12; cash on hand, \$800; cash in bank, \$1,209.11; real estate, \$8,000. The

widow is left the furniture, etc., \$70,000 is left a trust company to be invested, the interest to be paid half yearly to the widow until her death or second marriage. The rest of the estate is to be divided among his four married daughters, who were also made residuary legatees.

**John Flynn**, who has been appointed Car Foreman, C.P.R., Smiths Falls, Ont., was born Dec. 5, 1867, and entered railway service in June, 1887, since when he has been, to 1900, Car Foreman, G.T.R., Little York, Ont.; 1900 to June, 1910, Car Foreman, Brock St. Shops, G.T.R., Toronto; June to Dec. 31, 1910, Car Foreman, Grand Trunk Pacific Ry., Transcona, Man.; Dec. 31, 1910, to Oct., 1913, Car Foreman, G.T.P.R., Edson, Alta.; Dec., 1913, to Feb., 1914, Car Foreman, Cana-



**H. E. Whittenberger**,  
General Superintendent, Western Lines, Grand  
Trunk Railway.

dian Northern Ry., Rosedale, Toronto; Apr. to Aug., 1914, carpenter, C.P.R., London, Ont.; Aug., 1914, to Apr., 1917, Car Foreman, C.P.R., White River, Ont.; Apr., 1917, to Mar. 30, 1918, carpenter, G.T.R., Windsor, Ont.

**W. R. Davidson**, who has been appointed General Superintendent, Eastern Lines, G.T.R., Montreal, was born at Everton, Mo., Nov. 8, 1871, and entered railway service in Jan., 1890, since when he has been, to July, 1901, operator, Missouri Pacific Ry., at various points; July, 1901 to Mar., 1904, dispatcher, same road, Wichita, Kan.; Mar. to Oct., 1904, Chief Dispatcher, same road, Wichita, Kan.; Oct., 1904, to Mar., 1911, Trainmaster, same road, Wichita, Kan.; Mar., 1911, to Feb., 1913, Trainmaster, G.T.R., London, Ont.; Feb., 1913, to Mar., 1916, Superintendent, G.T.R., London, Ont.; Mar., 1916, to Sept., 1917, Superintendent, G.T.R., Detroit, Mich.; Sept., 1917, to May 1, 1918, General Superintendent, Western Lines, G.T.R., Chicago, Ill.

**John Lambert Abell**, whose appointment as Chief Dispatcher, Sudbury Division, Algoma District, C.P.R., was an-

nounced in our last issue, was born at Morganfield, Ky., Oct. 3, 1884, and entered railway service in Apr., 1902, since when he has been, to Oct., 1904, agent and operator, Illinois Central Rd., Louisville, Ky.; Nov., 1904, to Dec., 1908, agent, operator and dispatcher, Northern Pacific Ry., Jamestown, N.D.; Jan., 1909, to Aug., 1911, dispatcher, Wabash Rd., Moberly, Mo.; Aug., 1911, to Apr., 1916, dispatcher, C.P.R., Medicine Hat, Calgary, and Edmonton, Alta.; Apr., 1916, to June, 1917, Chief Dispatcher, C.P.R., Medicine Hat, Alta.; June to Sept., 1917, Chief Dispatcher, C.P.R., Winnipeg; Dec., 1917, to Mar. 12, 1918, Night Chief Dispatcher, C.P.R., Smiths Falls, Ont.

**H. E. Whittenberger**, who has been appointed General Superintendent, Western Lines, G.T.R., Chicago, Ill., was born at Peru, Ind., Nov. 9, 1869, and entered transportation service in 1885, since when he has been, 1885 to Feb., 1887, various positions, Wabash Rd.; Feb., 1897, to May, 1902, Trainmaster, Middle Division, G.T.R.; May, 1902, to Sept., 1904, Superintendent, Denver & Rio Grande Ry.; Sept., 1904, to Jan., 1906, Superintendent, Cincinnati, Hamilton & Dayton Rd., Indianapolis, Ind.; Jan., 1906, to Sept. 30, 1907, Superintendent, Kansas City & Southern Rd.; Sept. 30, 1907, to Oct. 17, 1912, Superintendent, Eastern Division, G.T.R., Montreal; Oct. 17, 1912, to Jan. 14, 1913, Superintendent, Middle Division, G.T.R., Toronto; Jan. 14, 1913, to May 1, 1918, General Superintendent, Ontario Lines, G.T.R., Toronto.

**Andrew Meade Adams**, whose appointment as Local Freight Agent, G.T.R., Toronto, was announced in a recent issue, was born at London, Ont., Dec. 31, 1870, and entered G.T.R. service June 7, 1886, since when he has been, to Mar., 1898, in various positions in the local freight office, London, Ont.; Apr., 1898, to Aug., 1900, assistant accountant, Superintendent's office, Toronto; Aug., 1900, to Mar., 1904, chief clerk, General Roadmaster's office, Toronto; Mar. to Aug., 1904, Freight and Passenger Agent, Central Vermont Ry., Norwich, Conn.; Aug. to Nov., 1904, Freight and Passenger Agent, C.V.R., Montpelier, Vt.; Nov., 1904, to Apr., 1905, Freight Agent, C.V.R., St. Albans, Vt.; Apr., 1905, to Apr., 1908, chief clerk, General Roadmaster's office, G.T.R., Toronto; Apr., 1908, to Feb., 1912, chief clerk, local freight office, Toronto; Feb., 1912, to Feb., 1913, chief accountant, local freight office, Toronto; Feb., 1913, to Feb., 1918, Local Freight Agent, Hamilton, Ont.

**C. G. Bowker**, who has been appointed General Superintendent, Ontario Lines, G.T.R., Toronto, was born at Medford, N.J., Apr. 21, 1871, and entered railway service in May, 1888, since when he has been, to Oct., 1890, operator, Philadelphia & Reading Rd.; Oct., 1890, to 1893, operator, New England Division, same road; 1893 to 1897, in charge of telegraph lines and electrical service, Buffalo Division, Lehigh Valley Rd., Buffalo, N.Y.; May, 1900, to Feb., 1902, train dispatcher, G.T.R., London, Ont.; Feb., 1902, to Nov., 1905, train dispatcher, G.T.R., Durand, Mich.; Nov., 1905, to May, 1907, Chief Train Dispatcher, G.T.R., Stratford, Ont.; May, 1907, to Sept., 1909, Trainmaster, G.T.R., Stratford, Ont.; Sept., 1909, to May 13, 1911, Assistant Superintendent, Middle Division, G.T.R., London, Ont.; May 12, 1911, to Jan., 1913, Joint Superintendent, G.T.R. and Wabash Rd., St. Thomas, Ont.; Jan., 1913, to May 1, 1918, General Super-



intendent, Eastern Lines, G.T.R., Montreal.

**Andrew Aitken**, who is acting as Traffic Manager, Reconstruction Committee, Halifax, N.S., was born at Decewsville, Ont., Oct. 12, 1872, and entered railway service in July, 1890, since when he has been, to July, 1896, freight checker, baggage master, switch tender and drawbridge tender, G.T.R., Merriton, Ont.; July, 1896, to Aug., 1897, brakeman, G.T.R., London, Ont.; Aug., 1897, to Jan., 1898, brakeman, G.T.R., Niagara Falls, Ont.; Jan. to Mar. 8, 1898, yard helper, yard foreman and yardmaster, C.P.R., Vancouver, B.C.; Mar. 8, 1898, to Nov. 13, 1912, General Yardmaster, C.P.R., Vancouver, B.C.; July 22, 1913, to July 1, 1914, Yardmaster, C.P.R., North Toronto, Ont.; July 1, 1914, to May 1, 1917, General Yardmaster, C.P.R., Toronto; May 1 to Oct. 15, 1917, Traffic Manager during construction of aviation camps at Armour Heights and Leaside, Toronto; Oct. 15 to Nov. 29, 1917, General Yardmaster, C.P.R., Toronto; Nov. 29 to Dec. 13, 1917, Assistant Superintendent, Toronto Terminal Division, Ontario District, C.P.R., Toronto.

**W. H. Winterrowd**, A.M.Can.Soc.C.E., whose appointment as Chief Mechanical Engineer, C.P.R., Montreal, was announced in our last issue, was born at Hope, Ind., Apr. 2, 1884, and educated at Shelbyville, Ind., and Purdue University, whence he graduated with the degree of B.S. in 1907. He entered railway service in 1905, since when he has been, to 1906, blacksmith's helper, Lake Erie & Western Ry., Lima, Ohio; 1906 to 1907, air brake and car repair man, Western Lines, Pennsylvania Rd., Dennison, Ohio; 1907 to 1908, special apprentice, Lake Shore & Michigan Southern Ry., Elkhart, Ind.; 1908 to 1909, Roundhouse Foreman, Lake Erie, Alliance & Wheeling Ry., Alliance, Ohio; 1909 to 1910, Night Roundhouse Foreman, Lake Shore & Michigan Southern Ry., Youngstown, Ohio; 1910, Roundhouse Foreman, same road, Cleveland, Ohio; 1910 to Sept., 1912, Assistant to Mechanical Engineer, same road, Cleveland, Ohio; Sept., 1912, to May, 1915, Mechanical Engineer, Angus locomotive shops, C.P.R., Montreal; May, 1915, to Apr. 1, 1918, Assistant to Chief Mechanical Engineer, C.P.R., Montreal.

**John McMartin**, M.P. for Glengarry, Ont., who died at Montreal, April 12, aged 48, after being in poor health for a year, was born in Charlottenburg Tp., Ont., and went to the western states at an early age. He began by working for two years in a lumber camp; next he went with the Ontonaga & Brylie River Rd., and became foreman of the construction gang. In 1883 he entered C.P.R. employ as Superintendent of Construction on the Lake Superior section, and remained until 1885, when he went to the Rocky Mountain division, and from there to Leadville, Col. He had a subcontract on Hell Gate division of the Colorado Midland Ry., and remained there until 1887. In 1889 he had a contract on the Denver & Rio Grande Rd. through Price Canon, and in 1891 took a contract on the Great Northern Rd. in Montana; in 1892, in Washington; in 1893, on Nakusp & Slokan Ry. in British Columbia; in 1895, on Parry Sound Ry., also on the Tillsonburg & Pacific Ry. In 1897 he went into mining business, and had a contract on the Crow's Nest Ry. in 1898, and contracts in order on the Columbia & Western Ry., the Kootenay Valley Ry., the Algoma Central, the Lindsay & Port Burwell Ry., the C.P.R. Sudbury branch. In 1904 he became interested in the La Rose mine, and shortly after

in the Hollinger and other mining interests in Cobalt. He was Vice President of the Hollinger Mines, Vice President and director of Canadian Mining Finance Co., President of Princess Realty Co., President of Labrador Pulp & Lumber Co., President of Motherlode Sheep Creek Mining Co. of British Columbia, and was connected with many other Canadian corporations.

**Charles F. Sise**, Chairman of the board of directors, Bell Telephone Co. of Canada, who died at Montreal, Apr. 9, was born at Portsmouth, N.H., Sept. 27, 1834. On the completion of his school life, he took to sea, his father being a merchant and shipowner, and he qualified as a master before reaching 21. He subsequently commanded several vessels in the Atlantic, Pacific and Australian trades, and later took charge of his father's shipping and cotton business at New Orleans and Mobile. During the civil war, he acted as secretary to Jefferson Davis, and also



W. H. Winterrowd, A.M.Can.Soc.C.E.,  
Chief Mechanical Engineer, Canadian Pacific  
Railway.

engaged in blockade running. After the war, he took charge of his father's business in Liverpool, Eng., and later returned to the U.S. and engaged in the insurance business at Boston, Mass. While there, he became associated with others who were financially interested in A. Graham Bell's telephone patents, and after the formation of the telephone company in the U.S., he came to Canada in 1879 to amalgamate the various telephone companies, which eventually led to the formation of the Bell Telephone Co. of Canada, which was incorporated in 1880, with head office at Toronto, and which was later moved to Montreal. He was appointed Managing Director, and in May, 1890, was elected President, holding that position until Feb., 1915, when he retired on account of age, but remained as Chairman of the Board. In addition to the Bell Telephone Co., he was associated with numerous other concerns, industrial, manufacturing and financial, among them being, the Wire & Cable Co., Northern Electric Co., North American Telegraph Co., Canadian Westinghouse Co., Sincennes-McNaughton Line, Nova Scotia Telephone Co., New Brunswick Telephone Co., etc. He is sur-

vived by three sons, E. F. Sise, Managing Director, Wire & Cable Co.; C. F. Sise, General Manager, Bell Telephone Co., and Paul F. Sise, Vice President and General Manager, Northern Electric Co.

## Telegraph, Telephone and Cable Matters.

**H. Hulatt**, Manager of Telegraphs, G.T.R. and Grand Trunk Pacific Ry., returned to Montreal recently, after a trip of inspection over the western lines. While in Winnipeg, a meeting of G.T.R. telegraph officials was held, when a number of subjects concerning the efficiency of the service, co-operation, etc., were discussed.

**D. Adams**, local manager, Great North Western Telegraph Co., London, Ont., has retired from active service. He entered telegraph service in 1869, with the Montreal Telegraph Co., at Montreal, and was afterwards transferred to Sackville, N.B., where all Canadian cables were handled. He moved to London in the seventies, and subsequently, was for five years with the Western Union Telegraph Co., in New York; for one year with the American Union Telegraph Co. in Cleveland, Ohio, and one year with the Western Union Telegraph Co. in Chicago, Ill., returning to London with the Great North Western Telegraph Co.

## Among the Express Companies.

**R. J. Hardy**, heretofore agent, American Ex. Co., Crysler, Ont., has been appointed agent at Russell, Ont.

**J. H. Greig** has been appointed acting route agent, Dominion Ex. Co., St. John, N.B., vice W. M. Johnston, transferred.

**W. M. Johnston**, heretofore route agent, Dominion Ex. Co., St. John, N.B., has been appointed route agent at Montreal.

**G. Laroux**, heretofore at Santa Clara, N.Y., has been appointed agent, American Ex. Co., Crysler, Ont., vice R. J. Hardy, transferred.

**Mrs. Boswell**, widow of the late J. A. Boswell, at one time Superintendent of the Dominion Ex. Co. at Montreal, died at Hamilton, Ont., April 5, aged 75. The funeral took place from the house of her son in law, W. H. Burr, Traffic Manager, Dominion Ex. Co., Toronto.

The Interstate Commerce Commission has ordered American Ex. Co. and Great Northern Ex. Co. to refund \$162.58, and American Ex. Co. and Northern Ex. Co. to refund \$469.42, with interest, to Bright Emery Co., Winnipeg; and American Ex. Co. and Great Northern Ex. Co. to refund \$77 with interest to Pioneer Fruit Co., Brandon, Man., in connection with overcharges on fruit shipped from Hood River, Ore., to Winnipeg and Brandon respectively, in 1914.

The Canadian Express Co.'s annual meeting was held at Montreal, April 19, H. G. Kelley, Chairman of the Board, presiding. The company's experience has been similar to that of all other transportation companies in recent years, viz., rapidly rising expenses due to higher wages and cost of supplies and materials. Mr. Kelley therefore intimated that if the high character of the service is to be maintained, it may be necessary to ask the Board of Railway Commissioners to approve some increases in rates. The directors for the current year are:—H. G. Kelley, Chairman of Board; John Pullen, President; Frank Scott, Secretary-Treasurer; W. H. Biggar, K.C., J. E. Dalrymple, U. E. Gillen, Hugh Paton.



# Electric Railway Department

## Increases in Electric Railway Freight and Passenger Rates Authorized by Board of Railway Commissioners.

The Chief Railway Commissioner, Sir Henry Drayton, gave the following judgment, Mar. 28, on the London & Port Stanley Ry.'s application for authority to increase its standard passenger tariff from 2½c a mile to 3c a mile, and its standard freight mileage tariff by 15%.

The application in this case really involves the extension of the advances allowed by the board on the application of railways operated by steam for a general advance in rates to the electric lines. No electric railway was party to that application, and the board's judgment did not deal with rates on electric lines as such. And this for very good reasons; not only was no application made for an increase, but one of the greatest items of increased cost, viz., the item of coal, is entirely lacking in electric railways operated with hydraulic power. The present applicant operates with hydro power. Some of the electric railway companies have, since the recent advance was allowed the steam lines, filed tariffs making similar advances in their rates. These tariffs have been disallowed by the board, until the necessities of the electric lines were established.

The London & Port Stanley Ry. has since filed its application, and has submitted data reflecting its increased costs and the effect that the increased cost schedule has had upon its operations. No other electric railway line in eastern territory has, as yet, submitted to the board evidence on which an increase of rates could be justified. While the London & Port Stanley Ry. does not apply on behalf of itself and all other electric railway companies, that company, operating, as it does, in a densely populated part of the province, and being without unprofitable mileage, confining its operations between terminals already developed, could well be taken as an electric line which should show, in the highest degree, having regard to the character of its equipment, the economies of electric railway operation.

The Manager and Treasurer of the company, which is operated for the City of London by a commission, has filed statements showing the increase in the rate of wages of conductors, motormen, and train men, as between July 1, 1915, and Jan. 1, 1918, amounting to an average increase of 32.421%. Increases approximating a similar percentage advance are shown to be typical and applicable to most of the employees. Comparative prices of supplies as filed by the L. & P.S.R. show a state of affairs practically the same as the exhibits filed by the steam railway companies in their case, the percentage increase being very heavy, in some instances, for example, rails, running as high as 166.363%.

The London Commission, however, shows that it has in the past earned its fixed charges on the old rates, but it is insisted by it that the city is entitled to a greater return than ¼ of 1% dividend on the monies invested in the electrification scheme. On the face of it, as it occurs to me, the monies that are invested in the electrification scheme are already earning interest at the rate of 5½%, that interest being charged on the bonds issued for the change to electricity. It is, of course, true that the city, as a city, nets

nothing out of the 5½% thus paid, and that, as far as its revenue is concerned, in view of the liabilities it has assumed, the point taken by Treasurer Richards, may perhaps be well taken. The cost of the change, however, from steam to electrification, cannot well be looked upon as the whole cost of the road. The London Commission's statement, submitted in support of this phase of the application, says:—"The cost of the road previous to electrification is placed by the city at \$1,169,118.52 on Dec. 31, 1914, and the rental received by the city is the return it receives on this old investment. The agreement between the city and the London Commission fixed this rental at \$20,000 for the first 10 years, \$25,000 for the next 20 years, \$30,000 for the next 20 years; \$40,000 for the next 20 years, and \$50,000 for the next 29 years."

The rental reserved for the first ten years gives a return of less than 2% on the original cost. In considering what a fair return on the line's operations would be, it would certainly not be unfair to the public to place the amount of capital on which the commission operating for the city ought to earn a return, at \$1,759,507. I arrive at this amount by accepting the cost returned by the commission of electrification, and which amounts to \$1,174,948, and by cutting the cost of the road to the city, previous to electrification, in two, although I have no doubt that as a matter of fact the cost returned by the city is perfectly correct. Making, however, this large and arbitrary reduction in capital account, there is still no doubt that on the evidence submitted by the applicant, it is entitled to the same measure of relief the steam roads have obtained. In order to properly carry an investment of this amount, the railway ought to earn approximately \$130,000 over and above operating expenses and taxes. Not only have rents and capital charges to be carried, but the plant has to be, in part, from time to time renewed, and the increased demands of traffic met. This ought to be done without the undue inflation of capital charges, by the exclusive use of new capital.

It is true that so far as the passenger equipment of the road is concerned, and its electrification, the standard is high, but it is also true that the company is able to carry on, by reason of its peculiar position, a relatively large freight business, having regard to its total operations, with the use of but four freight cars. It is obvious that such a condition as this may at any time change, and the company be compelled to acquire more freight equipment. The company's whole earnings for the year ended Dec., 1916, are returned as \$316,886.68. These figures do not include any revenue from Stanley Park, that being a matter entirely unconnected with either the direct revenue or the expenses of the railway function. The company's total operating expenses for the same period were \$186,554, leaving a balance, available for capital account and replacement fund, of \$130,332. The taxes paid by the company for the year were \$6,647, leaving the company with \$123,685. As a result, it is perfectly clear that the rates charged by the L. & P.S.R. in 1916 were not excessive. The year's

operations left the road, under the basis that I think to be fair, merely in a proper position. The rates, of course, in 1917 were the same as in 1916; but, in 1917, as a result of increased expenses, the net result was materially decreased. In 1917, the gross receipts were \$318,034, an amount slightly in excess of the gross of 1916. The expenses, however, increased from \$186,554 to \$220,227, leaving a net balance of \$97,807, to cover capital charges and taxes, as against \$130,332 in 1916. The net result of the year's operations, had the company continued to pay taxes to the different municipalities in which it operates, and assuming that the rate of taxation and amount of assessment had not been increased, would have resulted in a balance available for capital charges and replacement fund of \$91,160, against \$123,685 for 1916, involving a loss from the previous year's operation of \$32,525. The London Commission states that as a public utility it does not now pay taxes.

The London Commission's figures, dealing with capital charges and surpluses, call for an annual capital charge made up of 5.5% for interest on the cost of electrification, 1.8% for sinking fund, and the \$20,000 rental payable to the city for the first 10 years. While the basis of a changeable rent, or any rent, as such, is not a basis which can be adopted for the purpose of rate computation, the London Commission's figures quite closely approximate the above results. These figures show a reduction in the company's surplus, which is obtained after deducting capital charges (5.5% interest, 1.8% sinking fund, and rent) and operating costs, in the following manner, the figures being given for half-year periods, so as to aid in making comparisons:—

The surplus for Jan.-June, 1916, is reported as .....	\$18,934
The surplus for July-Dec., 1916, is reported as .....	28,497
Making a total surplus for 1916 of ..	\$47,431
For Jan.-June, 1917, a deficit is reported of .....	\$ 4,450
For July-Dec., 1917, a surplus is reported of .....	20,865

Making a net surplus for 1917 of .. \$16,415

As a result, as computed by the London Commission, the company's net fell off \$31,016, a reduction of 66%. The surplus of 1917 was arrived at without the deduction of any taxes. These taxes should be deducted, in order to arrive at a proper comparison of the earnings of the two years. Amounting as the taxes did, for the year previous, to \$6,647, had taxes been paid, the surplus in 1917 would have been but \$9,768, resulting in a reduction in surplus of \$37,663, or over 75%. The London Commission also advises that its operations, including fixed charges, resulted in a deficit for Jan., 1918, of \$6,941, and for Feb., 1918, of \$6,066, making a total deficit for the two months of \$13,007. The statements filed in support of the application show that Mar., April, May, and June, 1917, gave a surplus of \$3,469, while a total deficit of \$4,450 was returned for the six months period. As a result the deficit for Jan. and Feb., 1917, was \$7,919. The increased cost schedule is again indicated in the fact, that for the two poor months of this year the de-



fic of \$7,919 for 1917 is increased by \$5,088 in 1918.

Accepting, as I do, the submissions made by the London Commission, it is clear that the company's rates are insufficient to properly cover the costs of operation under the conditions of today. Although the London Commission is not under the heavy burden of increased coal costs, but enjoys the full benefit of electrification, the results of operation under today's conditions are such that relief must be afforded, and it requires relief to the full extent that relief has been accorded the steam roads. The London Commission, however, in some instances applies for greater advances than those allowed the steam roads. In passenger rates, the application asks for an increase in the standard passenger tariff from 2½ to 3c a mile. The steam roads have been allowed to increase their passenger rates by 15%, while the London Commission's request is for 20%. Rightly or wrongly, it has always been considered that the carriage of passengers on electric railways, just so soon as a proper density of traffic can be maintained, is much cheaper than on steam roads. The L. & P.S.R. enjoys large gross earnings, greater per mile than those of any similar railway in Ontario. While the standard passenger tariffs in eastern territory were, before the recent advance, 3c a mile, as a rule the electric rate was lower. Besides the London & Port Stanley, the Montreal & Southern Counties, the Montreal Park & Island, the Montreal Terminal, the London & Lake Erie, the Brantford Municipal, and the Chatham, Wallaceburg & Lake Erie Railways may be instanced as companies operating under standard passenger tariffs of 2½c. The Hamilton Radial operates under a standard tariff of but 2c a mile. It may also be noted that, if the applicants were now operating under the Ontario statute, their rates under that act, instead of being increased, would have to be reduced from 2½c to 2c a mile. Under the circumstances, and in the absence of any special hearings, I would maintain the present spread between the standard passenger tariffs on steam and electric roads and only allow an increase of 15% in the companies' tariffs.

The London Commission also asks for a special increase of coal rates. The application on this point reads:—"We make application for permission to increase the rates on coal, bituminous and cannel, from Port Stanley to all points on the L. & P.S.R. (London, Somerset, Westminster, Glanworth, Yarmouth, Whites and St. Thomas) from 50c. a net ton to 75c. a net ton. Our reasons for making this request are the same as those given in our application for permission to increase our standard passenger and freight tariffs. Without repeating same, we wish to have this application supported by the statements attached to the above application. The 75c rate is slightly under the rate that would have been effective to these points, had various rates and increases allowed to steam roads been maintained. That is, the old rate of 58c plus Sept., 1916, increase of 15%, plus Mar., 1918, increase of 15c, 79c. The tonnage affected on the basis of 1917 business is 8,773 tons to St. Thomas, and 11,995 tons to London."

The board allowed a flat increase of 15c a ton in the steam roads' coal tariffs. The claim made by the London Commission as to the rate charged for the carriage of coal before the electrification of the L. & P.S.R. is correct, but the general basis of coal rates was changed by the board in the eastern rates case of 1916. In so far as the operation of the L. & P.S.R.

by the Pere Marquette Rd. is concerned, the tariffs of that railway provided for the payment of 58c a ton from Port Stanley, both to London and St. Thomas. After the electrification of the road, the London Commission made a large cut in the coal rate from Port Stanley to St. Thomas, taking 23c off the rate. It also made a cut in the rate to London, reducing it by 8c. As a result, coal was then carried to St. Thomas for 35c and to London for 50c a ton.

The question which the board had before it in 1916, was, of course, the rates charged on coal by the large systems which carried the very great bulk of the traffic. The rates were regrouped, and coal ex Black Rock, consigned to points west of group 1 (which consisted of points on the Niagara River) carried a blanket rate of 44c a ton. The longest haul under this blanket is 20 miles. The mileage from Port Stanley to St. Thomas is 11 miles, and the reduced rate of 35c put in by the London Commission for that haul would fall within the distance covered by the 44c blanket rate. The next group, ex Black Rock, covers movements up to 50 miles, and these rates were fixed by the board at 55c a ton. Both these rates included the 10% increase which the board allowed. As a result, on distances up to 20 miles, and past the Niagara River, steam roads now obtain on their coal haul from Black Rock, adding the 15c a ton allowed recently, a return of 59c a ton; and for hauls up to 50 miles, 70c a ton.

The eastern rates case judgment was issued in June, 1916, and on Aug. 1, 1916, the London Commission raised the rate to St. Thomas to 50c a ton, or 6c over the Black Rock 20 mile blanket rate. As a result of the adjustment made by the London Commission, after the judgment in the eastern rates case, a rate was left which certainly could not be described as unduly low, having regard to the rates fixed by the board in the eastern rates case, on the movement of coal from Black Rock. Similarly, the rate on coal from Black Rock to London was fixed in the eastern rates case at 99c a ton for a haul of 127 miles. The rate on coal allowed by the board from Detroit to London, under the same judgment, was 72c a ton, the haul here being 112 miles, resulting in a charge of 0.643c per ton mile. The longer the haul, of course, the lower the per ton mile ought to be. Bearing this qualification in mind, the London Commission's rate to St. Thomas secures a gross of 4.54c a ton per mile, and to London 1.23c a ton per mile.

The coal increases asked by the London Commission amount to 50% increase on the present rates. If the London Commission is held down to the increase allowed to steam lines, of 15c a net ton, that increase would amount to 30% on the short hauls that are here involved; and, in view of the London Commission's short mileage, this percentage increase is not weighted down by long hauls involving rates of \$1 and upwards, as in the case of the large systems. It is inevitable that a flat increase benefits the company with the short mileage, such as the L. & P.S.R., much more than the larger systems, while conversely percentage increases produce greater results to the large systems with long hauls. Taking everything into consideration, I am of the opinion that the L. & P.S.R. is entitled to a flat increase of 15c a ton. An increase in rate of 25c, would create rates entirely out of line with other rates. A 75c rate for the 11 mile haul to St. Thomas, or for the 29 mile haul to London, would certainly be excessive, as compared with the G.

T.R. rate, as increased, of 87c for the 112 mile haul from Detroit to London, after making every allowance for the fact that the movement to London on the G.T.R. is one of the longest hauls under a blanket rate.

It is usual to hold hearings before taking any action on an application such as this. In the present instance, however, I am convinced that none need be held. The absolute necessity of greater railway earnings, although seriously challenged at the time the board took action in the case of the steam roads, is now practically generally admitted. The whole question was most exhaustively argued and considered in the main case. Increased costs are common, of course, in the United States as well as in Canada. While having no bearing on the propriety of the board's action, in the main case, in the appeal from the board's judgment to the Governor in council, allegations were made that the Interstate Commerce Commission had taken no such action on similar applications which had been made by United States carriers prior to the application to this board. It may be noted that similar increases have since been allowed in U.S. territory. Many of the cost factors now alleged by the applicant have been already passed upon in the former case. As a matter of fact, the only matter of advanced costs not on common ground is the question of coal and the fact that the applicant, by the use of hydraulic electricity, has escaped the added cost of coal. The figures and statements of the L. & P.S.R., however, make absolutely clear its necessity for more revenue, assuming always that the railway is to be treated as a commercial venture, and to be maintained without loss to the London ratepayers, either in connection with its operations, or what, in the long run, is much worse, depletion of the property assets, owing to undue economies and scamped maintenance. On the case they have made out, as I see it, the London commissioners would have been derelict in their duty as trustees had the application not been made.

The increases awarded are but temporary—they only apply while the present abnormal and excessive costs prevail. I would, therefore, act upon the application without the delays that are incident to hearings. Similar relief will be extended to any other electric line that satisfies the board that its operation and financial condition are such as to require relief.

#### Orders Passed by the Board.

The Board of Railway Commissioners has passed the following orders affecting electric railway rates:—

**Lake Erie & Northern Ry.** 27,105, April 4. Authorizing L.E. & N.R. to advance its freight rates 15%, and its passenger rates from 2½c a mile to 2¾c, advances not to become effective before April 15.

**Lake Erie & Northern Ry.**—27,121, April 10. Approving L.E. & N.R. Standard Freight Tariff of Maximum Mileage Tolls C.R.C. 103, and Standard Passenger Tariff C.R.C. 23, filed on basis permitted by board in order 27,105, April 4, to become effective April 15.

**London & Lake Erie Ry. & Transportation Co.** 27,106, April 4. Authorizing L. & L.E.R. & T. Co. to advance its freight rates 15%, its passenger rates from 2½c a mile to 2¾c; and its bituminous and cannel coal rates by 15c a ton, increases to become effective April 15.

**London & Port Stanley Ry.** 27,104, April 2. Authorizing L. & P.S.R. to in-



crease its standard freight mileage tariff by 15%, its standard passenger tariff basis from 2½¢ a mile to 2%; its bituminous and cannel coal rates by 15¢ a ton, increases to become effective April 15.

**London & Port Stanley Ry.**—27,117. Approving L. & P.S.R. Standard Freight Tariff of Maximum Mileage Tolls C.R.C. 176, and Standard Passenger Tariff C.R.C. 115, naming maximum fare per mile, filed on basis permitted by board in order 21,704, April 2, to become effective April 15.

**Oshawa Ry.** General order 215C, April 4. Approving Oshawa Ry.'s standard freight mileage tariff, C.R.C. 15, to become effective Apr. 15, it having been filed on the basis permitted by the board in general order 213, Dec. 26, 1917.

Applications for authority to increase freight and passenger rates have also been made to the board, by the Hamilton Radial Ry., Montreal & Southern Counties Ry., Quebec Ry., Light & Power Co., Chatham, Wallaceburg & Lake Erie Ry., and Hull Electric Co. The British Columbia Electric Ry. has applied for authority to advance freight rates on two of its subsidiaries, the Vancouver & Lulu Island Ry. and Vancouver, Fraser Valley & Southern Ry. The Windsor, Essex & Lake Shore Rapid Ry. has applied for authority to increase its freight rates.

### The Winnipeg Electric Railway's New Street Car.

The new type of street car which the company is placing in service in Winnipeg, we are officially advised, embodies several new features and modifications of the older types which experience has demonstrated are advantageous for the city's lines. The first of the new cars has been delivered and has been given a trial, which has proved satisfactory. The first and most noticeable feature is that the car has a lower body than the older type, thus making only one step necessary to enter. In order to effect this improvement, a new style of truck had to be planned which, it is claimed, will admit of smoother and more economical operation. The single step is hinged, and is operated in connection with the door, so that when the door is closed the step is folded against the side of the truck, and when the doors are opened the step drops down ready for the use of passengers. The step is covered with a lead anti-slip tread as an additional factor of safety for passengers. A signal lamp is fitted before the motorman, which comes into operation when the doors of the car are closed, so that until this operation is completed the motorman is without orders to go ahead. A signal bell for emergency use is also provided. Passengers can make their exit by the front, as well as by the rear—the car being of the p.a.y.e. type—the front exit door being in charge of the motorman. The passenger passes through a door separating the body of the car from the front vestibule, and then out by the exit door. The vestibule is divided by a glass partition, thus providing protection from the weather for the motorman and permitting him a free view for operating the exit door. The car is heated by electricity, the heating duct running under the seats, and a fan provides for the proper circulation of heat. The floor is double, and the general fittings and upholstery of the car are thoroughly modern. The conductors' and motormen's compartments are also heated. The car

is provided with adequate brake power and safety devices which have been asked for by the employees.

### The Toronto Railway Co's Dividend Reduction.

The following circular has been issued to shareholders:—Regretfully the directors have to announce that the company's best interests make it necessary that the rate of dividend be reduced from 8 to 4%. This action will be to you, as it is to the directors, a matter of deep regret, and therefore it has been deemed advisable to place the situation briefly but completely before the shareholders.

The street railway, like every other business, has been subjected to an abnormal increase in cost of producing its service—as a result of war conditions. During the coming year, the company is required to make payments in excess of last year, as follows: Municipal and provincial taxes, \$40,000; business profits tax (Dominion Government), \$40,000; increase in cost of material based upon last year's operation, about \$200,000, a total of \$280,000. These items, as will be seen, are charges over which the company has no control. No human foresight, no superior ability, on the part of the management, could have prevented or mitigated these charges.

Further, under the terms of an arbitration held under the Dominion Act, in reference to industrial disputes, the company is obliged to pay out additional wages to the amount of about \$600,000 a year. Needless to say, your management protested with all its might against the unwarranted payment of this increase in wages, which, according to the evidence the company produced, was unjustifiable—but without avail. Unfortunately for the shareholders, these are war times.

Adding to the total contained in the above table, the amount represented by increased wages, it will be seen that the company is required to face an expenditure of possibly \$880,000 in excess of normal charges. While it is confidently expected that a portion of this extra burden will be made up out of increased revenues (fortunately our revenues are increasing in substantial amounts), it is not expected that the whole amount will be cared for in this way, and a reduction in dividends thus becomes the only way in which the company's resources could be husbanded.

While the street railway is like other businesses in being compelled to face extra war costs, it is unlike other businesses in being unable to pass the burden, or a part of it, upon the consumer. We are compelled to fulfill the terms of our contract (under which rates of fares are definitely fixed) with the city—in spite of the abnormal conditions to which the country and its economic interests are subjected, while we are economizing wherever economy is possible, we are providing the best service within our power, a service which the candid opinion of American experts says is one of the best given, under war conditions, on the North American continent.

There is admittedly little consolation to be derived from the fact that others are equally suffering from the war, and yet the fact that many companies engaged in producing public and quasi-public services have been compelled to reduce their dividends, and in some cases cut them off entirely, is not without significance. Naturally these reductions have affected stock values, the Toronto Ry.'s stock as well as others. Deplorable as is

the decline in the selling price of the company's stock, it must not be forgotten that it is not out of sympathy with the general share market which does not today adequately represent intrinsic worth.

It is with pleasure that we announce that last year, after paying all expenses, the Toronto Power Co. had a surplus of \$900,000 and the Toronto Electric Light Co. a surplus of \$75,000, both companies being subsidiaries of the Toronto Ry. Co. Of the moneys so derived, about \$700,000 was devoted in reduction of the bonded indebtedness of the Toronto Power Co. (under the trust agreements) and the balance is being expended from time to time in increasing the facilities of these companies, and providing for their greater earning powers in the future.

### Edmonton Radial Railway Fares.

The proposed amendment to City of Edmonton's charter, authorizing it to collect fares on the straight zone principle, was not authorized by the Alberta Legislature, but after considerable discussion the following section was adopted: "Notwithstanding anything to the contrary whatsoever, the city is hereby declared to have and it shall have the power and authority to charge such tolls and fares on its tramway lines as shall from time to time be fixed by its council, provided that such fares are uniform throughout the city."

Among the reasons given for the necessity of having the proposal amended as has been done, was the fact that the E.R. Ry. operates also in Strathcona, and that the agreements between the original cities of Strathcona and Edmonton provided that the fare at Strathcona should not be more than 5¢.

Acting on the new powers, the city's street railway committee made the following recommendations, which were considered at a meeting of the city council, April 9:—"Transfers to be issued only between 6 and 9 a.m. and 5 and 8 p.m. A 10¢ fare between 11:15 p.m. and the time when cars cease running at night. Six tickets for 25¢, good between 5 and 8 a.m. School children, 10 tickets for 25¢. Street railway to be supplied with electric energy at cost. Otherwise the 5¢ fare to remain in force as before."

In the course of the discussion, Superintendent Moir stated that 186,000 more passengers were carried during the first three months of this year than during the same period of 1917, and that about 3,000 children's fares were collected daily.

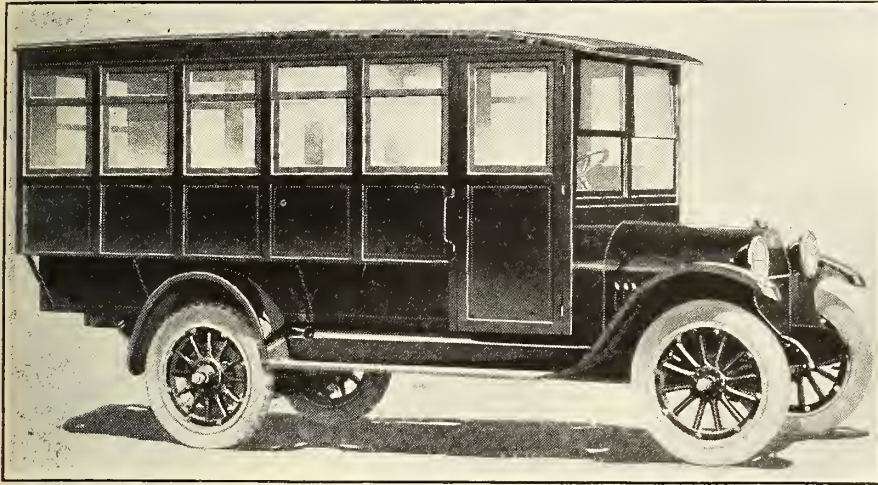
The following alternative proposal was submitted by Alderman Martin:—"Children 2½¢, but such tickets not to be used between 9:30 and 11:15 a.m., and after 5 p.m. Labor tickets 4 1/6¢, or 6 for 25¢. Ordinary tickets, 6¼¢—that is, 4 for 25¢, or cash fares 7¢. Ten cent fares after 11:15 p.m." Further discussion of the matter was adjourned until the new legislation becomes operative.

**Snow Removal at Toronto.**—The City of Toronto obtained judgment against the Toronto Ry., Apr. 13, on a claim of \$14,391.47 for the removal of snow from the streets where it had been cleared from the company's tracks. The claim was made in Nov., 1915, and the judgment carries costs, and interest, from the date of the original writ, with a stay of 15 days. The company contends that under its agreement with the city, it is not called upon to remove the snow from the streets, but merely to remove it from the track allowance. The company has appealed against the judgment.



### Motor Busses for Winnipeg Electric Railway.

The Winnipeg Electric Ry. has arranged for the operation of motor busses on certain streets supplementary to its electric car lines. The proposed route for the busses is from Sherbrook St., along Westminster Ave. to Lipton St., along Lipton St. to Portage Ave., and return to starting point. Transfers will be given on the busses which will carry the passengers east or west on the Portage Ave. cars, or north and south on the Sherbrook



Motor Omnibus, Winnipeg Electric Railway.

St. cars, and passengers on the street cars will be given transfers to the busses. It is probable that other routes will be selected and developed at a later period. No announcement has been made as to the number of busses to be put in service, but a Winnipeg press report states that four motor busses were delivered to the company April 4, and that the service on the route indicated will be started May 1.

The busses are being built at Walkerville, Ont., and are described as being 16 passenger capacity. The entrance is by the right front door only, the door being controlled by the driver through the operation of a lever directly in front of his seat. The door has no handle, thus passengers cannot open it to enter or leave the car. The fare box is placed just inside the entrance. The seats run along the sides of the car and are broad with leather upholstered spring cushion seats and curved back rests, and there is ample space between the two seats. The windows being sliding, provide for ample ventilation; electric push buttons for signalling are provided and two dome lights provide for lighting the bus at nights.

### Street Railway Fares in Moncton.—

The Moncton Tramways, Electricity & Gas Co. has applied to the Moncton, N.B., City Council for permission to increase the fares charged on the electric railway. The line is being operated at a loss, and the management states that until the revenues meet operating expenses it will be impossible to do anything to improve the system. The company asks power to charge a straight 5c fare, and to be placed under the Public Utilities Commission's control. The council decided to ask the company to set out in detail its reasons for asking for the increase.

The Lethbridge Municipal Ry. is reported to be arranging to employ women conductors in order to release men for agricultural work.

### New Brunswick Power Co. Asks Increased Rates.

The New Brunswick Power Co., operating the St. John Railway, has petitioned the N. B. Legislature for authority to increase its electric railway fares, gas and electric current rates, and has had the following bill introduced in the legislature:—

"Whereas, owing to the increased cost of operating the plant of the New Brunswick Power Co., owing to the price of coal and other supplies and materials used

on the investment in the company's property. Be it therefore enacted by the Lieutenant-Governor and Legislative Assembly as follows:

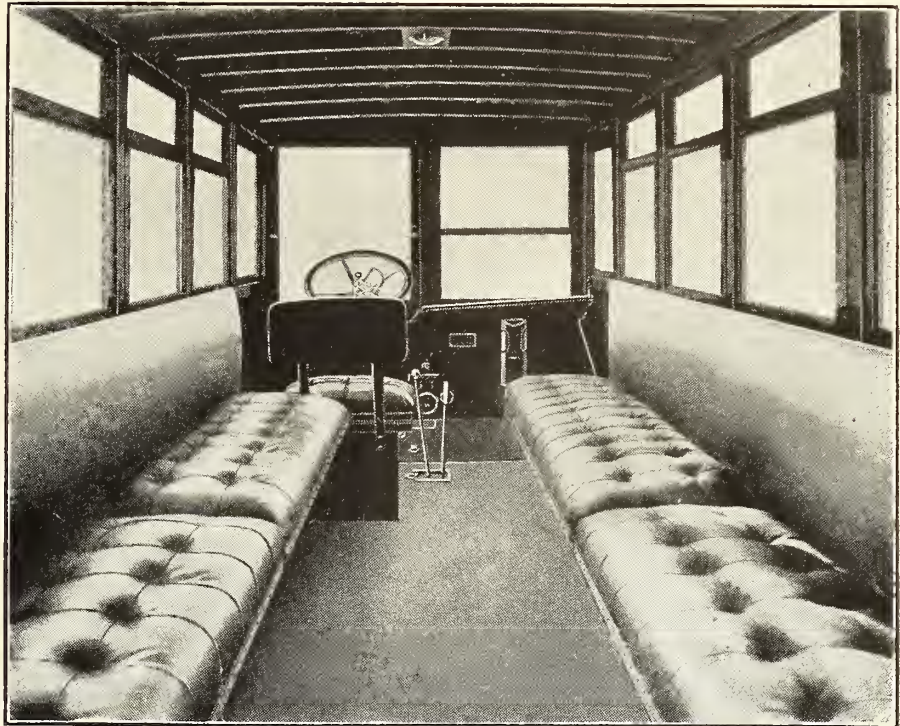
"The obligation of the company to sell 25 tickets good over its lines of street railway for \$1, and 6 tickets for 25c, and to charge a cash fare of 5c is hereby abolished, and instead the company is hereby permitted to charge a cash fare of 6c per passenger. The obligation of the company to grant free transfers is hereby abolished and the company is hereby permitted to charge 1c for each transfer.

"The maximum price the company may charge for gas for heating and illuminating purposes is hereby increased to \$2 per 1,000 ft.

"The maximum rate for electric current for power and light supplied by the company is hereby abolished and instead the company may charge not exceeding the rates heretofore charged by the Saint John Ry. Co. for power and light.

"Said rates hereby permitted may be charged by the company during the continuance of the present high prices, consequent on the present war and the consequent relative depreciation of the value of the money received by the company for its services.

"The Lieutenant-Governor in council, on the application of the directors of the company, may, if satisfied that the cost of coal or other operating expenses has increased to such an extent as to render a further increase in fare or rate necessary may grant such further increase in fare or rate and permit the same to con-



Motor Omnibus, Winnipeg Electric Railway.

by the company being more than double, the company has petitioned the legislature praying that the rates fixed by legislation that such company may charge be increased during the period of the war and the present high prices; and whereas, it appears that in many cases the rate the company is by law permitted to charge is less than the company's actual cost of operating, and it is desirable that a temporary increase be granted to the company to enable it to receive the actual cost of operating and a reasonable return

tinue whilst such increased operating cost obtains.

"The Lieutenant-Governor in council may appoint an experienced person qualified to pass upon such matters, to report as to the advisability of granting such increase in rate as in the last section provided, and may act upon the report so made. The expenses of such report shall be paid by the company."

A deputation of St. John citizens waited on the legislature's committee, April 16, and objected to the increases proposed.



## Snow Fighting on Levis County Railway.

Levis, Que., is one of the worst, if not the worst, snow districts in Canada, and this winter the fall has been 20 in. heavier than usual, being 120 in., against an average of 100 in. The first snow fall came on Nov. 22, 1917, and the storms were

One block of houses had their chimneys swept off.

The Levis County Ry.'s 300 h.p. rotary plough started out during the afternoon of Feb. 15 to open up the company's lines. By evening, the St. Joseph Division, which

with the crew on top. It also shows the snow cutting blades in front and the delivery paddles behind the blades. These paddles deliver the snow some 15 ft. through a funnel in the side of the plough, and it can be delivered on either side. The



Snow fighting on Levis County Railway.

Fig. 1, upper left hand corner; fig. 2, upper right hand corner; fig. 3, lower left hand corner; fig. 4, lower right hand corner.



Snow fighting on Levis County Railway. Fig. 5, left, fig. 6 right.

continuous through December, accompanied by extreme cold. There were no thaws during the whole period, so that the snow accumulated to a great height. The worst storm of the season started on the evening of Feb. 14, and continued for 24 hours, accompanied by high winds. The drifts ran as high as 18 ft. on the railway track. Snow slides occurred from the top of the cliff, along the Quebec Bridge Division, which completely buried several houses and moved some of them.

serves the dry docks, was opened and cars were running as usual. The upper town, Levis Division, was opened during the night, and on the morning of Feb. 16, the plough started on its long trip to the Quebec Bridge, 7 miles. It had to face some very heavy drifts and snow slides, and it was on this division that the accompanying views were taken. Half the line was open by evening and the remainder by noon on Feb. 17.

Fig. 1 shows plough in 10 ft. of snow,

block of houses on the right were buried and moved by the slide.

Fig. 2 shows plough in a snow slide about 9 ft. deep. The snow in these slides was packed very hard and was more difficult for the plough to get through than the drifts. The crew is shown shovelling down the height of snow to help the plough.

Fig. 3 shows the plough working in a 10 ft. drift, the snow being delivered on the right hand side.



Fig. 4 shows the plough backed up out of a cut, to enable the photographer to obtain a view of the cut, which is 18 ft. high.

Fig. 5 shows the same cut after the plough had got through. The road for teams is on the right hand side of the picture.

Fig. 6 shows a car in one of the cuts. A team can be seen driving along on the right.

We are indebted to H. E. Weyman, Manager Levis County Ry., for the foregoing information and photographs.

### Detroit United Railway Report.

Following is a comparative statement of earnings and income for the calendar years 1917 and 1916, as presented at the annual meeting recently:—

Gross earnings—	1917.	1916.
Passenger . . . . .	\$16,370,239.64	\$15,069,980.64
Express . . . . .	1,000,869.16	907,771.90
Mail . . . . .	11,748.16	11,828.08
Special car . . . . .	45,083.03	47,088.59
Gross earnings from operation . . . . .	\$17,427,939.99	\$16,036,669.21
Operating expenses . . . . .	13,259,790.85	11,215,802.20
Net earnings from operation . . . . .	\$4,168,149.14	\$4,820,867.01
Other income . . . . .	411,737.29	351,334.79
Gross income less operating expenses . . . . .	\$4,579,886.43	\$5,172,201.80
Interest on funded and floating debts and taxes . . . . .	2,404,355.68	2,291,409.67
Net income before providing for depreciation or contingencies . . . . .	\$2,175,530.75	\$2,880,792.13
Deduct credited to depreciation reserve \$ . . . . .	800,000.00	800,000.00
Deduct credited to reserve for taxes . . . . .	150,000.00	
Dividends paid . . . . .	1,118,750.00	843,750.00
Together . . . . .	\$2,068,750.00	\$1,643,750.00
Balance transferred to surplus account . . . . .	\$106,780.75	\$1,237,042.13

The company owns and operates the Sandwich, Windsor & Amherstburg Ry. in Canada, 41.37 miles, the figures for which are included in the above and are not given separately.

### T. H. McCauley on the Street Railway Outlook.

T. H. McCauley, Superintendent, Calgary Municipal Ry., in Vancouver recently, after an extended trip in the United States, where he examined a number of street railway systems, is reported to have said:—"All street car systems are up against the impossible situation of running cars according to established customs, charging a fare which is the same now as years ago, while maintenance and supplies have increased 100%. With the obstacles of the present, the street railway lines which try to maintain service under old fares are bound to find it impossible to keep on as a business proposition unless some changes are made. All through the U. S. traction companies are being forced to ask and are asking that fares be increased to 6c. This is due largely to the fact that the privately owned automobile competition is becoming such a strong factor that ultimately street cars will be unable to exist because increasing fares will encourage people to buy still more automobiles. In Calgary our records show that in good weather the private automobiles represent a loss to us of \$300 a day. This does not refer to jitney competition, but to the fact that an increasing proportion of the people are driving their own cars."

### Answers and Questions on Electric Railway Topics.

Following are answers to a number of questions on electric railway topics, sent to the American Electric Railway Association's question box, by Canadian electric railway officials:—

**Saving Oil and Waste.**—What methods do member companies employ to extract the oil in waste removed from axle bearings, and clean and renovate for further use the waste after the oil has been extracted?

W. R. McRae, Master Mechanic, Toronto Ry., Toronto.—Both cotton and wool waste are cleaned in a steam driven centrifugal cleaner, manufactured by the Canadian Oil & Waste Saving Machine Co., Brockville, Ont. Lubricant removed from wool waste is reclaimed by filtration and used in car journals only. Waste is reclaimed by filtration and used in car journals only. Waste is dried by spreading on wire frames over dry heaters (sun dried during summer season), and teased before being put in soaking tanks.

**Oil allowances.**—Have any member companies established standards governing the amount of oil used in axle bearings, i.e., the quantity measured, and if so what amounts are allowed for the different sizes of axles?

W. R. McRae, Master Mechanic, Toronto Ry., Toronto.—Axle journal bearings are lubricated on a time basis; all journal bearings one size; oilers instructed as to quantity of oil used.

**Clearance at Milk Platforms.**—What clearance do member companies maintain between milk stands and the centre of high speed main tracks, if these stands are located 8 ft. or more from centre of track? Do any members use any device to make it more convenient for the train crew to handle cans from stand to car, and if so, what?

C. L. Wilson, Assistant Manager, Toronto & York Radial Ry., Toronto.—A clearance of 8 ft. from centre line is maintained. Express cars are provided with steel gangway laid from floor of car to platform of milk stand.

**Car Construction.**—Is it possible to construct and operate economically a combination car that will be as attractive to the riding public as the well known open car?

F. L. Hubbard, Assistant to the General Manager, Toronto Ry., Toronto.—This cannot be answered intelligently in the space available, but if the people making the enquiry would write to our Master Car Builder, they could perhaps ascertain something to their advantage, as we have operated convertible cars for years, which possessed the advantages of open cars in the summer and closed cars in the winter.

**Checking of Freight.**—What plan does your company follow to ensure proper receipt of freight shipments at destination; are original shipments checked on station platform, or are all shipments checked into freight cars, or do you have a different plan?

C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.—Shipments are checked into car, either from freight trucks or station platforms, and re-checked when unloading at destination by train crews.

**Wear of Trolley Wire.**—Will a trolley shoe, with 24 lbs. tension on an electric car, operated at high speed, wear the wire more than a 6 in. trolley wheel, with 45 lb. tension, used on the same car? We

have tried shoes on this system and they gave the best results, but the line department claimed that they wore the wire unduly; there was certainly less trouble with poles.

W. R. McRae, Master Mechanic, Toronto Ry.—From observations, I am convinced that a hard polished steel contact shoe operated at the lighter pressure will give better results, trolley wire wear included, than will the wheel at a greater pressure, especially when operated in districts that have a great deal of rain, or moisture on the wire.

**Flange Wear on Steam and Trolley Cars.**—Although it is not the case with wheels on steam road cars, fully 40% of wheels on trolley cars are worn with a thin flange on one wheel and a full flange on one wheel; what is the cause?

W. R. McRae, Master Mechanic, Toronto Ry.—Car wheels used on steam roads are not driver wheels, as is the case of wheels on traction cars. For that reason the flange condition does not exist to any extent.

### Nova Scotia Tramways & Power Co.

Following are extracts from the company's first annual report for the calendar year 1917:—

The organization of the company was effected on Jan. 7, 1917, for the purpose of taking over and operating the Halifax Electric Tramway Co., Ltd., and also of acquiring the Gaspereaux properties with the object of developing an hydro-electric plant thereon. The Halifax Electric Tramway Co. and the Gaspereaux properties were duly transferred to this company, in conformity with the agreements entered into; but owing to the unprecedented increase in the cost of labor and materials, and the extreme difficulty of securing same, the directors deemed it prudent to temporarily defer the carrying out of the project in reference to the proposed hydro-electric development until such time as conditions became more normal.

The general conditions that have prevailed during the first year of the company's history are unlike any ever before encountered, and the abnormal advance in the cost of labor and materials has had its effect upon the operating expenses; and the difficulty of obtaining an adequate number of efficient employees has also tended to retard the progress which would be expected under ordinary conditions. The appalling disaster which befell the city of Halifax on Dec. 6 proved to be a severe blow to the company. The general upsetting of conditions in the city interfered to a great extent with the company's business, and had the effect of very materially curtailing the revenue during December, as well as increasing operating expenses. Very extensive damage was done to the company's property, and while the actual cost of repairing all the damage sustained cannot be ascertained at this time, it is estimated by the officials that it will be in the vicinity of \$60,000. A number of the employees sustained injuries as a result of the disaster, and one inspector, one conductor and two motormen lost their lives, three of these being on duty at the time. Great difficulty has been experienced in obtaining the requisite number of competent employees to carry on operations, and in an effort to overcome this difficulty women conductors have been employed on the cars with reasonable success.

The tramway gross earnings show the average increase for the year, and it is anticipated that the same ratio of increase



will be maintained during 1918. Operating expenses have increased in a greater ratio than the earnings; but under the prevailing conditions, the directors consider that the results attained should be

deemed satisfactory.

The street railway passenger receipts were \$413,341.92, against \$388,494.05. Passengers carried, 9,534,162; car mileage, 1,371,334.

## New Brunswick Power Co's Annual Report.

Following are extracts from the first annual report, presented at the annual meeting in St. John, N.B., recently:—

The statement presented covers 10 months from Mar. 1, 1917, when the company commenced operations. The total operating revenue was \$569,200.40, and the total operating expenses \$424,893.65, leaving a gross income of \$144,306.75. Adding to this the net revenue from non operating departments, such as the Eastern Electric Co., amounting to \$21,553.76, makes for the year a gross income of \$165,860.51 available for the payment of bond interest and preferred dividends. Of this \$74,344.49 was paid in bond and other interest. The dividends on preferred stock paid for the nine months amounted to \$70,875, and accrued dividends for October \$7,875, leaving a surplus of \$12,766.02.

During the year the company made extensive additions to its plant. In the power house it spent \$72,112.24, very materially increasing its boiler capacity, thus enabling it to generate a larger amount of current. In the railway department it spent \$14,543.18 on new equipment, and \$11,803.09 for replacement of special work, etc. In addition to these figures, a considerable sum was spent in improving the tracks by using arc welding machines and rail grinder, building up the cupped ends of rails and welding the joints, which secured a smooth road-bed and easier riding for street car patrons. This work will be continued during 1918. Additions and extensions were also made in the electric and gas departments, amounting to \$24,476.95.

Shareholders will undoubtedly have noticed with some apprehension the company's application for relief in regard to its gas, railway and electric rates made recently before the Public Utilities Commission. In common with other operating companies of this character in America, this company is facing a situation which requires the undivided attention of the directors and the hearty co-operation of all shareholders in order to preserve the property intact against increasing costs. Those who are familiar with the taking over of the St. John Ry. Co. by the N.B. P. Co. will remember that in doing so the new company was obliged by law to put into effect a schedule of lighting rates considerably lower than old rates then prevailing. It was impossible at that time to tell accurately what decrease in the company's net revenue these new rates would result in, but after operating eight months under the new rates, the directors find that the decrease in revenue, resulting from these rates, will total \$58,000 a year.

The second and still more serious problem we are facing is that of coal. Up to Dec. 31st, 1917, we were able to buy our coal delivered in our power house at \$3.50 a ton and delivered at gas works \$4.20. On Jan. 1, 1918, however, the coal companies increased the price \$3.65 a ton, so that now it costs \$7.20 in the power house and \$7.95 at the gas works. With a gross consumption last year of 22,522 tons, it will be seen that we are facing a net increase in the cost of coal for the coming year of \$82,000. We regret that we are

unable to make a contract for our coal supply for a longer period than one month, and the estimate given is based on last year's consumption and the supposition that we will not have to meet any further advance.

In addition to this we were, last summer, obliged in all fairness to inaugurate a general increase in the rate of wages to all employees, which on a yearly basis will total \$40,000. In view of the continued increased cost of living and the necessity of retaining with the company the high standard of labor which we have with us, the question of still further increasing the rate of pay to all employees must be given serious consideration. It will be seen from these three items alone that a substantial increase of revenue will be necessary to take the place of these additional expenditures which we will be facing in full force during the coming twelve months. There are many other items of increased cost which enter into the operating of a property of this character, notably the cost of materials necessary for the maintenance of our plant.

The directors had under contemplation at the time of the purchase of the St. John Railway property, the construction and development of water powers on lands owned by your company in the vicinity of St. John. Owing, however, to the extraordinary demand for money due to war loans, and the fact that the American market, from which we had anticipated obtaining our funds, was practically closed a month after our taking over the property, by the U.S. going into the war, your directors had to forego temporarily this part of the development of your property. We have, however, at present under consideration a plan which may enable us to carry on the construction of our water powers, but at the present time no definite statement can be made. A great deal of the company's future depends upon the fairness and breadth of vision possessed by those who will have the determining of whether or not the company, under extraordinary war conditions, shall receive fair treatment in regard to increase in rates. Unless some measure of relief is accorded through this channel, and through the development of your water powers, we will undoubtedly be faced with the serious possibility of inability to pay our preferred dividends. If this condition comes about it will hamper the company for many years in the securing of additional capital for its necessary development work, necessary not only in the interests of the company, but in the best interests of the city as well.

Railway receipts .....\$260,054.53  
Light and power earnings ..... 242,659.23  
Gas earnings ..... 66,486.64  
Merchandise and non-operating income. 21,553.76

Operating expenses .....\$424,893.65  
Interest on bonds ..... 72,916.68  
Other interest ..... 1,427.81  
Net earnings to surplus account ..... 91,516.02

Dividends paid to Dec. 1 .....\$ 70,875.00  
Dividends accrued for December ..... 7,875.00  
Transferred to profit and loss ..... 12,766.02

Profit for year after providing for interest on bonds and all charges .....\$ 91,516.02

The directors were re-elected, as fol-

lows:—L. R. Ross, President; F. R. Taylor, H. P. Robinson, W. E. McGregor, P. W. Thomson, R. B. Emerson, L. C. Gerry.

## Nipissing Central Railway Annual Report.

Following are extracts from the annual report of this railway for the year ended Oct. 31, 1917, issued by the Timiskaming & Northern Ontario Ry. Commission, which operates it for the Ontario Government:—

Assets.	
Cost of road .....	\$306,095.21
Cost of equipment .....	65,585.07
Townsite property, North Colalt .....	240,361.45
Working assets .....	29,874.22
Deferred debit items .....	4,750.50
Value of franchise .....	141,393.32
	<hr/> \$794,053.77

Liabilities.	
Capital stock .....	\$530,000.00
Advance from T. & N. O. Ry. ....	247,639.50
Working liabilities .....	15,246.88
Deferred credit items .....	6.10
Profit and loss balance .....	1,161.29
	<hr/> \$794,053.77

Receipts and Expenditures.	
Transportation revenue .....	\$93,331.75
Non-transportation revenue .....	2,115.75
	<hr/> \$95,447.48

Maintenance of way and structures .....	\$15,717.59
Maintenance of equipment .....	12,484.13
Power .....	17,481.46
Conducting transportation .....	26,568.09
Traffic .....	293.60
Transportation for investment	
Cr. ....	7,717.86
	<hr/> 80,259.77

Total operating expenses .....	80,259.77
	<hr/>

Net operating revenue .....	\$15,189.75
Other income .....	268.59
	<hr/>

Total income .....	\$15,458.34
Deductions from income .....	10,825.77
	<hr/>

Net .....	\$4,632.57
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Compared with the year ended Oct. 31, 1916, transportation revenue decreased \$15,605.61, and the other than transportation revenue increased \$655.14, while the expenditures increased \$5,523.10, giving a decrease in net income of \$20,473.57. The other income decreased \$231.36, and there was a decrease of \$3,140.05 in the deductions from income, the net result showing a decrease of \$17,564.88 against the year ended Oct. 31, 1916. The T. & N.O. Ry. Commission was paid \$2,000 out of profit and loss.

Traffic Statistics.	
Passenger car hours .....	23,439
Passenger car miles .....	240,350
Total passengers carried .....	1,207,390
Average daily receipts .....	\$255.70
Average receipts per car hour—passenger, cents .....	\$3.40
Average receipts per car mile—passenger, cents .....	\$0.332
Earnings per passenger, cents .....	\$0.065

The Toronto Transportation Commission for the current year consists of the Mayor, T. L. Church, Chairman; R. C. Harris, Commissioner of Works, Vice Chairman; T. Bradshaw, Commissioner of Finance; W. Johnston, City Solicitor; Controller Robbins, Ald. Gibbons, E. L. Cousins, Manager, Toronto Harbor Commission, and H. H. Couzens, Manager, Toronto Hydro Electric System. As mentioned in our last issue, plans and specifications for the building of cars and car shops have been mentioned, but nothing will be done in the matter until a report on the subject is made by R. C. Harris and T. Bradshaw.

**Montreal Tramways Co. Wages.**—A press dispatch from Montreal, Apr. 24, stated that the company's employees are asking for increases in wages of from 5 to 11c an hour, according to length of service. It is stated that the matter will probably be taken up by the recently appointed tramways commission.



## Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—The Brantford, Ont., City Council was petitioned April 10, to extend the B.M. Ry. to the Terrace Hill district, as had been promised from time to time. (Mar., pg. 117.)

**Calgary Municipal Ry.**—The Calgary, Alta., Municipal Ry. is reported to have let a contract to the Birnie Lumber Co. for the supply of 10,000 ties for replacement purposes, at 85c each. (Mar., pg. 117.)

**Grand River Ry.**—Owing to exceptionally high water on the Grand River this spring, the company's tracks along the river in Hespeler, Ont., could not be used for some little time. A press report states that the tracks are to be moved away from the river. Surveys are said to have been completed which will do away with a number of curves, and give a practically straight route. The line referred to is part of the line long known as the Galt, Preston & Hespeler St. Ry.

**Guelph Radial Ry.**—We are officially advised that it is proposed to relay about 2,000 ft. of track on Dundas Road, Guelph, Ont., with 80 lb. T rails, with gas weld bonds, on concrete foundations. A. H. Foster is Manager.

**Lake Erie & Northern Ry.**—M. W. Kirkwood, General Manager, and other officials were in Simcoe, Ont., April 4, in consultation with the town council respecting the approach to the station and other matters which have been unsettled since the line was opened from Brantford to Port Dover. (Sept., 1917, pg. 368).

**London & Port Stanley Ry.**—The Ontario Legislature has authorized the City of London to pass a bylaw to raise \$131,000 upon 30 year debentures to pay for the construction and equipment of buildings and works completed, and the construction of other works by the London Railway Commission, which operates the London & Port Stanley Ry. The act also authorizes the passage of a bylaw by the city council to raise \$7,000 by bylaw to pay for the construction of a switch and bridge in connection, for the L. & P.S. Ry. Neither of these bylaws requires the ratepayers' assent. (Mar., pg. 117.)

**The Montreal & Southern Counties Ry.**'s application for permission to lay an extra set of car tracks on McGill St., Montreal, so as to improve terminal facilities, and permit of the more expeditious handling of the cars serving the south shore, was refused by the city commissioners, April 17. (April, pg. 164.)

**The Nipissing Central Ry. Co.**, which is owned by the Province of Ontario and operated by the Timiskaming & Northern Ontario Ry. Commission, is asking the Dominion Parliament to extend for five years the time within which it may build a line from Latchford, Ont., to the Grand Trunk Pacific Ry. near the Matagami River, Que.; from Latchford along the Montreal River, to the G.T. Pacific Ry., in Ontario; from Latchford southerly to Timagami station; an extension of the present line from Liskeard westerly to meet the last mentioned line; a line from Liskeard to Charlton; a line from the first mentioned line, starting at Wendego Lake, westerly to the T. & N.O. Ry., and a branch line from the first mentioned line, starting in Casey Tp., to North Timiskaming, on the Des Quinze River. (April, pg. 164.)

**Ottawa Electric Ry.**—It does not appear that the Dominion Government has reached any decision as to when it will

proceed with the erection of the new bridge at Chaudiere Falls, Ottawa, but it is expected that the work will be gone on with during the summer. When this is settled, the O.E. Ry. can proceed with its plans for providing a service across the bridge. (Feb., pg. 77.)

The Western Power Co. of Canada owns about five miles of railway along the Stave River, near Vancouver, B.C., which was built by its predecessor, the Western Canada Power Co., and controls the Burrard, Westminster & Boundary Ry. and Navigation Co., which has a Dominion charter to build a system of electric railways with New Westminster as the centre point. The Dominion Parliament is being asked to authorize the Western Power Co. to operate the railway built by the Western Canada Power Co. as fully and as effectually as that company was authorized to do by the provisions of its act of incorporation of 1910. (Oct., 1916, pg. 424.)

**Winnipeg Electric Ry.**—We are officially advised that the company proposes to instal automatic electric track switching devices. Orders have been placed for a sufficient number for installation at the most congested points on the company's line. If the devices prove satisfactory in operation, they will be adopted as a permanent improvement. Other improvements have been considered, but definite steps for their adoption have not been announced. (Sept., 1917, pg. 368.)

## London Street Railway Passenger Fares.

The London St. Ry.'s application for permission to increase its passenger fares, as published in Canadian Railway and Marine World for March, was considered by the city's finance committee on April 11, when President C. Currie and Manager C. B. King represented the company. The mayor decidedly opposed the application and recommended the company to cut down operating expenses. One alderman suggested that the company should default in its obligation to the bondholders, to redeem \$35,000 of its bonds during each of the last ten years of its franchise, and said to the company's officials present: "Your funeral is our holiday." It was decided finally to ask the company to furnish detailed statements for several years past, and the committee's feeling seemed to be to submit the matter to a vote of the people. In the meantime the company will probably act on the mayor's suggestion, to reduce operating expenses and will curtail the present service. At a city council meeting held subsequent to the committee meeting referred to above, a committee was appointed to look into the company's assessment, with a view to increasing it.

In connection with its application, the company has been carrying on an advertising campaign in the local papers, discussing the whole matter in a fair and moderate spirit. Starting out with the statement that, while under the agreement the company is bound by the fare schedule fixed in 1895, which was then considered reasonable and gave profit; the fare is the same today, while the company has to meet expenses on the 1918 basis; it is shown that the company can give and the city get the best service only by co-operation between the two interests. The next point taken is that better track, better cars and better service are required, but that in order to get them the company must have a larger income than is produced by the present average fare

of 4c. It is then shown that an increased fare is necessary, because the cost of all material required for railway construction, maintenance and operation has largely increased since 1895, many things having advanced from 50 to 380% since 1914; while wages, which ran from 12½c to 15c an hour, have increased to from 23c to 28c, and may have to be further increased. The final argument is that money invested in the line is entitled to a return. The cost of the line is said to have been \$1,466,348.44 cash, raised about one half by bonds, and the remainder by stock. It is pointed out that the London & Port Stanley Ry. has to pay 5½% for its bonds, although it has the credit of the city behind it, in addition to its own. The London St. Ry. pays 5% on its bonds, while the shareholders have received an average of 5½% since 1895, including a stock dividend. All surplus earnings, which might have been divided among the stock holders, have gone into the line, and it is necessary to maintain the line in an "even moderate state of efficiency" to pay interest on a considerable floating indebtedness.

## Winnipeg Electric Railway's Annual Report.

The references to this company's annual report in Canadian Railway and Marine World for April were made from a press report, which was not altogether correct. The printed report, which had not been received, has since come to hand, and shows that the decrease in net income for 1917 was \$151,621.80, instead of \$91,621.80, as stated in the press report. Following are extracts from the official report:—

The net income, on the same method of accounting, shows a decrease of \$151,621.80 compared with 1916, notwithstanding the fact that the gross revenues for 1917 show an increase of \$27,840.20 over 1916. This is a disappointing statement, but so long as the materials required by the company in its operations continue to increase in price, and demands for increased rates of wages to employees predicated on higher cost of living have to be met, and the jitney question remains unsettled, no substantial improvement in net income can be expected. The directors believe, however, that the sentiment of the citizens of Winnipeg is favorable to a permanent settlement of the vexed question, and it will be the duty of the board to endeavor during the present year to so adjust any outstanding differences between the city and the company that the jitney and other matters may be speedily and satisfactorily arranged to all interests concerned. General business conditions in Winnipeg are improving, and if a satisfactory adjustment of the jitney question is reached at an early date, arrangements will be made to carry out certain improvements in the physical properties which have engaged the directors' attention for some time.

**Hull Electric Co. Wages.**—Employees of the Hull Electric Co., which operates an electric railway between Ottawa, Ont., and Hull and Aylmer, Que., have applied for a board of conciliation in connection with wages. G. D. Kelly, barrister, Ottawa, will represent the company.

An Ottawa Electric Ry. official is reported to have said that the company is prepared to deal with the question of having women conductors, if the state of the labor market should render such a step advisable.



### The Montreal Tramways Commission.

The Quebec Government has appointed the three members of the administrative commission which is to exercise control over the Montreal Tramways Co., under its new franchise, as detailed in Canadian Railway and Marine World for March, pg. 110. The appointees are: Jos. F. Saint-Cyr, Judge of the Court of Sessions, President; L. A. Herdt, D.Sc., E.E., Professor of Electrical Engineering, McGill University; and J. S. Archibald, architect, all of Montreal. The salaries are, for the President, \$7,500 a year, and for the two other commissioners, \$6,000 a year each. These salaries are to be paid by the company, which will also pay the salaries of the staff engaged by the commission and all other expenses that are reasonable. The commission is authorized to engage experts at the company's expense, provided the charges are not exorbitant. If they are so considered, the company can appeal to the Quebec Public Utilities Commission to have the expenses revised.

### The Toronto Railway Penalized for Car Shortage.

On the application of the City of Toronto, for the Ontario Railway and Municipal Board to enforce its order on the Toronto Ry. for the supply of additional cars, which was referred to in our last issue, the board ordered on April 19 that the company pay to the city \$24,000, being \$1,000 a day, from Mar. 26, when the act referred to below was passed, until the date of the board's order, in default of providing 100 additional cars, as ordered by the board. A stay of seven days was granted to allow the company to appeal.

The date by which the 100 cars had to be in operation, according to the board's original order, was Jan. 1, 1918, but the board pointed out some little time ago that it had not the power to inflict penalties. At the city's instance, a bill was introduced in the early part of the Ontario Legislature's recent session, providing that in default of the company complying with the board's order, the company should pay the city \$500 a day from Jan. 1, 1918, for each car supplied by the company less than the number agreed in the order, such penalty to continue in force from day to day until the full number of cars called for by the order had been put in operation. This bill was withdrawn at the government's request and a bill to amend the Ontario Railway Act was introduced by the Attorney General, containing, among others, the following clauses:—

"4. The Ontario Railway Act is amended by adding the following as section 262a:

"262a. (1) The Board, for the purpose of enforcing compliance with any order heretofore or hereafter made by it, requiring any railway company operating a railway or street railway in whole or in part upon or along a highway under agreement with a municipal corporation, to furnish additional cars or equipment for its service, in addition to any other powers possessed by it, may order such company to pay to the corporation of the municipality in which the company so operates, a penalty not exceeding \$1,000 a day, for non compliance with any such order;

"(2) An appeal from any such order or from the refusal by the board to make an order, shall lie to the Appellate Division

of the Supreme Court of Ontario at the instance of either the said corporation or the said company as fully in all respects as from the judgment of a judge at the trial of an action in the Supreme Court; and the judgment of the said Appellate Division shall be final and binding, and no further appeal shall be allowed;

"(3) Notice of such appeal may be given within ten days after the date of the order of the board, or of the refusal of the board to make an order, and the appeal shall be set down for hearing as provided by Rules of Court."

### Mainly About Electric Railway People.

F. L. Butler has been appointed Transportation Engineer, Winnipeg Electric Ry.

S. S. Oliver has been appointed Chief of Stores, Quebec Ry., Light & Power Co., Quebec, Que., vice H. G. Bosse, promoted.



7528  
S. S. Anderson,  
General Manager, Sandwich, Windsor & Amherst-  
burg Railway.

J. J. Newell has been appointed Electrical Superintendent, British Columbia Electric Ry., Vancouver, vice W. H. Fraser, resigned.

H. G. Bosse, heretofore Chief of Stores, has been appointed Comptroller, Quebec Ry., Light & Power Co., Quebec, Que., vice H. K. Tennant, resigned.

W. G. Ross, Vice President, Dominion Park Co., Montreal, has been elected President, succeeding H. A. Dorsey, deceased. Mr. Ross is a director of the Montreal Tramways Co., and President of the Montreal Harbor Commission.

Thos. H. Smallman, Vice President, London St. Ry., died at London, Ont., Apr. 16, after a short illness, of pneumonia. He was born at Parsonstown, Tipperary, Ireland, in 1840, and came to Canada about 60 years ago, and was for a time a conductor on the old London & Port Stanley Ry. He was connected with several industrial, insurance and financial

companies, and was a member of the executive committee of the Canadian Manufacturers' Association.

R. Home Smith, of Toronto, has been elected President of the Buffalo, Lockport & Rochester Ry., the head office of which is at Rochester, N.Y. R. C. Vaughan, Assistant to Third Vice President, Canadian Northern Ry., and E. F. Seixas, Manager, Niagara, St. Catharines & Toronto Ry., are also directors.

H. N. Kittson, of Hamilton, Ont., who was appointed a member of the Ontario Railway and Municipal Board, when it was organized, in June, 1906, resigned last year, his resignation having been accepted by the Ontario Government June 5, 1917, although this fact was only made public recently. An unconfirmed press dispatch says that G. C. Wilson, M.P. for Wentworth, has been offered the position vacated by Mr. Kittson, and that he will accept it at the end of the Dominion Parliament's present session.

Sidney Smith Anderson, whose appointment as General Manager, Sandwich, Windsor & Amherstburg Ry., Windsor, Ont., was announced in our last issue, was born at Windsor, Ont., Apr. 14, 1881. From Oct., 1897, to Jan., 1898, he acted as wireman's helper, Clark Electric Co., Detroit, Mich.; Nov., 1898, to May, 1900, in test department, Royal Electric Co., Montreal; May, 1900, to Aug., 1901, student's course, Westinghouse Electric & Manufacturing Co., Pittsburg, Pa.; May, 1902, to 1908, foreman, Light Department, Sandwich, Windsor & Amherstburg Ry., Windsor, Ont.; 1908 to 1915, Superintendent, Light and Power, same company; 1915 to Mar. 27, 1918, Assistant to General Manager, same company.

Charles Johnson, Engineer, Toronto & York Radial Ry., who has been elected a member of the Canadian Society of Civil Engineers, was born at Mildmay, Ont., June 13, 1881, and entered railway service in 1904, and for 6 months of that year, was chainman, rodman and instrument man, Canadian Northern Ry.; 1905 to 1910, Resident Engineer, same road, Parry Sound, Sudbury and Toronto; 1910 to 1911, Assistant Division Engineer, same road, East Toronto; 1911 to 1912, Division Engineer, Ottawa, Ont., to Portage du Fort, Que.; 1912 to 1914, Division Engineer of Construction, same road, North Bay, Ont.; 1914 to 1917, Assistant Engineer, Toronto-Hamilton Highway, and since 1917, Engineer, Toronto & York Radial Ry.

Allan H. Royce, Vice President, Toronto Suburban Ry., who died at Southern Pines, North Carolina, Apr. 15, aged 50, of Bright's disease, was a member of the firm of Royce, Henderson & Boyd, barristers, etc., Toronto, and was solicitor for the Toronto Suburban Ry. for many years. He also did a good deal of other legal work at different times for Canadian Northern Ry., and allied interests and for the C.P.R. He was also solicitor for the Rolls Royce Co. of England, builders of automobiles, airplane engines, etc., being closely related to some members of that company, and he represented it in negotiations with the U.S. Government. He was the first Secretary-Treasurer of the Canadian St. Ry. Association, having been elected at the inaugural meeting in Montreal, Dec. 20, 1904, retaining the position until July 31, 1907, when he resigned. He had been in poor health for several years and went south for a portion of each winter. He was a brother of Lt.-Col. Geo. C. Royce, General Manager, Toronto Suburban Ry., who was with him when he died, and brought his body to Toronto for burial.



## Electric Railway Notes Throughout Canada.

The Nipissing Central Ry. is contemplating buying two interurban car bodies.

Winnipeg Electric Ry. employees put in a demand on April 16 for a 10% all round increase of pay.

The Montreal Tramways Co.'s employees sent a deputation to the management April 17, to ask for an increase of wages. Consideration was promised.

The Hull Electric Co. has ordered one double truck steel sweeper, 46 ft. long over all, equipped with brooms and ploughs for double end operation, from Ottawa Car Manufacturing Co.

It is suggested, from Whitby, Ont., that the portion of the Toronto Eastern Ry., partially built between Whitby, Bowmanville and Oshawa, be completed and operated by automobiles with flanged wheels.

A coal oil stove in an electric locomotive on the Grand River Ry. in the C.P.R. yards at Galt, Ont., exploded April 7, setting fire to the locomotive and practically destroying it. The locomotive will be rebuilt.

A number of electric railway companies throughout Canada are aiding the Dominion and provincial governments' food saving campaign by carrying special advertising inside and outside their cars free.

Several of the municipalities interested have decided that they will not oppose the British Columbia Electric Ry.'s application to the Board of Railway Commissioners for authority to increase the rates charged for freight on its lines.

The "skip stop" policy is being advocated as a means of effecting a saving in the cost of operating the Regina Municipal Ry. It is stated that there are 15 or 16 blocks to the mile in Regina, and the cars stop at every one of them, even during rush hours.

The New Brunswick Legislature has changed the rule of the road, diverting traffic to the right, instead of to the left, which latter is still the custom in Great Britain. This will necessitate some changes in the construction of street cars operated in the province.

Regina Municipal Ry. Sunday travelling is increasing, according to a report made to the street railway committee, April 15. For the three months ended Mar. 31, the surplus earnings over revenue for Sunday traffic were \$402.29, against \$28.98 for the same period in 1917.

The Toronto Civic Ry., by Apr. 5, had five of the 13 double truck cars which were ordered last year, in service on its lines. It is expected that the last car of the order will be in service during July. The car bodies are being built outside and the equipment is being assembled at the railway's car barns in Toronto.

The Regina, Sask., City Council, on April 3, directed the increasing by 10% of the wages of all men in the employ of its street railway department who were in receipt of less than \$1,500 a year. Commissioner Thornton explained that in addition the men in the different classes had been advanced six months, which gave a further increase.

The Edmonton Radial Ry. has arranged to run a special car in connection with the arrival and departure of all the Edmonton, Dunvegan & British Columbia Ry. regular trains, and a special car and trailer to deal with the passenger and milk traffic brought in three times a week

by the gas car service on the E.D. & B.C. R. to and from Westlock.

City Commissioner Thornton is reported to have informed the Regina, Sask., street railway committee on April 10, that the only solution of the street railway financial problem is the operation of one-man cars, and he asked that the council give serious consideration to the question of applying to the Saskatchewan Legislature for power to operate them.

The Montreal Tramways Co. has entered into an additional contract with the Montreal Light, Heat & Power Co., to supply 6,000 k.w. for its peak load, for 18 months from Apr. 1. This power will be delivered at Hochelaga, William St. and St. Denis stations, and the company expects to be able to economize in coal consumption to the extent of 25,000 tons.

The Toronto Ry. Co.'s adjourned special meeting of shareholders was held Apr. 4, to pass a bylaw to increase the number of directors by two. The meeting was originally called for Feb. 26, but was adjourned, owing to the required number of shares not being represented. At the Apr. 4 meeting the bylaw was passed authorizing the number of directors to be increased from 7 to 9.

The Moose Jaw Electric Ry. is asking the Moose Jaw, Sask., City Council for some financial concessions. The company has not been able to earn a dividend for the past four years, and in addition to taxes, amounting to about \$2,000 a year, under the terms of the franchise, the mileage payment of \$1,000 a mile for single track, with \$500 a mile for second track, comes into effect.

The Calgary, Alta., City Council and employees of the Calgary Municipal Ry. are discussing a new wage schedule. A joint committee of aldermen and the commissioners has offered a 48c maximum scale, to be retroactive to Jan. 1, with a seven hour day for all spare men. There are a number of details about which there is considerable difference of opinion, but an agreement was expected to be reached by April 30.

As a result of the increased fare schedule recently put in force on the Regina, Sask., Municipal Ry., the city commissioners estimate that the deficit for this year on the operation of the line will be \$46-824.82. The estimated deficit for 1917 was \$55,874.76 and the actual deficit was \$63,898.99. The estimates for this year provide for an increase of \$10,000 in the cost of operation and of \$27,000 in the revenues. The income up to the present shows an increase of 2½%.

The British Columbia Electric Ry. completed the 21st year of its existence April 3. Since April 3, 1897, the company has expended approximately \$46,000,000 upon its various power, lighting and electric railway undertakings in and around Vancouver, New Westminster and Victoria.

British Columbia Electric Ry. conductors and motormen sent a deputation to the British Columbia Government to urge their objections to any proposal to introduce one-man cars into the province.

The Quebec Ry., Light & Power Co. is stated by W. J. Lynch, General Manager, to have suffered considerable loss recently on account of the rioting in that city. Apart from the damage to several passenger cars, there was material loss of revenue, owing to the cessation of the car service on certain routes, by order of the authorities, and also through a falling off

of patronage during the trouble. The company is said to be making a claim against the Militia Department for compensation for losses sustained by the stoppage of traffic in different parts of the city, and for rental of certain of its buildings which were occupied by troops.

The Regina, Sask., City Council had under consideration on April 3, a special report from the street railway committee upon the railway situation. The committee recommends that the office of Superintendent be abolished, and a traffic manager be appointed to look after the operation of cars, and that a head clerk be appointed to look after the office work. The Superintendent's salary is \$2,250 a year, and the two officers to be appointed would each be paid less than that amount. The report dealt with a number of other matters, and as Commissioner Thornton had some further information, the report was referred back to the committee for further consideration.

On an application for a betterment of the service on the Toronto & York Radial Ry., Scarborough Division, the Vice Chairman of the Ontario Railway and Municipal Board stated that the board could not make any order unless there was some agreement between the company and the city regarding the portion of the line within the city limits. The Toronto Works Commissioner said that the company was operating that portion of the line pending the completion of an arrangement. C. L. Wilson, Assistant Manager, T. & Y.R.R., stated that six cars were being operated, and another four would be out on shortly. The company lost some cars in the recent fire at its Scarborough barns.

The Quebec Public Utilities Commission is reported to have decided that it would not be advisable at present to compel the Montreal Tramways Co., and other companies having wire and cable lines carried on poles on Montreal streets, to transfer them to the conduit system provided by the city. The reason for this decision is said to have been the high cost of the materials required and of labor, while it is also suggested that even if the transfer were made, the service could not be improved, the only advantage being the clearing of the streets from poles and wires. The area which the city desired to have cleared is enclosed by Notre Dame, St. Lawrence, Craig and McGill streets and Victoria Square. The city's conduit system was completed in 1915.

Winnipeg City Council has, under the terms of recent provincial legislation, passed by a vote of 12 to 5, a resolution authorizing the preparation of a bylaw to prohibit the operation of jitneys in the city, the prohibition to begin May 1, and for an agreement with the Winnipeg Electric Ry. in connection with improvements to be made in the service as a result of the prohibition of jitney traffic. The agreement has been prepared and was discussed at meetings of the council on April 11 and 15, when further discussion was adjourned. The principal point of division is a section reading: "The company agrees with the city that it will not at any time apply for an increase in the fares for carrying passengers on its system." The matter came up at a meeting of the city council, April 19, at which it was reported that neither side would recede from the position taken up upon the agreement as a whole is to stand or the fare question. It is stated that fall by the fate of this section.



Sir Henry Drayton, Power Controller, has issued an order for the London Electric Co., which closed down its plant Apr. 1, to restart power production to supply 1,000 h.p. for the London St. Ry. The London Electric Co. some time ago decided to go out of business, leaving the field to the local hydro electric commission. Owing to the extraordinary demands for power at present, it has been considered advisable to utilize all available power plants. The hydro electric commission being relieved of supplying power for the London St. Ry., is required to take over the customers formerly supplied with light by the company, and if it has any surplus power available, it is to supply it to the London St. Ry., the London Electric Co. merely making good any deficiency.

The British Columbia Electric Ry. Employees Magazine, made its appearance at Vancouver April 1. At present the magazine, which is to be issued monthly, is being circulated among the employees of the British Columbia Electric Ry. and Vancouver Gas Co., engaged in the offices, the power plant, substation operators and agents in Vancouver and the mainland territory. Later on it will be circulated among the conductors, motormen and linemen, and the Victoria employees of all classes. The idea of having an office paper originated with the executive committee of the office association, and was taken up with the management, with the result that the company placed the magazine at the disposal of the employees "in which to print news and exchange views on current affairs about the company." The April issue is introductory, one-fourth of the space being taken up with a sketch of the company's history, three pages are given over to news and the rest is miscellaneous matter.

### Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry. and allied companies:—**

	Jan. 1918	Jan. 1917	7 mths. to Jan. 31, 1918	7 mths. to Jan. 31, 1917
Gross	\$559,569	\$493,315	\$3,483,229	\$3,158,700
Expenses	388,407	362,836	2,712,270	2,488,515
Net	171,162	130,479	770,959	670,185

**Cape Breton Electric Co.—**

	Feb. 1918	Feb. 1917	2 months to Feb. 28, 1918	2 months to Feb. 28, 1917
Gross	\$36,294.55	\$32,010.16	\$77,722.78	\$70,591.17
Exp	28,999.16	19,445.02	62,255.81	42,654.01
Net	7,295.39	12,565.14	15,466.97	27,937.16

**London & Lake Erie Ry. & Transportation Co.—**It is reported from London, Ont., that the question of the city purchasing the whole or part of this electric railway will be reopened shortly.

**London Street Railway.—**

	Mar. 1918	Mar. 1917	3 mths. to Mar. 31, 1918	3 mths. to Mar. 31, 1917
Gross	\$38,320.41	\$35,705.10	\$108,240.62	\$101,661.83
Net	10,583.20	9,955.47	27,215.04	28,816.06
Exp.	27,737.21	25,749.63	81,025.58	72,725.77

**Regina Municipal Ry.—**

	1918.	1917.
Receipts for March	\$22,490.93	\$21,175.27
Passengers carried	453,592	477,553

**Toronto Ry., Toronto & York Radial Ry., and allied companies:—**

	Jan., 1918	Jan., 1917
Gross	\$1,068,319	\$1,002,469
Expenses	590,657	531,668
Net	477,662	470,801

**Winnipeg Electric Ry. and allied companies:—**

	Jan., 1918	Jan., 1917
Gross	\$334,642	\$319,945
Expenses	255,850	231,423
Net	78,792	88,522

The net for January, after deducting fixed charges, was \$21,208.81. The gross earnings for February were \$298,208.81. The gross earnings for February were \$298,898.63; net after operation, \$71,402.95; surplus after fixed charges, \$15,557.97.

### Hamilton Street Railway Wages.

Some weeks ago, the Hamilton Street Railway's conductors and motormen applied for an increase in wages, and for certain other concessions. All the points at issue were settled, by negotiation between the company and the men, except the rate of wages, which the company offered to submit to arbitration. This offer was accepted by the men and application was made to the Minister of Labor for a conciliation and investigation board, the company selecting as its representative S. F. Washington, K.C., of Hamilton, and the men W. D. Robbins, Secretary, Toronto St. Ry. Employees Union, and one of the Toronto city controllers. County Judge Livingston, of Welland, was selected as the third arbitrator.

The wages heretofore in effect are: 1st year, 22c an hour; 2nd year, 24c; 3rd year and after, 28c, with a war bonus of 2c in addition.

The rates asked by the men are: 1st six months, 36c; 2nd six months, 38c; 2nd year and after, 42c.

We are advised that the arbitrators, on Apr. 25, unanimously agreed to recommend a settlement at following rates:—1st year, 30c.; 2nd year, 34c.; 3rd year and after, 37c. The men accepted the award at a mass meeting that evening.

### Misrepresentations about Cleveland Electric Railway Fares Corrected.

The electric railways of New York State special committee on ways and means to obtain additional revenue has issued the following circular:—"A number of newspapers, in commenting upon the New York Court of Appeals' decision in the 6c fare case, have referred to fares in Cleveland, Ohio, as demonstrating that service can be given for 3c, with an additional charge of 1c for a transfer. The committee believes that this statement should be denied wherever it appears. The fare in Cleveland today is 4c, with a 1c charge for a transfer, no rebate, and there is every prospect that this rate will be further increased. It should also be remembered that this low fare does not apply to the entire system, and that in some instances fares as high as 8c are charged.

"The increased cost of operation has hit Cleveland as it has every other electric railway system, and fares have been increased three times since Nov., 1917. Fares in Cleveland are regulated by what is known as the 'interest' fund, into which goes all receipts remaining after operating expenses, maintenance, depreciation and taxes are paid. When this fund exceeds \$700,000, the fares are automatically lowered; when it drops below \$300,000, they are automatically increased. In Nov., 1917, they fell below \$300,000 in the fund and in spite of two increases in fare, in March of this year, it had fallen to \$120,000, necessitating still another increase. It is the opinion of those informed as to the situation that this latest increase will still prove insufficient and that a further advance will be necessary."

### Legislation Respecting Passing of Electric Railway Cars.

The Motor Vehicles Act, Revised Statutes of Ontario, 1914, chap. 207, as amended by the Motor Vehicles Amendment Act, 1916, chap. 47, provides as follows:

"15. When a motor vehicle meets or overtakes a street car, or a car of an electric railway, which is operated in or near the centre of the travelled portion of the highway, which is stationary for the purpose of taking on or discharging passengers, the motor vehicle shall not pass the car, or approach nearer than 6 ft. measured back or forward from the rear or front end, as the case may be, of the car, on the side on which passengers are getting on or off, until such passengers have got on or got safely to the side of the street as the case may be."

The Ontario Legislature, at its recent session added the following to the Motor Vehicles Act:—

"15a. No person in charge of a motor car, or the car of an electric railway operated in or near the centre of the travelled portion of the highway, which is stationary or in motion, shall pass on the left hand side of such car, having reference to the direction in which such car is travelling."

**Sandwich, Windsor & Amherstburg Ry. Wages.**—As stated in Canadian Railway and Marine World for April, a board of conciliation was appointed to consider disputes between the Sandwich, Windsor & Amherstburg Ry. and its employees. The board, which consisted of M. G. Campbell, chairman; E. G. Henderson, representing the company; and F. C. Kirby, representing the men, has reported recommending an advance in wages of 7c an hour, making them as follows: First six months 35c, second 6 months 37c, 2nd year 38c, 3rd year and afterwards 40c. An additional allowance of 1c an hour, exclusive of overtime, is to be paid all classes of conductors and motormen, in lieu of uniforms. Caps and badges are to be supplied free by the company, and all men to be in suitable uniform, clean and tidy when on duty. A Windsor press dispatch says the board refused the men's demands for recognition of their union.

**London St. Ry. Wages.**—The London St. Ry. employees applied to the company at the end of March for an increase in wages. A London press dispatch says that the increase asked is about 10c an hour, that the present wages of conductors and motormen range from 23c to 28c an hour, and that the increases asked would make them range from 32c to 38c. Other concessions were also asked. The management pointed out to a deputation of the men, that if it had paid for 1917 a dividend of \$19,124.40, which would have been a just charge against earnings, there would have been a deficit of \$24,827.60 on the year's operations, and that it was not in a position to pay higher wages. The matter is still unsettled.

**Electric Railway Fares in Quebec.** Canadian Railway and Marine World for April contained particulars of the Quebec Ry., Light & Power Co.'s application to the Quebec City Council, for permission to increase its street railway fares and gas rates. The application was read at a city council meeting on Mar. 15 and was referred to the finance committee. Owing to the committee's time being considerably taken up with changes in taxation and preparation of the estimates for the ensuing year, it will probably be taken up by the committee early in May.



# Marine Department

## The Minister of Marine's Explanation of the Dominion Government's Ship-building Programme.

In the House of Commons, on April 4, when the Naval Service estimates were being considered, Mr. Lemieux, M.P. for Maisonneuve, asked the Minister of Marine, Mr. Ballantyne, to give particulars as to the programme for naval construction in Canada. In replying, the Minister said:

The Government's programme is not for naval ships, but for mercantile marine ships. During the past year, there has been a certain type of naval ship built at various yards in Montreal and throughout Canada for the Imperial Government and also for the Canadian Government. I do not think it would be right for me to enter into details as regards the type of naval ships that have been so built, or as regards those that are under construction. Suffice it to say that I am very glad to make known that all the war vessels which have been built in the various yards of Canada, including that of Canadian Vickers, Ltd. at Montreal, have been constructed equally as well as they could have been in the old country, or in any other land.

At present there are 14 shipyards for building steel ships in Canada. If all of these yards were unoccupied at present and were all engaged building for the Canadian Government, the standard type of steel ships, the annual tonnage output would be 250,000 tons. When I had the honor of being called to the portfolio of Marine and Fisheries and Naval Service, I found that the Dominion Government was advancing money through the Imperial Munitions Board, under the direct management of Sir Joseph Flavelle, to keep all of the steel shipyards in Canada fully occupied in building ships for the mother country. It seemed to me, and also to the government when I brought the matter to its attention, that the time was opportune for Canada to embark upon the building of steel ships, as a national, permanent policy, and, after giving the matter very careful consideration for some months, and working out a comprehensive programme on good, sound, business lines, I brought the proposal before my colleagues in the government, and it was unanimously decided, that after the Imperial Munitions Board contracts were completed, all the berths in all the shipyards of Canada which are building steel ships would be utilized to the full in building steel vessels for the Canadian Government.

Our programme is that, as these berths become vacant and the Imperial Government ships are completed, they are taken up by the Canadian Government. At present we are having two ships built by Canadian Vickers, Ltd., of Montreal, one of 8,100 tons d.w. capacity, an 11-knot ship; and another of 4,350 tons. I have every hope that this autumn both of these vessels will be put in commission for the Canadian Government. It will be the first time in the history of Canada that sea going vessels as large as the two I have referred to have been built in Canada, by Canadian money, and owned by the Canadian Government; and I am very glad to know that members on both sides of the House join in favoring the policy that the Canadian Government is undertaking in the building, permanently, of steel vessels to keep the present yards

going. I hope a little later on, as the finances of the country become less strained, that the appropriation which is allotted to my department for building steel ships will be very much greater than it is at present. In addition to the two ships that are being built by the Canadian Vickers for the Canadian Government, another ship of about 5,000 tons is being built by the Wallace Shipyards at North Vancouver. Another vessel of 3,550 tons is being built by the Collingwood Shipbuilding Co. at Collingwood, Ont. Vessels that are being built in the yards on the great lakes are necessarily limited, as to size and tonnage, so as to conform to the depth of water in the canals. Ships that are being built in any of the yards on the great lakes cannot draw more than 14 ft.



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Hon. C. C. Ballantyne, M.P.  
Minister of Marine and Fisheries.

of water, which necessarily needs a limitation as to size in the case of these vessels.

The ships are ordered at so much a ton. I do not believe, and neither does the government, in having ships built on a percentage basis. I would not like the House to think that I accept the first price that is given to me by any of these shipbuilders, at so much per ton for a completed ship, according to the design, blue prints and specifications of the government, for I certainly do not. In the department we have some very able men. Mr. Duguid, the Naval Architect, is a man who has had a splendid training, extending over many years in some of the largest shipyards in England. We also have expert men possessing a thorough knowledge of marine boilers and marine engines, as well as many expert draftsmen.

There are three different types of Can-

adian ships under construction: The 8,000 tonner, the 5,000 tonner, and the smaller sized ship of 3,550 tons. The technical officers of my department estimate what the cost of a ship will be. We also ascertain what a similar ship—a vessel of the same design, class and tonnage—is being built for in the United States and in Great Britain. With this information from both the countries referred to, and our own estimated cost, we have a very excellent check on Canadian shipbuilders, which prevents them charging us an unfair or unreasonable price for the vessel to be constructed. These vessels are built at so much per completed ton according to the specifications and plans of the Marine Department.

As the berths to which I have alluded become vacant from time to time they will be immediately taken up by the Canadian Government, and the existing steel shipbuilding plants throughout Canada will be occupied to their full capacity. I cannot state how many ships are being built by the Imperial Munitions Board at present, but the Prime Minister gave that information to the House on the opening day of Parliament. (This was published in Canadian Railway and Marine World in March and our information was confirmed by Sir Robert Borden in the House of Commons on Mar. 19.) The Canadian Government and the Department of Marine have absolutely nothing at all to do with the Imperial Munitions Board, so far as relates to our shipbuilding programme, and any ships that the latter has ordered are for Imperial account. The duty of the Imperial Munitions Board is to see that they are finished and paid for; and the Canadian Government assumes no responsibility for any of the ships that are under construction at present for the Imperial Munitions Board.

One of the first difficulties that confronted me when considering the adoption of a permanent shipbuilding policy, was that of steel ship's plates. There is no duty on ship's plates coming into Canada. There has not been, and there is not at present, a rolling mill in Canada for the manufacture of these plates. If Canada is to become a shipbuilding nation, as I see no reason why she should not, it is necessary for her to be self contained in so far as concerns all the material that is required for building these mercantile ships; and one of the first things that I set about to try and obtain for Canada was a large plate mill, so that all the plates required for the ships that we are now building, and I hope also for a very much larger programme later on, would be made in our own country. I took the matter up with the large steel manufacturers. I did not confine myself to the manufacturers in this country, but also went to the U.S. steel companies, and asked them what kind of proposition they could place before the Canadian Government in order that we would secure what steel plates we required here. After several months of negotiations with the several steel companies in Canada and in the U.S., the best and most favorable proposition I could get, and the one that was accepted by my colleagues, was that of the Dominion Iron & Steel Company, of Sydney, N.S. There being no duty on



ship's plates, we could not expect any large industry, either in Canada or in the U.S., to come to this country and undertake the erection of a plant for rolling ship's plates, that would involve at least \$5,000,000 capital expenditure, without any protection whatever. These are not days when the policy of protection need be discussed, and as we are more concerned with the prosecution of the war than with tariff matters, I did not raise the tariff question with my colleagues at all, nor do I intend to do so in this house. We went about the task in another manner, which I hope will receive the unanimous approval of the house. In brief, the contract that I have concluded with the Dominion Iron & Steel Co. was made on the following basis: The Dominion Government has guaranteed to the company that they will have a minimum tonnage of 50,000 tons of ship plates a year, extending over five years, making in all a total of 250,000 tons. The price per 100 lb. for the moment is \$4.15. The safeguarding of the public interest, so far as the price is concerned, from time to time, has been arranged on the following basis: Ship plates are made from steel ingots, which in turn are made from pig iron, the pig iron being produced from iron ore. The Dominion Iron & Steel Co. own and operate within British territory facilities to produce all the raw materials that I have just mentioned as being required for the rolling of ship's plates. We have taken, as a basis to adjust this price every six months, the price per ton of steel ingots. The price at the time the contract was entered into for steel ingots was \$25.50 a ton. The price of plates to start with is \$4.15 per 100 lb., based on an ingot price of \$25.50 a ton. These prices were agreed upon after long weeks of negotiation, and I was accused, in a friendly way perhaps, by President Workman, of the Dominion Iron & Steel Co. of driving too hard a bargain with it on behalf of the people of Canada. I do not think that is exactly so, because I consider the contract we have entered into is eminently fair to the company as it is also fair Canada. The mill will take about 15 months to be erected, and Mr. Workman estimates that it will cost about \$5,000,000. The government does not put up one cent of money for the erection of this mill. The government was pressed to advance this money, but I declined to make such a recommendation to my colleagues, because I considered that the Dominion Iron & Steel Co. is strong enough to put up the \$5,000,000 required for the plant, and I, therefore, recommended to my colleagues that we do not advance the money. Accordingly, the company is going to erect this plant at its own cost.

The company claims that within 12 to 15 months it will be turning out all the ship plates that Canada may require. The company estimates that the capacity of the mill will be 150,000 tons of plate a year. In addition to ship plate, it is estimated that there are about 50,000 tons of other plate, such as boiler plate, used in Canada yearly. There is no duty on boiler plate, nor on ship plate. This mill will be a new national industry for Canada, and not only will it turn out the ship plates which we shall require here, and and which, I think, even with the existing yards we have, will run something like 75,000 tons a year, but there is no reason why the Dominion Iron & Steel Co. should not be able to get orders for, if not the whole, at least a part of the 50,000 tons of plate used for other purposes than for ships.

To follow along the policy of safeguard-

ing the public interest so that we shall not be paying too much for ship plate, after the mill has run for six months, turning out the plate, the price of the plate will be determined on the fluctuating price for steel ingots, based on a price of \$25.50 a ton. We were also able to arrange with the company, also with a great deal of reluctance on its part, that no matter how high the price of steel ingots goes, in no event will the price of steel plate cost the government any higher price than \$4.25 per 100 lb. If the price of steel ingot drops over a period of six months, the price of plate will be lowered accordingly. We are not going to take the company's say-so as at what its cost the company's say-so as to what its cost tract that the government shall send expert accountants, whom we shall name, to go over the company's books and costs, and if the price of steel ingots has fallen during the period of six months they will see to it that the government gets a proportionate reduction in the price of steel plates. Those are the essential points in the contract into which we are about to enter. The further particulars will be known when the order in council is laid upon the table.

There is another clause in the contract into which we are about to enter, viz., that on all the plant and machinery that the Dominion Iron & Steel Co. will require to import into Canada for the ship plate mill they will pay duty, and that duty will afterwards be refunded. The government is making only two concessions: first, we are guaranteeing 250,000 tonnage for five years, and secondly, we are remitting the duty on the machinery and material the company will require to bring in for its mill. In order that the ships which the government is ordering shall not cost too much money, I am happy to be able to say that through the splendid support of the British and Canadian War Missions at Washington, and through the generosity of the U.S. Government, we have been able to buy 80,000 tons of steel plate in the U.S. on very favorable terms, at a price as low as the U.S. shipbuilders are paying. This amount will keep our plants operating during the balance of 1918 and during the whole of 1919, so that our supply of steel plate is assured until such a time as Canada is able to roll her own plate.

I was glad to hear Mr. Lemieux commend the government for embarking on this policy. I will not weary the house by emphasizing the necessity for ships, for we all know to our sorrow the great loss of tonnage that occurs daily, not only to the British Empire, but to all the allies and to neutral countries as well, through the operations of German submarines. It follows that the countries that are well supplied with ships after the war will progress more rapidly than the countries which are short of ships. The ships which are being built by the Imperial Munitions Board, and are being financed by Canada, will not be under the Dominion Government's control, but are being built for the Imperial authorities, to be owned and operated by them as they see fit. But the ships that Canada is building now, and the ships she will build in the future, will be absolutely owned and controlled by Canada and will be used in the most effective way for the prosecution of the war. We hope also to use these ships for carrying the products of our fields, mines and forests across the seas to the various countries with which I hope Canada will later be doing a large export trade. Without the ships, Canada would be in a very unfortunate position. Almost daily I am

receiving requests from various interests in this country for ships; the people are almost begging for them. We require ships for our coal trade, we require ships to carry farm products, and we shall require ships to work in conjunction with the government-owned transcontinental railways. No definite railway policy has been worked out, and I merely mention the railways in connection with the steamship services. Canada already owns the Canadian Government Railways and the Canadian Northern Ry., and there may come a time when she will want ships on the Great Lakes and on the Atlantic and Pacific oceans, to act as feeders for the national transcontinental railway system. I have no hesitation in saying that in my opinion this policy that Canada has embarked on with regard to the building of ships is a wise and safe one. Not only will the ships be under the government's control, to be operated by it as it sees fit, but if necessary they can be rented or sold, and there are many other things that we could do with them, so I consider our policy is a very safe one in the national interest.

Mr. Lemieux said something about neutral ships. The Canadian Government, of course, is confining its efforts entirely to ships of Canadian registry. We intend to keep our yards busy with Canadian registered ships only—ships for the Canadian Government. A large number of wooden ships have been built by the Imperial Munitions Board for the Imperial authorities, but it is not the intention of the Canadian Government to have any wooden ships built. I am not prepared to express any opinion for or against wooden ships, except that with the money available for shipbuilding in Canada at present it seemed to the government the wisest policy to invest that money in steel ships only. The wooden shipbuilding yards in different parts of Canada have many opportunities at present for building wooden ships. While they cannot build wooden ships for the Dominion Government, they have every opportunity of building wooden ships for private interests for Canadian registry, and some of the yards are now working on very large orders for wooden ships for allied and neutral countries.

Mr. Lemieux spoke, also, of the necessity of retaining the skilled and technical workers required for building ships in Canada. Everybody is agreed—in this House, the people of Canada and of the British Empire, and all our allies—as to the necessity for ships, ships, and more ships, and although the operation of the Military Service Act does not come under my jurisdiction, I can say that the representations that have been made, and which will be made in the future, to the proper tribunals for the exemption of these men, will be given every consideration, and care will be taken to safeguard the interests of this country and of the Empire by seeing that the necessary number of men are retained in the shipyards to carry out the Dominion Government's programme.

E. G. Power, M.P. for Quebec South, said that as the representative of a constituency which at one time was the centre of the wooden shipbuilding industry in Canada, and before giving his cordial approval to the government's plan of steel shipbuilding, he would like to be informed whether the Minister has made a full investigation into the possibilities of reviving the wooden shipbuilding industry, and whether or not experts had given it as their considered opinion that wooden ships could not be used to increase the world's



tonnage with the same good effect as steel ships.

The Minister said in reply:—The government and I, as the Minister charged with the responsibility of seeing that the government's shipbuilding programme is carried out, looked very carefully into that question, but the government's policy being only to keep the steel shipbuilding yards in Canada busy, our financial ability will not permit us to go beyond that. Mr. Power will agree that, as a business proposition, and as a national proposition, bearing in mind that these ships are being built not for today only, but for the future, it is a wiser policy for Canada to put her money into steel shipbuilding than to put it into wooden ships. I am not saying anything derogatory to wooden ships, but the speed of a wooden ship is very much less than that of a steel ship, her carrying capacity is less, and the wooden ship is debarred from the submarine zone, because her speed, being so slow, she presents a very much better target for submarine torpedoes. But the latter argument is not the one that caused the government to go in for steel shipbuilding. The other arguments which I have presented carried more weight.

The member for Queens and Shelburne, N.S., Mr. W. S. Fielding, said:—I think the Government should be congratulated upon giving its attention just now to steel shipbuilding, which of course does not necessarily imply that the government lacks appreciation of the importance of wooden shipbuilding. My own judgment is that we do not need any particular stimulus for wooden shipbuilding in our country. It is an art with which many of our people are quite familiar. I do not know whether there is a revival in the ancient city of Quebec of the great art of wooden shipbuilding, but in the Maritime Provinces there is a very large measure of activity all along our coast. In my own constituency several wooden ships are being built. I am afraid the conflict between iron and wood and steel was settled some years ago, when, in the age of progress through which we were passing, the fact had to be recognized that the wooden ship must give way to the iron ship, and the iron ship in turn must give way to the steel ship, and by and by we will return to those conditions, when the large wooden ships will hardly have much chance in competition with the large steel ships. There has been in the past, and I believe there will be in the future, quite a demand for wooden ships, and I believe the conditions that will exist at the close of the war, and for some years afterwards will be such that there will be large opportunity for the wooden shipbuilders of the country to engage in their enterprise. So that I feel that, in giving the preference to steel shipbuilding, as the Minister is doing, there is no danger of any injustice being done to the wooden shipbuilding industry. I believe that industry will flourish for some years to come without any particular aid from the government. Steel shipbuilding is, in a measure, a new industry here. It has been carried on in a small way, but owing to the very fact that the Minister has stated: that we had no plate mill in the country, we could not expect to engage in the enterprise in a very large way.

The Minister added: While at present I regret that there are no steel shipbuilding yards in the Maritime Provinces, and while our programme is limited to the amount of the expenditure we can afford to allocate for shipbuilding, I have been giving a lot of attention during the last few weeks, and so have my colleagues, to

the question of having a large steel shipbuilding industry located somewhere in the Maritime Provinces, so that steel ships may be made there, as well as in other parts of the Dominion.

In answer to a question by Mr. Lemieux as to whether there would not also be rolling mills at Montreal, the Minister said: There is no reason why rolling mills should be confined to any one particular province, but it is not an attractive business proposition at present. There are not many financiers, or industrial men, in this country who want to put \$5,000,000, or even \$3,000,000, into a plant that has absolutely no protection whatever. If any other group of financiers wishes to enter into the rolling of ships' plates, either in Montreal or in any other part of Canada, I will not say that the government will give them the same assistance that we have found it necessary to give the Dominion Iron & Steel Co.—I think members will agree that it was necessary to do that to get the first mill started—but if any other group of financiers wish to start into the rolling of ships' plates without any duty, the government will be very pleased indeed to see them do it.

Jos. Read, M.P. for Prince Edward Island, said: I had the pleasure of visiting British Columbia recently, and while there went through one of the shipyards that the Minister stated he has given a contract to, the Wallace Shipyards at North Vancouver. I saw there the most marvellous development of shipbuilding that can possibly be found in the world. I stood in that shipyard and saw the workmen moulding the plates for the building of ships. One of the most intricate pieces of work in connection with shipbuilding is the making of the bilge plates of a steel ship. Four men were handling that plate. Not a blow was being struck, not a bit of human muscle was being exercised, no brawn was being used except in simply moving the plate along to receive the pressure that was coming from the mountain that stood within view of the very men that were handling the plate. There they were, drawing energy from "white coal" which was generated from a mountain lake, and they were moulding that plate into that intricate shape, ready to put on the ship's bottom, without using a mallet, a chisel, or a maul. It was a marvellous thing, and it showed that the people of British Columbia, at any rate, have all the necessary elements to compete with anything in the world in the building of ships. I found that not only were they moulding plates by means of electrical energy, but they were cutting off their great beams with an instrument just like a pencil, following a line, cutting off great beams, 6 in. square, with a jet of electric flame, and the acetylene gas that is used in connection with it. All the riveting and that sort of thing is being done by the same power. There is no doubt in the world that we can build ships in Canada. We built them before. There was a time in my history, in the early sixties, I think, when Canada—little undeveloped Canada—stood second, or, at any rate, third, among the whole of the nations of the earth in point of tonnage. And, during those years the men who went down to the sea in ships from the Maritime Provinces and the Province of Quebec were second to no men in the world. They were first. Very few sailors amongst them, because they were not very long at the business, but they developed to such a marvellous extent into officers that one would think they were all precocious boys. I have seen young men, taken out of the green woods in

Prince Edward Island, in two years time become masters of square rigged ships in the foreign service; they were the greatest successes that any country ever produced. Anything that the Minister can do to build up a mercantile navy I am sure will be to the interest of Canada as a whole, as well as to the interest of those centres which have the good fortune to have the industry established amongst them.

Mr. Johnstone, M.P., asked the Minister if he was experiencing any difficulty in getting shipbuilders in Canada to accept contracts. A gentleman of prominence in marine circles had stated that shipbuilders were not accepting contracts from the Government as readily as they might on account of the exacting terms of the contracts.

The Minister replied:—It has not come to my notice that we have had any difficulty at all in placing orders for steel ships in Canada. Whenever the berths become vacant, we find the shipbuilders eager and anxious for business. It has not been brought to my notice that there is any condition such as Mr. Johnstone has mentioned.

**The Algoma Central Steamship Line.** Sault Ste. Marie, Ont., has purchased the s.s. William S. Mack, recently owned by the Lake Erie Transportation Co., Cleveland, Ohio, and has had her name changed to Home Smith. She was built at Lorain, Ohio, in 1901, on the channel system, with steel tank top where no ceilings are fitted, 3 watertight bulkheads, 2 non-watertight bulkheads, steel boiler house, and steam pump wells, and is equipped with electric light. The propelling machinery consists of triple expansion engine with cylinders 20, 33½ and 55 in. diam. by 40 in. stroke, 1,000 i.h.p. at 80 r.p.m., supplied with steam by 2 Scotch boilers 12 ft. 10 in. by 13 ft. at 175 lb. Her dimensions are: length 346 ft., breadth 48 ft., depth 28 ft.; tonnage, 3,720 gross, 2,785 register.

**Regulations re Outturns of Grain Cargoes.**—Up to the time of writing, Apr. 22, no announcement has been made as to the Grain Commission's regulations governing allowances for the regulation of overages and shortages in grain cargoes, for the current season. The regulations in force last year provided for a fixed contribution of one-sixth of a bushel per thousand by the loading elevator, and a quarter of a bushel per thousand by the vessel, and on this basis, the unloading elevator assumed the risk of shortage and took any surplus that might occur. Some protest was made by the elevators this year, but after a general consideration of the matter, it was decided to leave it with the Grain Commission, and regulations are being devised to meet the situation.

**U.S. Vessel Building on Great Lakes.** A Cleveland, Ohio, press dispatch states that the U.S. Emergency Fleet Corporation has ordered from the American Shipbuilding Co., 66 steamships for salt water service, for delivery in 1919, at an estimated cost of \$50,000,000; the vessels to be of full Welland Canal size, but 60 of them to have a somewhat greater depth of hold. The dimensions are given as follows: length 261 ft., breadth 45¼ ft., depth of six, 22.5 ft., and of the balance, 28 ft. 2 in.; tonnage, deadweight, six of 3,500 tons, sixty of 4,200 tons.

**Pilotage Tender for Halifax.**—The Marine Department is on the look out for a pilotage tender for Halifax Harbor, N.S., the purchase of which was recommended recently by the commission which investigated pilotage conditions there.



# Steam and Sailing Ships Under Construction Throughout Canada.

Following are particulars of shipbuilding reported in progress at Jan. 31. The figures given in each case represent the gross tonnage.

## Steamships, Atlantic Coast.

Canadian Vickers, Ltd., Montreal, 2 cargo steamers, 8,200, steel; 1 dredge, 2,360, steel; 7 trawlers, 1,750, steel; 15 drifters, 1,875, wood.

Davie Shipbuilding & Repairing Co., Levis, Que.—1 car ferry, 5,000, steel.

Dowling & Stoddart, Port Clyde, N.S.—1 gas boat, 27, wood.

Grant & Horne, St. John, N.B.—1 cargo steamer, 2,800, wood.

Joseph Matte, St. Methot, Que.—1 tug, 18, wood.

Marine Construction Co. of Canada, Ltd., St. John, N.B.—1 auxiliary schooner, 750, wood.

John McLean & Co., Halifax, N.S.—1 tug, 320, wood.

Nova Scotia Steel & Coal Co., New Glasgow, N.S.—1 cargo steamer, 3,000, steel.

Quebec Shipbuilding & Repairing Co., St. Laurent, Que.—2 cargo steamers, 2,600, wood.

Quinlan & Robertson, Quebec, Que.—4 cargo steamers, 6,400, wood.

Total, Atlantic coast—12 steel, 20,310 tons; 26 wood, 14,790 tons. Grand total, 38 steamships, 35,100 tons.

## Steamships, Great Lakes.

British-American Shipbuilding Co., Welland, Ont.—2 cargo steamers, 4,700, steel.

Canadian Allis-Chalmers, Ltd., Bridgeburg, Ont.—4 cargo steamers, 9,600, steel.

Collingwood Shipbuilding Co., Collingwood, Ont.—3 cargo steamers, 7,200, steel.

Great Lakes Dredging Co., Fort William, Ont.—1 cargo steamer, 1,700, wood.

Midland Shipbuilding Co., Midland, Ont.—3 cargo steamers, 6,000, wood.

Polson Iron Works, Ltd., Toronto—7 cargo steamers, 16,450, steel; 10 trawlers, 2,640, steel.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—6 cargo steamers, 12,091, steel; 6 trawlers, 1,530, steel.

Thor Iron Works, Ltd., Toronto, Ont.—1 cargo steamer, 2,347, steel; 2 trawlers, 540, steel.

Toronto Shipbuilding Co., Toronto—2 cargo steamers, 6,000, wood.

Total, Great Lakes—41 steel, 57,188 tons; 6 wood, 13,700 tons. Grand total, 47 steamships, 70,888 tons.

## Steamships, Pacific Coast.

Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.—4 cargo steamers, 6,800, wood.

J. Coughlan & Sons, Vancouver, B.C.—2 cargo steamers, 11,500, steel.

Foundation Co., Victoria, B.C.—3 cargo steamers, 6,300, wood.

William Lyall Shipbuilding Co., Vancouver, B.C.—4 cargo steamers, 6,800, wood.

New Westminster Construction Co., New Westminster, B.C.—4 cargo steamers, 6,800, wood.

Pacific Construction Co., Port Coquitlam, B.C.—2 cargo steamers, 5,000, wood.

Wallace Shipyards, Ltd., North Vancouver, B.C.—4 cargo steamers, 17,500, steel; 1 freight and passenger steamer, 5,500, steel.

Western Canada Shipyards, Ltd., Vancouver, B.C.—3 cargo steamers, 3,900, wood.

Total, Pacific coast—7 steel, 34,500 tons; 20 wood, 35,600 tons. Grand total, 27 steamships, 70,100 tons.

Wooden Sailing Schooners, Atlantic Coast  
Acadia Shipbuilding Co., Saulnierville, N.S.—One, 400 tons.

Allan & Fraser, Fraserville, N.S.—One, 350 tons.

Annapolis Shipping Co., Annapolis Royal, N.S.—Two, 900 tons.

Beazley Bros., Weymouth, N.S.—One, 400 tons.

Moise Belliveau, Church Point, N.S.—One, 450 tons.

T. K. Bentley, Advocate Harbor, N.S.—One, 511 tons.

Fidele Boudreau, Church Point, N.S.—One, 350 tons.

Hilaire Boudreau, Church Point, N.S.—One, 300 tons.

Bridgewater Shipbuilding Co., Bridgewater, N.S.—One, 400 tons.

Smith Canning, Port Greville, N.S.—One, 350 tons.

Chester Basin Shipbuilders, Ltd., Chester Basin, N.S.—One, 650 tons.

Clare Shipbuilding Co., Meteghan, N.S.—One, 400 tons.

G. M. Cochrane, Fox River, N.S.—One, 450 tons.

A. H. Comeau, Meteghan River, N.S.—One, 400 tons.

Comeauville Shipping Co., Comeauville, N.S.—One, 450 tons.

G. A. Cox, Shelburne, N.S.—One, 322 tons.

Dowling & Stoddart, Port Clyde, N.S.—One, 300 tons.

Eastern Shipbuilding Co., Ship Harbor, N.S.—One, 300 tons.

H. Elderkin & Co., Port Greville, N.S.—One, 750 tons.

Ernst Shipbuilding Co., Mahone Bay, N.S.—One, 350 tons.

Falmouth Shipbuilding & Transportation Co., Windsor, N.S.—One, 405 tons.

Fauquier & Porter, Hantsport, N.S.—Two, 850 tons.

Foley Bros., Hantsport, N.S.—Two.

Thos. German, Meteghan, N.S.—One, 350 tons.

Hankinson Shipping Co., Belliveau Cove, N.S.—Two, 750 tons.

D. Huntley, Scott's Bay, N.S.—One, 500 tons.

\* W. R. Huntley, Parrsboro, N.S.—Two, 650 tons.

J. W. Kirkpatrick, West Advocate, N.S.—One, 350 tons.

Lewis Shipbuilding Co., Sheet Harbor, N.S.—One, 675 tons.

B. N. Melanson, Gilbert's Cove, N.S.—One, 200 tons.

H. McAloney, Canning, N.S.—One, 350 tons.

Jos. McGill Shipping & Transportation Co., Shelburne, N.S.—Two, 395 tons.

W. C. McKay & Son, Shelburne, N.S.—One, 140 tons.

McKean & Rodding, Ltd., Dartmouth, N.S.—One, 375 tons.

McLean & McKay, Economy, N.S.—One, 350 tons.

Archibald McKenzie, River John, N.S.—One, 600 tons.

Chas. McLellan, River John, N.S.—One, 100 tons.

Chas. McNeil, New Glasgow, N.S.—Two, 800 tons.

W. A. Naugler, La Have, N.S.—One, 350 tons.

Noel Shipbuilding Co., Noel, N.S.—One, 425 tons.

Nova Scotia Shipbuilding Co., Liverpool, N.S.—Two, 875 tons.

O. O'Brien, Noel, N.S.—One, 325 tons.

Mortimer Parsons, Cheverie, N.S.—One, 425 tons.

J. N. Pugsley, Diligent River, N.S.—One, 500 tons.

J. N. Rafuse & Co., Conquerall Bank, N.S.—One, 350 tons; Salmon River, N.S., one, 325 tons.

S. Robichaud, Meteghan, N.S.—One, 400 tons.

St. Martin's Shipbuilding Co., St. Martin's, N.B.—One, 450 tons.

S. Salter, Parrsboro, N.S.—One, 200 tons.

Greene Scott, Minasville, N.S.—One, 73 tons.

Shelburne Shipbuilders, Ltd., Shelburne, N.S.—Two, 749 tons.

J. W. Smith, Hillsburn, N.S.—One, 479 tons.

W. K. Smith, Plympton, N.S.—One, 200 tons.

Smith & Rhuland, Lunenburg, N.S.—Two, 256 tons.

S. J. Foley, Fox River, N.S.—One, 425 tons.

Southern Salvage Co., Liverpool, N.S.—One, 185 tons.

B. L. Tucker, Bass River, N.S.—One, 350 tons.

F. K. Warren, Grosses Coques, N.S.—One, 350 tons.

Warren, Rice & Co., Weymouth, N.S.—One, 300 tons.

C. T. White & Son, Sussex, N.B.—Three, 1,360 tons.

Total, Atlantic coast, 72 schooners of 28,850 gross tons.

## Summary.

Steel steamships.	No.	Tons.
Atlantic Coast . . . . .	12	20,310
Great Lakes . . . . .	41	57,188
Pacific Coast . . . . .	7	34,000
	60	111,998

Wooden steamships.	No.	Tons.
Atlantic Coast . . . . .	20	14,790
Great Lakes . . . . .	6	13,750
Pacific Coast . . . . .	20	35,600
	52	64,140

Steel steamships . . . . .	60	111,998
Wooden steamships . . . . .	52	64,140
Wooden schooners . . . . .	72	28,850
	184	204,988

## Halifax Disaster Manslaughter Charges.

As mentioned in previous issues, in connection with the Halifax disaster in December last, A. Lemedec and F. Mackey, master and pilot respectively of the s.s. Mont Blanc, together with Commander F. Wyatt, R.N.R., Chief Examining Officer of the port, were arrested, charged with having caused the death of a number of persons. Capt. Lemedec and pilot Mackey were released subsequently on writs of habeas corpus, the former leaving the country, and further indictment of the latter was refused. The case against Commander Wyatt, who was suspended from his duties soon after the disaster, came before the criminal court, Apr. 17, on the specific charge of having caused the death of Wm. Hayes, pilot of the s.s. Imo, the jury returning a verdict of not guilty, his acquittal following. In charging the jury, Mr. Justice Russell stated that there was absolutely nothing, so far as the law was concerned, on which a verdict of guilty could be brought in.

**Prince Edward Island Car Ferry.**—A Charlottetown correspondent writes: The car ferry steamship Prince Edward Island has been in operation this winter on the Borden-Tormentine route and has given continuous service. She has not missed a trip in the severest winter known for a quarter of a century. She has been rigidly put to the test and has never failed.



## General Shipbuilding Notes Throughout Canada.

**The Anglo-Newfoundland Development Co.,** Botwood, Nfld., is reported to be building two 3 masted auxiliary powered schooners of 450 tons each, equipped with engines of 150 h.p. This company is one of the Harmsworth interests, and is mainly concerned with the manufacture of paper for the Harmsworth controlled newspapers in England, though a considerable portion of its make is being sent to the United States.

**British-American Shipbuilding & Engineering Co.,** Vancouver, B.C.—A press report stated early in April, that within a month, work would be commenced on eight shipways, provided the Dominion Government would undertake certain dredging along the Kitsilano Reserve foreshore. It is reported that the company has reached an agreement with the harbor commission regarding the land to be leased on the western end of the reserve, and that plans have been approved by the local authorities. These plans show 8 building slips, machine shops, blacksmith shop, mould lofts, etc. It is announced, as mentioned in our last issue, that the company is arranging to build 20 steamships of a composite type, but no indication is given as to whom they are intended for. S. Matheson is President. We are officially advised that the company has been granted an export permit to build 20 wooden cargo steamships for Norwegian registry.

**Canadian Car & Foundry Co.—J. M. Smith,** at one time connected with the Collingwood Shipbuilding Co., and latterly with Tidewater Shipbuilders, Ltd., Three Rivers, Que., has been appointed Superintendent of the Canadian Car & Foundry Co.'s shipbuilding department at Fort William. As previously stated in Canadian Railway and Marine World, the company has a contract for 12 mine sweepers, for the French Government, of which the following are the chief dimensions:—length over all 143 ft., length between perpendiculars 135 ft., breadth moulded 22½ ft., depth moulded to main deck 13¼ ft., depth moulded to quarter deck 14¼ ft., displacement loaded 630 tons, freeboard (Lloyd's) 15 ins.

The Canadian Car & Foundry Co.'s annual report, dated April 15, says:—"Some months ago we were asked to co-operate with the Manitowoc Shipbuilding Co., of Manitowoc, Wisconsin, in the manufacture of 12 mine sweepers for the French Government. After careful investigation by shipbuilding experts, your directors became convinced that at our Fort William works we possessed the necessary machinery and facilities for the fabrication of ship parts, as well as an excellent water frontage, and it was estimated that an assembling plant and launching facilities for the class of boat proposed could be built and installed for approximately \$200,000. Your directors entered into negotiations with the official representatives of the French Government, and were finally offered a contract for the 12 mine sweepers, completely equipped, at a satisfactory price; liberal terms of payment were agreed upon, and advance payments arranged to provide the necessary capital and inventory requirements, and the contract was accepted. It is believed that this initial order will yield a profit, after charging against earnings the entire cost of the additional installation. An agreement has been made with the Manitowoc Shipbuilding Co., whereby we secure its co-operation and supervision, and work

on the project has commenced. Shipbuilding in Canada has attractive possibilities, and the successful initiation of the shipbuilding industry at our plant at Fort William will be of considerable advantage, especially in the event of a later depression in car building work."

**Collingwood Shipbuilding Co.,** Collingwood, Ont.—The disagreements between the company and its employes have been adjusted. The board of conciliation appointed, viz., H. P. Hill, Ottawa, Chairman; Capt. J. B. Foote, Toronto, for the company, and F. Bancroft, Toronto, for the men, heard the complaints, and during the hearing, it was agreed that the parties concerned would settle the matters in dispute between themselves.

A press report from St. John, N.B., states that the Collingwood Shipbuilding Co. is interested in the establishment of a steel shipbuilding plant at Courtenay Bay, St. John. One of the company's officials states that nothing is known about this at Collingwood.

**J. Coughlan & Sons, Vancouver.**—A Vancouver press dispatch of April 21 said that the Dominion Government's refusal of permission to Vancouver steel shipbuilding yards to proceed with new contracts for vessels of a standard type of 8,800 tons each for allied nations, and the issuance of orders by the Imperial Munitions Board at Ottawa for making structural alterations in the vessels already nearing completion, might result in a halt in operations at the Coughlan ship yards. As previously stated in Canadian Railway and Marine World, J. Coughlan & Sons have orders from the Imperial Munitions Board for building 9 steel steamships of 8,800 tons each for the British Government, one of which has been launched, and they are not likely to have any vacant berths during this year, but expect to have some vacant early next year, when the Marine Department will be prepared to give them contracts for building steel steamships of 8,800 tons capacity, if satisfactory terms can be arranged. In regard to changes in the structural alterations of the vessels under order by the Imperial Munitions Board, we are officially informed that no material changes have been made from the original plans and specifications.

**Halifax, N.S.**—An unconfirmed report says that J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., Montreal, is interested in a project to establish a steel shipbuilding plant at Halifax and to take the floating dry dock from Montreal there.

**Wm. Lyall Shipbuilding Co.,** Vancouver, B.C.—It is stated that the company, in addition to the wooden steamships which it is building for the British Government, has commenced the first of six vessels which it intends building for its own account, and expects to have completed by September.

**T. H. Macdonald, Meteghan, N.S.,** launched the schooner Rebecca L. Macdonald recently, and she subsequently loaded cargo at St. John, N.B., for South Africa, after which she will sail to New York. She is 186 between perpendiculars, 36 ft. wide, with 16 ft. hold, and is said to be the largest vessel launched from a Bay of Fundy yard for several years. The masts are 91 ft. long by 22 in. diam., of Oregon pine, and the topmasts are 50 ft. long, of native spruce. She is equipped with electric light, and has a 12 h.p. upright gasoline engine, for handling the sails, pumps, etc.

**Jos. McGill Shipbuilding & Transportation Co., Ltd.,** Shelburne, N.S., launched a schooner of 150 tons at the end of March, which was named James and Stanley. She is owned by Samuel Harris, Ltd., of Newfoundland.

The keel is reported to have been laid for a three masted schooner of about 200 tons.

**Nova Scotia Shipbuilding & Transportation Co.,** Liverpool, N.S.—The second of the two schooners under construction by this company recently, was launched at the end of March. She was built for Peter Yee Wing & Co., Sydney, Australia. Her dimensions are: keel 118 ft., beam 33 ft., hold 12 ft.

**The Port Hope, Ont.,** Town Council and Board of Trade, have been discussing the possibility of getting a steel shipbuilding plant established there.

**Prince Rupert, B.C.**—A Vancouver syndicate is said to be negotiating for a lease of the Grand Trunk Pacific Railway floating drydock.

**J. N. Rafuse & Sons, Conquerall Bank, N.S.**—Work is reported to have been commenced on the building of a second schooner in W. J. Foley's yard at Salmon River, N.S., similar to the schooner Industrial, the launching of which was mentioned in our March issue. The dimensions of that vessel are: length 113 ft., breadth 30 ft., depth 11½ ft.

**Standard Shipbuilding Co., Ltd.,** Vancouver, B.C.—Reports from Vancouver, as mentioned in our last issue, credit this company with having concluded contracts with the British Ministry of Shipping for 10 composite steamships, and that a representative of the company was in London, Eng., with the plans for the final approval of the authorities there. No confirmation of this can be obtained. Up to the present all shipbuilding orders placed in the Dominion on behalf of the British Government have been handled by the Imperial Munitions Board, and the board has not placed such an order, nor had any negotiations with that end in view.

**St. John, N.B.**—A proposition is said to have been made to the New Brunswick Government, by J. B. Craven, New York, and T. A. Duff, Toronto, for the establishment of a steel shipbuilding plant at Courtenay Bay, St. John. It is stated that a company is prepared to go ahead with the work on a large scale, immediately, if adequate support is given by the provincial government.

**Taylor Engineering Co.,** Vancouver, B.C., is reported to have been awarded a contract for the design and construction of a 4,500 ton floating dry dock. It is not stated where the dock will be located on completion. W. T. Donnelly, New York, who designed the dock and harbor works at Prince Rupert, B.C., is stated to have been engaged for the designing of the dock, the dimensions of which are mentioned as follows: length over all 352 ft., length of wings 300 ft., width over all 100 ft., width between wings 80 ft. It is said it will be designed to take a draft of 20 ft., 4 ft. keel blocks, and will be arranged so that its lifting power can be increased to 7,500 tons, when the length of the dock will be increased to 445 ft.

We have been advised that the company is building a wooden cargo steamship for coast service, with 300 tons deadweight capacity. She will be equipped with engine of 160 h.p., and will be built to class



A1 at Lloyd's. The cost will be about \$90,000. The vessel is intended for operation between Seattle, Wash., and northern B.C. ports. Several small boats are under construction at the company's plant, and the building of two reinforced concrete seagoing barges, with capacity of about 1,200 tons each, is under construction.

P. A. Therriault, Belliveau Cove, N.S., launched the schooner Charles Theriault, of 339 tons, early in April. Arrangements have been completed for laying the keel of a similar vessel, and the work is proceeding.

### Steamships Under Construction for British Government.

The s.s. Alaska, built by J. Coughlan & Sons, Vancouver, B.C., was originally intended for Norwegian registry, but while on the ways, was taken over for the British Government. The launch took place Jan. 19, and she is expected to be ready for sea by the end of May. The officers have arrived in Vancouver to take over the vessel. She is to be operated by Furness, Withy & Co., on behalf of the British Government.

Edgard Fitzgerald, C.B.E., Assistant to Chairman, Imperial Munitions Board, left Ottawa for Vancouver and Victoria, B.C., early in April and is expected to return early in May.

Foundation Co., Victoria, B.C., launched its second wooden hull for the Imperial Munitions Board, Apr. 11, the name adopted being War Massett. This hull was ready for launching in March, but some delay was necessary owing to the non-arrival of fittings.

Wm. Lyall Shipbuilding Co., Vancouver, B.C.—The second of the wooden steamship hulls built by this company for the British Government was launched Apr. 10, and named War Caribou. She was at once taken to the Ogden Point assembly plant to have her machinery installed. The remaining four hulls, of this order, are reported to be well advanced. At least one of the four was expected to be ready for launching before the end of April, and another one early in May. Of the last two of the order, one is planked and caulking is proceeding, and the other is more than 25% planked.

New Westminster Construction & Engineering Co., New Westminster, B.C.—It is announced that the four vessels under construction for the Imperial Munitions Board at the company's Poplar Island yard, will be completed early in September. Local representations are being made to the board, in the hope of having the machinery installed at New Westminster, instead of having the hulls towed to Ogden Point, Victoria, where the board has equipped a large assembly plant. The first of these hulls was launched Apr. 11, and named War Comox.

Pacific Construction Co., Port Coquitlam, B.C., launched a wooden hull for the Imperial Munitions Board, Apr. 13, when she was named War Tyee. This made the fourth launch along the B.C. coast in one week.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—The s.s. War Isis was launched at these yards, Apr. 3, for the British Government. This is one of 6 steel steamships of 3,400 tons d.w. capacity, ordered by the Imperial Munitions Board from the company. Keel plates were immediately laid in the vacant berth

for another similar vessel of full Welland Canal size.

Western Canada Shipyards, Ltd., Vancouver, B.C.—The wooden hull of the s.s. War Selkirk, the launching of which was mentioned in our last issue, was taken to the Ogden Point assembly plant early in April, for the installation of her machinery.

Launchings of Steamships.—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to April 15, giving in each case the date of the launching, the name of the steamship, the name of the builder and the deadweight tonnage:—

Steel Steamships.			Tonnage.
May 18, 1917	War Dog—Wallace Shipyards Ltd., North Vancouver, B.C.		4,500
July 9, 1917	War Wasp—Nova Scotia Steel & Coal Co., New Glasgow, N.S.		1,800
Aug. 19, 1917	War Fish—Port Arthur Shipbuilding Co., Port Arthur, Ont.		4,300
Nov. 3, 1917	War Dance—Port Arthur Shipbuilding Co., Port Arthur, Ont.		3,400
Mar. 16, 1918	War Camp—J. Coughlan & Sons, Vancouver, B.C.		8,800
Mar. 23, 1918	War Power—Wallace Shipyards, Ltd., North Vancouver, B.C.		4,600
Apr. 3, 1918	War Isis—Port Arthur Shipbuilding Co., Port Arthur, Ont.		3,400
			30,800
Wooden Steamships.			
Dec. 19, 1917	War Songhee—Foundation Co., Victoria, B.C.		3,800
Jan. 4, 1918	War Nootka—Western Canada Shipyards, Vancouver, B.C.		3,080
Jan. 24, 1918	War Yukon—Cameron-Genoa Mills, Ltd., Victoria, B.C.		3,080
Feb. 16, 1918	War Puget—Wm. Lyall Shipbuilding Co., Vancouver, B.C.		3,080
Mar. 6, 1918	War Selkirk—Western Canada Shipyards, Vancouver, B.C.		3,080
Apr. 10, 1918	War Caribou—Wm. Lyall Shipbuilding Co., Vancouver, B.C.		3,080
Apr. 11, 1918	War Comox—New Westminster Construction & Engineering Co., New Westminster, B.C.		3,080
Apr. 11, 1918	War Massett—Foundation Co., Victoria, B.C.		3,080
Apr. 13, 1918	War Tyee—Pacific Construction Co., Coquitlam, B.C.		3,080
			27,720

Total tonnage of 16 steel and wooden steamships launched, 58,520.

"News" That is Not News.—A periodical published in Montreal, which modestly asserts that it has "definitely established itself as the representative of the shipbuilding industry in this country," had the following in its April issue:—

"Vancouver, B.C.—The Standard Shipbuilding Co. has just secured contracts from the Imperial Munitions Board for 10 composite steamers. A site is now being prepared for the plant at Ruskin, where the Stave River joins the Fraser, and at least half a dozen keels are expected to be laid this month. The company has a location at Ruskin, with more than 2,000 ft. of frontage on the river, and has a saw-mill already in operation. The ships to be built under the present contract will be 281 ft. long over all, with a dead weight capacity of 3,500 tons and a speed of 10 knots. They will have reinforced steel keelsons and knees, instead of the natural wood knees of Douglas fir. The company controls 150,000,000 ft. of this timber close to the plant."

Canadian Railway and Marine World had no advice of any such contracts having been let by the Imperial Munitions Board and felt convinced they had not been; but so that there might be no doubt about the matter, we communicated with the board and were advised on April 16 that no contracts had been given by the board to the Standard Shipbuilding Co. Canadian Railway and Marine World's information from month to month as to orders placed for shipbuilding is complete, official and reliable, and is not made up of unverified press dispatches or reports.

### Ice Conditions on the Great Lakes.

The following final bulletin regarding ice conditions on the Great Lakes, was issued by the U.S. Weather Bureau, Apr. 23:—

In Lake Superior the ice fields at the extreme west end moved out Apr. 22, and the Duluth entry is free of ice. A few fields are reported over the central portion, but they offer no serious obstacle to navigation. At Whitefish Point fields in the lake are moving in and out with the winds, and on Apr. 22 were moving in and withdrawing on the short west of the point. The bay is partly opened, and it is not anticipated there will be much difficulty for the two steamers off Whitefish Point in making the passage.

St. Marys River is open, and a tug made the round trip to Detour.

In Green Bay the ice has moved out. No ice is reported to Lake Michigan, except near Northport and around Beaver Island. The straits are now open and no ice is reported.

In Lake Huron the fields are confined to the southern portion. From Harbor Beach to Port Huron the fields are extensive, but are moving with the wind. The ice is heavy but honeycombing rapidly.

St. Clair River is blockaded from just below Port Huron to Lake St. Clair, and ice is reported packed so that it reaches the bottom of the river in places.

In Lake Erie ice fields are confined to the south shore from Ashtabula to near Dunkirk, but the ice is broken and soft. No ice is reported near Buffalo.

In Lake Ontario fields are reported from off Rochester to east of Oswego, but they are breaking up and will offer no great resistance to navigation.

### Shipbuilding Wages on the Pacific Coast.

According to a press dispatch from Vancouver, B.C., the commission appointed to go into the question of wages in the shipbuilding trade at the Pacific coast, has reported that the men are entitled to an increase of 10% dating from Feb. 1. The commission consisted of Mr. Justice Murphy, Chairman; J. H. Tonkin, representing employers, and G. J. Kelly, the men. It is stated that minority reports have also been sent in by the two last mentioned.

The report, it is said, recommends that 10% increases be granted, provided the men are willing to work 48 hours a week on straight time, excepting during June, July and August, and that they accept certain regulations governing the classes of labor. In regard to wages paid men working on steel steamships for the Imperial Munitions Board, the statement is made that the men can appeal to the board, which would be morally obliged to revise the wage schedule in accordance with that which the commission decides must be put in force in the wooden shipyards in the province, and to see that the firms concerned did not suffer financially.

It is also said that it is recommended that laborers shall be paid \$3.85 for an 8 hour day, excepting during June, July and August; that the demand for 10% on night shifts cannot be allowed, and that the men must do a full day's work for a full day's pay.

Several vessels arrived at Sault Ste. Marie, Apr. 23, upbound light, but were compelled to remain there on account of heavy gales and snow.



# Timber Derrick Gantry Crane for Ship Erection.

Present time high speed ship construction calls for erection cranes of special design. One form of these, which has been doing successful work, is the timber derrick gantry used at one of the prominent wooden ship plants. This crane is particularly worth note, in spite of its simplicity, because it was so worked out as to permit of rapid construction from standard materials that could be procured readily.

The high speed shipyards all have a number of shipways side by side, on which the ships are erected. Commonly, ways are built by driving wood or concrete piling into the ground, and capping and planking the top of the piling, to make a platform sloping toward the bay

frame may weigh as much as 10 tons. The crane shown has a safe margin over this maximum.

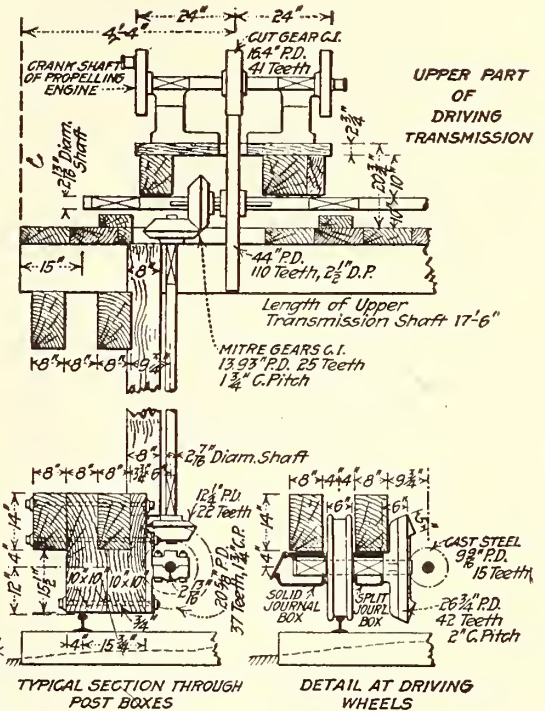
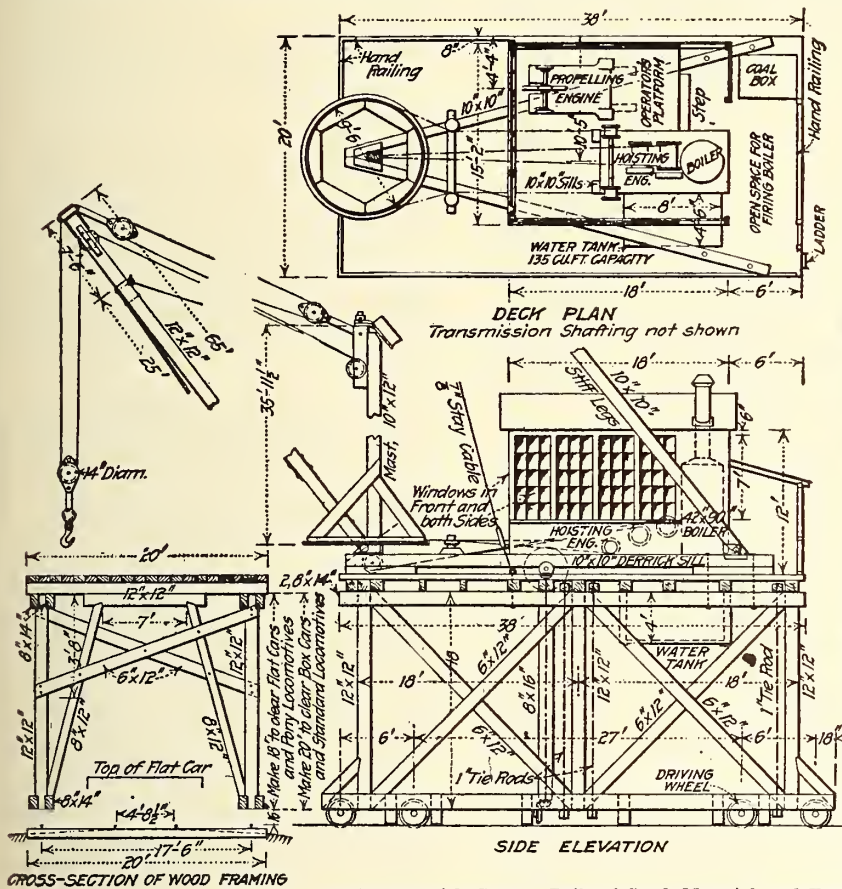
While the derrick gantry is not a new type, its adaptation to shipbuilding is a novelty. Under the old method of ship construction, with housed-in ways, there was provided a row of high columns between the ways, on which bridge cranes traveled back and forth over the ship, handling material to its place. The derrick gantry as used here is an excellent type of machine where the climatic conditions permit much work in the open. No high buildings are required, and the space between ways is kept clear at all times for handling bulky material. A railway track may be built between the ways, the

Wheels, gears, shafting .....	7,200 lb.
Bolts, tie-rods, nuts .....	1,600 lb.
Woodwork (except derrick and water tank) .....	57,050 lb.
Water tank, half filled .....	5,392 lb.

Total .....

113,742 lb.

The bracing of the gantry was designed with regard to all the various conditions of working of the crane. The heavy plank floor, not only provides a foundation for the machinery, but acts as horizontal bracing to take up the twisting strains which exist when the load is swung from side to side, and distributes them to the entire supporting structure of the gantry. The diagonal cross-bracing must be heavy enough so that when the crane load is applied at one end of the structure the



Ten-Ton Derrick Gantry, Built of Stock Material, and Equipment for Ship Erection.

on which the shell of the ship is built, stern toward the water, and from which it is launched. The ways may have a slope of 3/8 in. to 1 in. per foot; some shipbuilders prefer more slope than others. The spacing of adjacent ways set in the centre is fixed to suit the size of ships to be constructed. At the shipyard referred to the spacing ranges from 77 to 95 ft. This leaves a narrow space between the ships that are being erected, that is not adequate for storing and handling the material that is to go into the ship. It is the duty of the gantry crane to pick up this material from a point back of the ways, and carry it down between the ways to a proper location, then swing the material around to one side and over the ship.

In the new type of wooden ships brought into prominence by the war the chief assembling item is the crossframe, which is built up of a number of pieces of wood, each sawed to shape, pinned together by treenails. One assembled cross-

crane saddling it. Finally, the crane is one that can be built quickly and is of minimum cost.

The selection of wood as material for the main part of the cranes was dictated primarily by the desire for quick construction. In addition there was a gain in stability against overturning, as compared with steel. Wood is looked upon as being a light material, but when cost is taken into consideration the argument is in favor of wood. The wood in this crane costs 1 1/2 c. a lb., framed in place.

The greatest load which the gantry crane will lift, when the boom is swung at right angles to the track, and the crane hook is 40 ft. from the centre of the mast, is a little over 14 tons. Its working capacity, fixed at 10 tons, leaves a margin of about 4 tons. The approximate total weight of the entire gantry crane is as follows:—

Operator's house .....	8,500 lb.
Stiffleg derrick, complete .....	16,600 lb.
Hoisting engine .....	14,000 lb.
Propelling engine .....	3,400 lb.

overturning effect will be transmitted to the whole length of the gantry and utilize the weight of the hoisting engine to prevent the gantry from tipping over.

The strains which develop in the stifflegs of the derrick are much greater when the stifflegs are set at an acute angle than when set at 90°. As designed they are adequate for the service required. They are supplemented, however, by two stay cables fitted with turnbuckles, which pass from the masthead to the side of the platform at about mid-length.

The water tank, placed under the deck and to one side, is of such size and distance from the centre that it just counterbalances the propelling engine. The effect is that the gantry has exactly the same resistance to overturning to right or left, and therefore has equal lifting capacity and equal safety.

Steam power was decided on for several reasons. Steam is reliable, is independent of live wires between shipways, and is elastic in starting and stopping



heavy loads, with minimum shock to the transmission machinery; and, what is more important than anything else, the necessary equipment could be purchased in the shortest possible time.

The main hoisting engine is a 7½ x 10 in. reversing type, with three shafts. One drum handles the load line, another the boom falls, and a pair of drums on the forward shaft swing the boom. The propelling engine, which drives the crane up and down between the ways, is 7 x 10 in. 2-cylinder reversing, the crankshaft being geared direct to the upper transmission shafting. The arrangement of the engines is such that the operator can reach any lever from one position, and all machinery is in view and readily accessible.

The propelling transmission system consists of a top horizontal shaft, 2 vertical shafts and 2 lower longitudinal shafts, with the necessary bevel gears, journal

boxes, etc., to make a complete working unit. Four of the 8 wheels are driven. At 200 r.p.m. engine speed the gantry travels 100 ft. a min. The accompanying detail sketches show some of the most important items in the transmission. The transmission shafting is fastened to the frame timbers in a particularly simple manner. Rigid boxes are used throughout. Great care was taken in construction to align the shafting perfectly.

This type of gantry crane is not limited to the construction of wooden ships. It can be used equally well for steel ship work. Other arrangements of crane are possible. Similar machines have been built with two derricks, one serving one ship, and the other serving the opposite. The one shown herewith probably represents the maximum combination of simplicity, universal adaptability, low cost and quick construction.—M. J. Welch, San Francisco, in Engineering News-Record.

## Coast, Lake and River Officers for 1918.

The following appointments made by navigation companies engaged in the navigation of Canadian waters, for their various steamships and tugs, have been reported to Canadian Railway and Marine World, in addition to those given in the April issue. The first column shows the names of the vessels, the second, those of the captains, and the third, those of the chief engineers.

BASSETT STEAMSHIP CO., TORONTO		
Mariska	J. N. Foote	John Osburn
BRITISH YUKON NAVIGATION CO., YUKON		
Canadian	J. P. Douglas	P. Bourne
Casca	J. O. Williams	R. C. Haws
Dawson	C. Bloomquist	J. R. Young
Scotia	J. McDonald	V. Sullivan
Selkirk	G. H. McMaster	W. Vey
Tutshi	I. G. Roberts	J. Lauderdale
White Horse	W. Turnbull	P. Larsen
BULLER FREIGHTING AND TOWING CO., VICTORIA, B.C.		
Grainger	W. B. McCartney	H. Soper
CANADA STEAMSHIP LINES LTD., MONTREAL		
Aetha		
America		
Belleville		
Bickerdike	T. H. Johnston	John Kennedy
Brockville		D. S. LaRue
Cadillac	W. Beatty	J. M. Kettles
Calgarian	W. H. Montgomery	A. L. Black
Cayuga	C. J. Smith	W. Taylor
Chicora		
Chippewa	W. Malcolm	J. Henry
City of Hamilton	O. Patenaude	W. Dungan
City of Ottawa	J. L. Baxter	Jos. Aston
Corona	B. A. Bongard	Joe Kennedy
E. B. Osler	C. E. Robinson	W. Robertson
Emperour	D. W. Burke	G. N. Smith
Farfax	M. Hefferman	F. Patterson
Haddington	R. J. Wilson	C. Leriche
Hamiltonian	N. McKay	A. E. Kennedy
Home Rule	R. D. Simpson	
Ionic	O. Wing	A. E. Crosswaite
J. H. G. Hagarty	G. W. Pearson	C. Robertson
J. R. Binning	G. Irwin	
Kingston	A. E. Stinson	G. W. Macdonald
Longueuil		H. Noe
Louis Phillippe	H. Mandeville	A. Chayer
Macassa	G. J. Corson	E. A. Prince
Magnolia		
Martian	R. McIntyre	R. R. Foote
Midland King	P. McKay	Jas. McGregor
Midland Prince	A. B. McIntyre	J. A. Pickard
Modjeska	J. Henderson	A. McLaren
Montreal	F. X. LaFrance	N. Beaudoin
Murray Bay		
New Island Wanderer		
Pandora		
Pierrepont		
Quebec		
Ramona		
Rapids King		
Rapids Prince		
Rapids Queen		
St. Irene		
St. Lawrence		
Saguenay		
Sarnian	J. Simard	G. Gagnon
Seguin	R. Pyette	I. J. Roynton
Sir Trevor Dawson	W. Brian	J. M. McLaren
Stadacona	H. Hinsley	W. W. Norcross
Syracuse	G. H. Page	W. L. Shay
Tadousac		
Thousand Islander		
Three Rivers	A. Mondron	C. Gendron
Toronto	J. H. Hudson	J. E. Readman

Turbina		
Varuna		
Water Lily	John Hudgin	
Wyoming	T. B. Greenway	G. Schroder
W. D. Matthews	N. McGlennon	W. Reid
W. Grant Morden	Neil Campbell	R. Chalmers
W. M. Egan	N. Hudgin	C. Lavallee
CANADIAN FISHING CO., VANCOUVER, B.C.		
Canada	C. Prince	C. Farston
Carlotta G. Cox	L. Anderson	D. Mooney
Celestial Empire	D. Barry	D. Todd
Flamingo	S. Salmeson	W. Tribblecoq
Imbricaria	L. Taylor	T. Yielding
Kingsway	A. Freeman	T. Donaldson
Pescamba	H. R. Whitman	R. Duke
Tartoo	G. Skinner	C. Newbury
Zaira	G. Russell	
GREAT LAKES TRANSPORTATION CO., MIDLAND, ONT.		
America	A. Mouck	C. Munroe
Brazil	A. R. McLeod	C. D. Adamson
G. A. Richardson	J. T. McCarthy	A. Whitehead
Glenfinnan	W. A. Linton	J. Silverthorn
Glenisla	Jas. Tindall	W. McWilliams
Glenlyon	A. A. Hudson	D. Sinclair
Glenorchy	F. Burke	G. Price
Gleneshee	W. A. Lavigne	F. Goodwin
Majoi	S. Corson	P. Eagles
LA HAVRE STEAMSHIP CO., WEST LA HAVRE, N.S.		
Tussle	G. D. Pritz	F. Gray
MONTREAL TRANSPORTATION CO., MONTREAL		
Advance	J. V. Morris	G. W. Clark
Alert	F. C. Mahaffey	W. Wright
Arabian	A. Hogue	D. S. Crawford
Atikokan	W. J. Brown	J. H. Loudon
D. G. Thomson	N. Legault	N. J. Sherman
Escort	W. Wright	S. McGrath
Glenmount	Jas. Reoch	J. B. Lappen
Glide	H. Desgrosseillier	T. Brabant
H. F. Bronson		C. A. Stillson
India	J. A. Lepine	J. Lamoreaux
Joyland	H. A. Peterson	L. E. Spencer
Mary	W. J. McKenna	P. J. McKenna
Mary P. Hall	T. Lepine	H. Paus
McVittie	J. A. Ferguson	W. C. Spencer
Oatland	T. S. Patterson	S. Murray
Paipoonge	P. McIntyre	F. Moyle
Simla	C. E. Coons	D. S. Simons
Westerian	E. Smith	A. Chalmers
Westmount	J. F. Davis	F. T. Norris
Windsor	John Doyle	A. Dunn
NIAGARA FERRY AND TRANSPORTATION CO., BUFFALO, N.Y.		
Franklin	M. Lutz	E. Chapin
O. Bedell	W. Fontaine	C. Beach
NORTHERN TRADING CO., EDMONTON, ALTA.		
Northerland Trader	John Matheson	L. Connihear
Northeast Echo	G. B. Naylor	
NORTH VANCOUVER FERRY CO., NORTH VANCOUVER, B.C.		
North Vancouver No. 1	W. Fatke	G. R. Priestman
North Vancouver No. 2	R. R. Spicer	D. Becker
North Vancouver No. 3	J. W. Spracklin	I. H. Kendall
OSWEGO NAVIGATION CO., MONTREAL		
Avon	J. Gallagher	O. H. Little
Nicaragna	A. McDonald	S. Fenson
TERMINAL STEAM NAVIGATION CO., VANCOUVER, B.C.		
Ballena	J. A. Cates	A. Pirie
Bowena	F. W. Gilbert	Jas. Adams
Britannia	J. W. Cates	A. Coole
UNION STEAMSHIP CO. OF BRITISH COLUMBIA, VANCOUVER, B.C.		
Camosun	J. A. Browne	A. Beattie
Cassiar	R. Wilson	P. J. V. Farina
Chasina	N. Gray	W. A. Morris
Chicamus	G. Gaisford	J. Wilson
Chelohsin	J. F. Edwards	G. Foster
Chilco	J. Lawrey	A. T. Roy
Coquitlam	C. B. Smith	R. Maitland
Cowichan	G. Whelan	P. Thomas
Venture	J. E. Noel	C. Arthur

WALKERVILLE AND DETROIT FERRY CO., WALKERVILLE, ONT.		
Ariel	W. Carr	J. Marcotte
Essex	J. E. Rathbun	P. McLaren
WEST VANCOUVER MUNICIPAL FERRIES, VANCOUVER, B.C.		
Doncella	J. Hanna	G. Ellis
Sonrisa	D. Linn	R. Pyne
West Vancouver No. 5	J. Watson	H. L. Thompson
WINDSOR AND PELEE ISLAND STEAMSHIP CO., PELEE ISLAND, ONT.		
Pelee	J. N. Sheats	J. R. Ferguson

**Water Supply on Great Lakes Vessels.** With regard to the U.S. order for the equipment of vessels operating on the Great Lakes, with the means of purifying water for drinking purposes, which went into effect Jan. 1, 1917, and which applied to vessels of Dominion register calling at U.S. ports, no special regulations have been devised for Canadian vessels at present. On Canadian representations, the order, so far as Canadian vessels were concerned, was deferred until Jan. 1, 1918, on the understanding that from that date such vessels would conform to the U.S. requirements, to carry the necessary equipment, or to prove that water was taken from an approved source. The requirements are being complied with, the Marine Department having arranged for the certification of water supplies at Canadian lake ports, and forms for this purpose are obtainable at all customs houses. The local medical health officer then certifies as to the character of water taken on board. In most of the ports, direct connection can be made with local hydrants and the water taken aboard direct.

**Nova Scotia Shipbuilding.**—Under an act passed by the Nova Scotia Legislature in 1917, a commission consisting of D. Macgillivray, Halifax, Chairman; C. F. McIsaac, K.C., Antigonish; D. E. North, Hantsport; A. Mackenzie, River John; F. L. Kelly, North Sydney, and Murray Macneil, Halifax, Secretary, was appointed to investigate the province's facilities for vessel building, and to make suggestions for the carrying out of a general shipbuilding policy. The commission has presented its report, which was submitted to the legislature recently. After dealing with the situation in the province, the commission arrived at the conclusion that the encouragement of the steel shipbuilding industry, and the measures to be taken for its development and growth, is a matter primarily and essentially for the Dominion Government and not for provincial action. The Dominion Government's general policy on shipbuilding, as outlined by the Minister of Marine in the House of Commons recently, will be found on another page in this issue.

**Traffic Regulation at Sault Ste. Marie Canals.**—The Dominion Marine Association is considering a suggestion made by the Lake Carriers' Association, that a patrol boat be provided in the St. Marys River to govern downbound vessels and to direct them to certain locks. It is suggested that the boat be maintained jointly by the two associations and that all owners agree to submit their vessels to the patrol's control.

**The Imo-Mont Blanc Collision.**—Judgment was delivered in the Admiralty Court at Halifax, N.S., recently, in the actions between the owners of the steamships Imo and Mont Blanc, in connection with the Halifax explosion in Dec., 1917, each party suing the other for \$2,000,000. It was decided that the Mont Blanc was solely to blame for the collision, and that the damage would be assessed in the usual manner.



### Canal Estimates for 1918-1919.

The Railways and Canals Department's estimates for the year ending Mar. 31, 1919, submitted to the House of Commons recently, contain, among others, the following items, chargeable to capital:—

Welland Ship Canal, construction ..	\$ 1,860,000.00
Rideau Canal, towards construction of bridge at Pretoria Ave., Ottawa....	8,000.00
Trent Canal, construction .....	500,000.00

The following items are chargeable to income:—

Chambly Canal, renewing, in concrete, top of wharf, St. Johns....	\$9,200.00
Carillon and Grenville Canal, protection walls, Lake St. Francis .....	2,000.00
Rebuilding lower entrance pier ...	9,740.00
Lachine Canal, dredging .....	15,000.00
Ontario St. Lawrence Canal, improvements .....	43,000.00
St. Peter's Canal, improvements .....	4,000.00
Trent Canal, improvements .....	57,000.00
Welland Canal, heavy repairs .....	35,000.00

The following item its chargeable to collection of revenue:—

Compassionate allowance to widow of R. Wiggins, who was accidentally electrocuted while in discharge of his duties as bridgeman, on the Bascule bridge, over Lachine Canal, July 16, 1917 .....	2,000.00
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### Atlantic and Pacific Ocean Marine.

The s.s. City of Wilmington, bound from a southern port for France, was reported to have been destroyed by fire off Sable Island, N.S., Apr. 15. All the crew were reported to have been taken off by a Norwegian steamship, in response to wireless signals from the burning vessel.

The British s.s. Curaca, which sank near Dartmouth, N.S., after being severely damaged in the Halifax explosion last December, has been refloated. The work was carried out by Capt. Reid of Sarnia, Ont., and J. P. Porter, of Halifax. The vessel was at pier 8 prior to the explosion, of which it felt the full effect, 44 of her crew being killed.

The C.P.R. steamships Empress of Asia and Empress of Russia, operating on the Pacific Ocean, have been requisitioned by the Dominion Government, and have been placed at the British Government's disposal, and all advertised sailings have been cancelled. These vessels were requisitioned by the British Government on the outbreak of war in 1914, and after considerable service in transporting troops, etc., they were released in 1916. At that time they were on the register of the United Kingdom, but within the last few months they have been transferred to the Canadian register, with Vancouver, B.C., as their home port.

### Maritime Provinces and Newfoundland.

It is reported that the Dominion Government s.s. Aranmore is to run between Yarmouth and Boston, owing to the Eastern Steamship Corporation's s.s. Governor Cobb having been requisitioned by the U.S. Government.

The Island Tug. Co., Charlottetown, P. E.I., is negotiating for the sale of its business and vessels, and does not anticipate operating this year. It owns the s.s. Harland, built at Shelburne, N.S., in 1908, screw driven by engine of 33 n.h.p., and of the following dimensions: length 113 ft., breadth 27 ft., depth 6.7 ft.; tonnage, 352 gross, 217 register; and the steam tugs Fred M. Batt, and Islander.

The s.s. Acadien, formerly Senlac, which was lost during a gale, about Feb. 20, and which was reported to have been

towed to a Newfoundland port, which however was not correct, was located early in April, about five miles east of Flat Island, Placentia Bay, Nfld. Both anchors were out and her stern was under water, while the stern was well out of the water. Apparently she is not broken up, and divers are to be sent to inspect her with a view to salvage. She was sold recently by C. Brister & Son, to French owners, and was on her way to St. Pierre, Miquelon, when overwhelmed by heavy seas. It is stated that some of the crew, including the engineers, left the vessel in one of the boats and were picked up by a Newfoundland vessel, the captain and the remainder of the crew staying with the vessel, and losing their lives. It is also stated that the vessel must have drifted a considerable distance after the portion of the crew left her, and that if there had been anyone on board capable of running and repairing the engines, she might have been saved.

### Province of Quebec Marine.

The Lachine Canal was unwatered Apr. 23, and navigation was resumed through to Montreal, Apr. 29.

The first vessel to enter Quebec harbor this season was the schooner Florida, which sailed in from Ile aux Coudres, Apr. 4.

The Quebec & Levis Ferry Co. will, it is reported, probably remove its s.s. North from the service between Quebec and points along the north side of the Isle of Orleans, this year, as it is stated that the Dominion Government will not continue the subsidy for carrying mails there.

The Gaspé & Baie des Chaleurs Steamship Co., which has operated the steamships Gaspésien and Percésien on the lower St. Lawrence for some years, will not run any steamships this year, its vessels having gone into other service overseas. The s.s. Percésien was sunk near England in February.

The Marine Department received tenders, Apr. 29, for the purchase and removal of the s.s. Montmagny, now lying sunk near Crane Island in the St. Lawrence River. The tenderer must agree to commence the work of removal immediately on the acceptance of his tender, and must continue same until the removal is completed to the Department's satisfaction.

The Minister of Marine stated in the House of Commons, Apr. 18, that since Nov. 1, 1916, the Quebec Harbor Commissioners had sold grain boat no. 1 to the St. Lawrence Navigation Corporation for \$100,000, and dredge no. 1 to Compagnie Generale d'Enterprises Publiques, for \$185,000. He also stated that they had not purchased any steamboats or dredges since that date.

It was reported recently that no appointment of a harbor master at Quebec would be made for the present, to fill the vacancy caused by the death of Capt. J. A. Murray, who lost his life in the Halifax explosion in December, 1917, as owing to the fact that the vessels entering and leaving the harbor are under the jurisdiction of the Naval Authorities, such appointment would not be necessary. It was announced later, that Capt. McGough has been appointed acting harbor master there.

Charters for coal traffic for about 600,000 tons for the head of Lake Superior, were reported closed at Cleveland, Ohio, Apr. 12, at 48c, the established rate.

### Ontario and the Great Lakes.

Water was let into the Cornwall Canal, Apr. 22, and navigation was permitted through it the following day.

The C.P.R. steamship service on the Great Lakes, will commence May 2, between Owen Sound and Fort William, and June 1 between Port McNicoll and Fort William.

The Minister of Railways and Canals has intimated that the lower end of the Trent Canal will be open for general use, May 1, and that the canal, as far up as Washago, will be open by June 1.

The Public Works Department received tenders, Apr. 22, for the use of the tug Hercules during the summer, she not being required by the department. She has been berthed at Midland, Ont., during the winter.

Representatives of Great Lakes steamship lines met in Winnipeg recently and discussed the more economical transfer of freight and passenger traffic between lake and rail at Fort William and Port Arthur, and at eastern points.

The Department of Public Works will receive tenders to May 2, for the purchase of the dredge P.W.D. no. 114, the steam tug St. Paul, and three dump scows, lying at Burlington Bay, Hamilton. The sale of each is subject to an upset price.

Action has been entered at Toronto, against A. B. Mackay, Hamilton, Ont., by F. R. Johnson, Port Colborne, Ont., and P. Bonham, Montreal, for an accounting of all earnings in connection with the operations of the s.s. Sarnor.

The first steamship to enter Fort William harbor this year was the Algoma Central Steamship Line's s.s. W. C. Franz, which arrived there, Apr. 25, from Midland. The master, Capt. Jordan, was presented with a silk hat, by the Board of Trade.

The United States s.s. Harvester arrived at Port McNicoll, Apr. 21, with 609,000 bush. of oats, from Chicago, Ill., thus opening the water borne grain season, about two weeks earlier than last year. The master reported that no ice was in sight in the Straits, Lake Huron or Georgian Bay.

The lighthouse formerly located on the southeast side of Snake Island bank, Lake Ontario, has been removed to Fourmile Point, Simcoe Island, and the hand fog horn heretofore operated at that point from a shed, is being operated from the lighthouse, and is being used to answer signals from vessels in the vicinity during thick weather.

A. McFee & Co.'s claim against the Montreal Transportation Co., for \$31,000 for the loss of 40,000 bush. of wheat through the wreck of a barge in the Cornwall canal, Oct. 30, 1913, was dismissed at Montreal, Apr. 7, on the ground that the wreck was due to the dangers of navigation, for which the transportation company was not liable.

The Minister of Public Works, in reply to a deputation, Apr. 9, relative to the development of Port Dover, Ont., harbor, is reported to have stated that everything that was necessary will be done for the adequate development of the harbor. An amount had, he said, been included in the supplementary estimates, to repair the damage caused by storms.

The Foundation Co., New York, is reported to have acquired the Reid Wrecking Co.'s business and plant at Port Huron, Mich., and to be making extensive alterations there. It is said that the dry



dock is being lengthened to 625 ft., and that keels for 10 steel trawlers are being said, it being the intention to have the vessels completed before the close of navigation next winter.

An order in council has been passed cancelling the regulations governing the Prescott and Ogdensburg ferry service, owing to the largely increased cost of operation and scarcity of fuel, and substituting new regulations permitting increased rates for passengers, vehicles and animals. The service is given by the Prescott & Ogdensburg Ferry Co.'s s.s. Miss Vandenburg.

Imperial Oil, Ltd., has acquired the s.s. Kaministiquia from the Western Navigation Co., Fort William, and has changed its name to Westoil. She was built at Wallsend-on-Tyne, Eng., in 1909, of steel, with 4 watertight bulkheads, and steel boiler house. The propelling machinery consists of triple expansion engines, with cylinders 20½, 33 and 54 in. diam. by 36 in. stroke, 1,156 i.h.p. at 76 r.p.m., and supplied with steam by 2 Scotch boilers 13½ ft. by 10½ ft. at 180 lb. Her dimensions are: length 250 ft., breadth 43 ft., depth 25 ft.; tonnage, 2,172 gross, 1,401 register.

The Public Works Department did considerable dredging at Port Burwell, Port Stanley and Rondeau, on Lake Erie, during 1917. At Port Burwell it was done to 15.6 ft., at the south end of the breakwater, 18 ft. to the south end of the harbor entrance piers, and from 16.7 to 23 ft. to the car ferry slip. At Port Stanley, to 23 ft. at the south end of the west breakwater, to 22 ft. to the south end of the harbor piers, and to 22 ft. to the foot of George St. At Rondeau, to 19 ft. in the east half of the channel between the harbor entrance piers, and to 19 ft. in the Lake Erie Coal Co.'s dock, all below zero of the gauge, which is 571.8 ft. above mean tide at New York.

### British Columbia and Pacific Coast.

The Grand Trunk Pacific Coast Steamship Co. is reported to have removed its accounting department from Vancouver to Prince Rupert.

The Coastwise Steamship & Barge Co., Vancouver, is reported to have purchased the British steamship Marmon, for its ore service between Alaska, British Columbia and Puget Sound ports.

The Naval Service Department received tenders Apr. 20, for the purchase of the schooner Naden as she lay at New Westminster, B.C. Her dimensions are: length 80 ft., breadth 20.1 ft., depth 8.6 ft.; tonnage 100.29 gross, 88.35 register.

A notice has been issued warning small craft, and boats generally, that they must be careful to go alongside the examination vessel on entering Esquimalt harbor, and not to pass without having actually stopped and received permission to proceed.

An order in council has been passed defining the harbor of Port Alberni, as, all navigable waters of Alberni Canal and of harbors, inlets, rivers, etc., falling into it, inside, or north of a line across the mouth of the canal, southeast, astronomically from the extreme of Nob Point.

The auxiliary powered schooner Margaret Haney, owned by Canada West Coast Navigation Co., which sailed from Vancouver last year with a cargo of lumber for Bombay, India, is reported to be engaged in transporting supplies to allied troops in Mesopotamia, sailing to a point near the junction of the Euphrates and Tigris Rivers.

The C.P.R. s.s. Tees, while on her route between Vancouver, Victoria and the west coast of Vancouver Island, Apr. 4, struck Zero Rock, near Sidney, and sank. She was built at Thornaby on Tees, Eng., in 1893, and was equipped with engine of 95 n.h.p., driving a screw. Her dimensions were: length 165 ft., breadth 26 ft., depth 10.8 ft.; tonnage, 679 gross, 441 register.

The management of Canada West Coast Navigation Co., which owns nine auxiliary powered schooners, is reported to have been transferred from H. W. Brown & Co., Ltd., Vancouver, B.C., to Jas. W. Elwell & Co., 17 State St., New York. It is stated that H. W. Brown & Co. will continue to manage the auxiliary schooner Malahat, and that H. W. Brown will take personal charge of his interests in Cameron-Genoa Mills Shipbuilders, Ltd., until the vessels under construction by that company for the Imperial Munitions Board, are completed.

**Motor Ships on the Pacific.**—The motor ship Janet Carruthers, owned by Canada West Coast Navigation Co., and chartered to Australia with lumber, arrived at Adelaide recently in a disabled condition, due to very heavy weather, and with a salvage claim against her, of \$10,000. She sailed from Vancouver in Sept., 1917, and was compelled to put into Honolulu with a broken shaft and cracked engine cylinders, stated to be due to negligence, possibly through ignorance of the workings of the engine. As repairs could not be made there, the propellers were disconnected and the voyage was continued under sail, but she was again compelled to put into another port for further repairs due to heavy weather. The company's motor ship Jessie Norcross, which arrived at Vancouver recently, on her return trip from Australia, encountered heavy weather and squalls, it being necessary to cut away some sails to prevent her from being capsized.

**Dominion Government Dredge Galveston.**—The Marine Department received tenders Apr. 8, for the purchase of the dredge Galveston, and it has been sold. We are advised that the purchaser intends to convert it into a cargo steamship for Atlantic service. The dredge was built in Germany in 1904, and is equipped with two suction pumps of the Dutch type, the propelling machinery consisting of triple expansion engines with cylinders 15, 24 and 39 in. diam. by 34 in. stroke, supplied with steam by 2 Scotch boilers 13¾ ft. diam. by 11 ft. long, at 180 lb. working pressure. The propellers are solid, 4 bladed, 8 ft. 4 in. diam. by 10 ft. pitch. The hopper has a capacity of 1,500 cu. yds., and the loaded draft is 14¾ ft. aft and 13 ft. 1 in. forward. The dimensions are: length 223 ft., breadth 39 ft., depth 15½ ft.; tonnage, 1,332 gross, 838 net.

**Toronto Harbor.**—The Minister of Public Works stated in the House of Commons, Apr. 24, in regard to the work in Toronto harbor, that after making a careful personal inspection, he came to the conclusion that the only work that should be proceeded with during the war, is the completion of the ship channel through Ashbridge Bay, so that the munition factories established and to be established there, can be served. In regard to the western breakwater, he maintained that the additional expenditure of \$3,000,000, in order to complete it, is not justifiable under present conditions. The department's engineers, he stated, had been consulted, and they were of the opinion that no serious damage would result to the work already done, by deferring the completion.

### Mainly About Marine People.

**N. W. Van Wyck**, heretofore Freight Claims Agent, has been appointed Purchasing Agent, Canada Steamship Lines, Ltd., Montreal, vice Peter Paton, who has resigned to engage in private business.

**J. B. Brophy**, M. Can. Soc. C. E., who died at Cornwall, Ont., April 1, from pneumonia, had been in the Railways and Canals Department service for many years, on the Trent Canal, at Trenton, Ont., then on the St. Peter's Canal, at St. Peter's, N.S., and latterly on the Cornwall Canal, at Cornwall, Ont.

**Peter Paton**, Purchasing Agent, Canada Steamship Lines, Montreal, has resigned, to become President of MacKenzie, Milne & Co., Ltd., hardware and oil well supplies, Sarnia, Ont., having bought out the interests of C. & M. MacKenzie and D. Milne. It is his intention to develop the company's ship chandlery business. The company has bought the metallic life boat building business of Watt & Son, Collingwood, and will add this line to its others.

**Reginald Beaumont**, whose appointment as Superintendent in charge of operation, Grand Trunk Pacific Coast Steamship Co., Prince Rupert, B.C., was announced in a recent issue, was born in Norfolk, Eng., Aug. 7, 1877, and entered transportation service in May, 1893, since when he has been, to May, 1900, clerk, Beaver Line, Montreal; May, 1901, to June, 1904, assistant, Muskoka Lakes Navigation and Hotel Co., Gravenhurst, Ont.; June, 1904, to Dec., 1906, purser, Northern Navigation Co., Sarnia, Ont.; Apr., 1907, to Aug., 1909, Travelling Freight and Passenger Agent, Northern Navigation Co., and G. T. R., Sarnia, Ont.; Sept., 1909, to Feb., 1910, General Agent, Northern Navigation Co., Port Arthur, Ont.; Mar., 1910, to Feb., 1918, Assistant to Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C.

The Lancaster Tugboat Co., Ltd., has been incorporated under the New Brunswick Companies Act, with \$20,000 capital and office at Lancaster, N.B., to carry on a general tugboat business, and to own and operate steam and other vessels and conduct a general navigation business. The incorporators are: J. A. and A. L. Gregory, J. D. and L. B. Mitchell, Lancaster, N.B.

**Men on Government Vessels.**—The Minister of Railways informed the House of Commons recently that 19 men were employed on vessels engaged in quarantine service. Two vessels of the service were laid up in Louise basin, Quebec, with one watchman in charge at Dec. 31, 1917. These men were engaged by the Department of Agriculture. The Marine and Fisheries Department employed 427 men for its work at the same date. It was not considered advisable to give any information as to the number of men engaged in the naval service.

**Concrete Shipbuilding in the U.S.**—It is reported that the Cleveland Builders Supply Co. will erect a shipbuilding yard at Cleveland, Ohio, for the exclusive construction of concrete ships, barges, etc. The size of the vessels to be built will be the limit of the Welland Canal, and it is expected to turn out four vessels a month.

**Steamer Eric W., Ltd.**, has been incorporated under the Quebec Companies Act, with \$10,000 capital and office at Quebec, to own and operate steam and other vessels and to carry on a general navigation business. The incorporators are W. Q. Stobo, H. C. Thorn, C. St. J. Griffiths, H. G. deGuise and L. H. Cote, Quebec.



## Concrete Shipbuilding for United States Government.

The U.S. Shipping Board decided some little time ago to begin the construction of large ocean going self propelled concrete ships. Following a long investigation by the U. S. Bureau of Standards and Shipping Board, the latter body on Dec. 27, 1917, formed a Department of Concrete Ship Construction, which has already developed a considerable organization. This organization, which is being built up around the one started by the Bureau of Standards, is studying the problems of concrete ship design, is checking over such designs as are submitted to it by outside engineers and has recommended and had approved by the board the letting of several contracts for the construction of concrete ships.

A corps of designers is engaged in the development of a standard design for a reinforced concrete ship of approximately 3,500 tons deadweight cargo carrying capacity. In this study an original investigation is being made into the moments

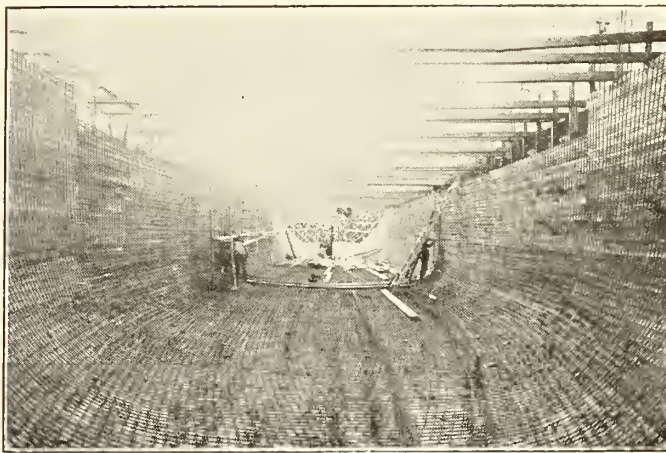
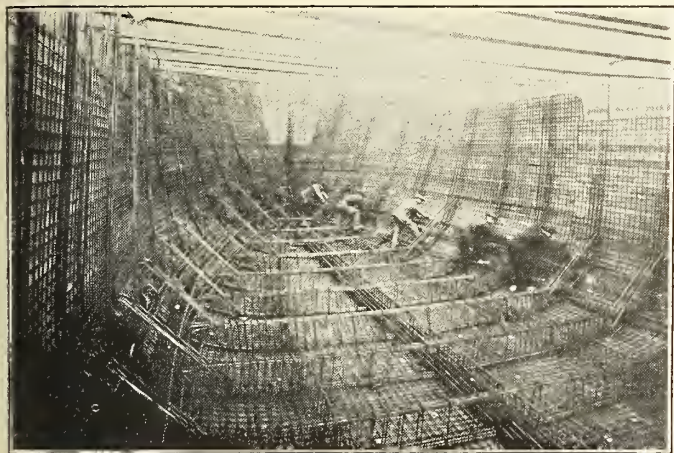
will all be in the nature of experiments, and upon their success or failure will depend the future of the government's concrete ship construction.

The design of all but the 7,500 ton ship is such that the boilers, machinery and wooden ship can be used. Such fittings will be available for installation when the concrete hulls are launched. The Shipping Board has let contracts to a number of well established plants and yards at which the assembling and fitting out of the wooden ships is to be done. These yards are convenient to the yards where the concrete hulls are to be made, and those hulls will be towed to the fitting out yards as soon as launched, there to be completed for service.

In addition to the work set forth above, the board is conducting a number of tests, under the direction of the Bureau of Standards. It is also co-operating with the U. S. Steamboat Inspection Service and Lloyd's Registry, both of which bodies

of steel, and after launching, she drew 9¼ ft. forward and 10¼ ft. aft. It is announced that she will be equipped with triple expansion engine of 1,750 h.p., supplied with steam by Scotch boilers. Oil fuel will be used, and she will carry about 30 days' supply. Her loaded speed is calculated at 10 knots an hour. She is expected to be ready for her trials early in May.

**The Lusitania Case.**—The Cunard Steamship Co. is applying to the Admiralty Branch of the Federal Court of New York, to be relieved of all liability in damage suits for \$6,000,000, or to have its liability limited, in connection with the loss of the s.s. Lusitania, which was torpedoed and sunk with great loss of life, by Germans. The company contends that the loss of the vessel was not due to negligence on its part, but was the wanton act of the common enemy. It is well to note that evidence given by A. M. Chalmers,



Concrete Vessel Construction. Working on the Interior of a Hull.

to which an ocean going vessel is subjected, as a result of which the stresses are analyzed and the design made. The complete drawings and specifications for this ship were completed early in March, at which time bids will be asked from certain selected contractors. This same designing force is also supervising the design of the ships already contracted for. The board requires that plans and specifications for all such contracts must be approved before construction is started. It is reported that satisfactory progress is being made in this work. In addition the board considers any design submitted by others persons, although so far no complete design for a reinforced concrete ship has been submitted. Many suggestions as to details, however, have proved useful to the designing force.

Three contracts have been let, to the Liberty Shipbuilding Co., Boston; the Fougner American Steel Concrete Shipbuilding Co., New York, and the Ferro Concrete Shipbuilding Corporation, New York. All three contracts are provisionally for a number of ships, but are contingent upon the seaworthiness and satisfactory character of the first ship built, which building will be under the direction of the Shipping Board. A fourth contract is under negotiation with the firm building the 5,000 ton ship at San Francisco, which is to be a 7,500 ton vessel, by far the largest concrete ship ever attempted. The board's present programme, therefore, contemplates the construction of five large concrete ships of different design. They

have detailed engineers to co-operate with and assist the board. An officer of the Bureau of Lighthouses is also giving some co-operative service. It is expected, too, that the question of concrete barges for harbor and inland waterway transport will soon be taken up with the various governmental bureaus concerned with that work. The Department of Concrete Ship Construction is under the direction of J. O. Heyworth, of the U. S. Emergency Fleet Corporation. Every effort is being made to expedite the work sufficiently to put the experimental ships in the water at the beginning of warm weather, so that should they prove successful, quantity production can be well under way by the middle of summer.

The U.S. Shipping Board announces that the President has approved an appropriation of \$50,000,000 for the acquisition or establishment of plants suitable for concrete shipbuilding, or for the extension of such plants, and for the cost of construction of concrete ships. The board has planned for the construction of three launching ways for three 3,500 ton vessels, and if these are successful, ways for the 7,500 ton type will be arranged. Work is reported to have been started at the plant at Wilmington, N.C.

The reinforced concrete vessel which was under construction at San Francisco, Cal., by private interests, was launched during March, and named Faith. Her dimensions are: length between perpendiculars 320 ft., beam 45 ft., moulded depth 31 ft. The stem and stern port are

Assistant Pier Superintendent of the company at New York, showed that he superintended the loading of the vessel, and that no explosives were taken on board. It was also stated that the allegations that the vessel carried guns, ammunition and troops, had been withdrawn, so that the matter is being fought out as to whether the sinking of the vessel was a wanton act of the common enemy, or whether the company was guilty of conspiracy.

**U.S. Lake Vessels Requisitioned for Ocean Service.**—The U.S. Government is reported to have requisitioned the following lake steamships for ocean service:—City of South Haven, steel, 232 x 40 x 16 ft., 1,719 tons gross, owned by Chicago & South Haven Steamship Co., Chicago, Ill.; Manitou, steel, 275 x 42 x 24½ ft., 2,944 tons gross, owned by Northern Michigan Transportation Co., Chicago; Puritan, steel, 260 x 40 x 24½ ft., 1,762 tons gross, owned by Graham & Morton Transportation Co., Benton Harbor, Mich.; Theodore Roosevelt, steel, 264 x 40 x 16 ft., 1,955 tons gross, owned by Indiana Transportation Co., Chicago, Ill.; and Virginia, steel, 269 x 38 x 24 ft., 1,606 tons gross, owned by Goodrich Transportation Co., Chicago. These vessels were engaged chiefly in traffic to summer resorts.

Tide Tables for Nelson, Hudson Bay, and tidal data for Hudson Strait and James Bay, for the 1918 season, have been issued in pamphlet form by the Naval Service's tidal and current survey at Ottawa.



## Cargo Steamship Building for Dominion Government.

**Orders for Steamships.**—Up to April 24 no further orders had been placed by the Marine Department for cargo steamships. In addition to those mentioned in Canadian Railway and Marine World for April, viz.: Canadian Vickers Ltd., one of 4,309 tons and one of 8,100 tons; Collingwood Shipbuilding Co., one of 3,750 tons, and Wallace Shipyards, Ltd., North Vancouver, one of 4,300 tons, the tonnage stated in each case being dead weight capacity. Other orders will be placed as the steel shipbuilding companies notify the department that they will have berths available. Among the first will probably be the Collingwood Shipbuilding Co., which stated recently that it would have two berths available in May, and which has already been given an order for one steamship, as above stated, and Canadian Allis-Chalmers, Ltd., which stated recently that it would have one berth available in June. All the department's contracts are being placed at a price per ton for completed vessels, and it is said that the prices range about \$200 a ton d.w.

**Steel Plates from United States.**—In answer to a question as to what price per 100 lb. the Dominion Government had agreed to pay for 80,000 tons of ships plates bought in the United States, for use in building ships in Canada, the Minister of Marine stated in the House of Commons, Apr. 15, the price as \$3.25 per 100 lb., base, f.o.b. mills.

**Victoria Machinery Depot, Ltd., Victoria, B.C.**—The Vancouver World stated recently that this company had been offered contracts by the Dominion Government to build 3 steel steamships of 5,100 tons each, and that it declined the offer. The same paper credited C. G. V. Spratt, of the Victoria company, with saying:—"To begin with, we are offered the same terms to construct ships of 5,100 tons as are offered to contractors in the east on vessels of 8,800 tons, that is, \$200 a ton. Everyone knows that it costs much less to build the additional thousands of tons, proportionately, than it does to build those below that. We have to bring all our steel plates from the east and pay heavy freight rates on them. We are not allowed anything additional for this. Then again there is the plant to think of. We would have to expend between \$500,000 and \$1,000,000 in getting machinery and getting the yard in running order. Another thing that we have been forced to take into consideration is the undependable state of the labor market. Even if the Dominion Government was willing to protect us, as the U.S. protects government ship contractors, against possible increase in wages, it would, perhaps, tempt us to reconsider our decision. I am not saying that it would, but it would certainly help to clear the way for our accepting the contracts."

On enquiry at Ottawa on April 24, Canadian Railway and Marine World was informed that the Victoria company had not been offered any contracts. A representative of the company visited Ottawa a short time ago, was shown the plans and specifications for the 5,100 and 8,100 ton vessels, and was told that if the company wished to submit an offer, it might do so, but up to the date mentioned no offer had been received. We are also informed that no price was mentioned by the department officials, as an offer in any way.

**Wallace Shipyards, Ltd., North Vancouver, B.C.**—Some details were given in

our last issue of the steel cargo steamship which the Dominion Government has ordered from this company. As stated, it will be of the single deck type, with poop bridge and forecastle, straight stem and elliptical stern, 5 watertight bulkheads, single screw triple expansion engines, 2 Scotch boilers, 180 lb. working pressure with forced draft. Other particulars are as follows:—

Length between perpendiculars.....	326 ft.
Breadth moulded.....	44 ft.
Depth moulded.....	25 ft.
Draft loaded.....	21 ft. 2 in.
Deadweight carrying capacity.....	4,300 tons
Sea speed loaded.....	11 knots

**The Great Lakes Transportation Co., Midland, Ont.,** has purchased the s.s. Oceanica, formerly owned by the Tonawanda Iron & Steel Co., Tonawanda, N.Y., and intends operating her between Lake Erie ports and Montreal. The hull of the vessel is of oak, and she was built at West Bay City, Mich., in 1881. She has diagonal strapping on the frames, steel boiler house, steel arches, bow sheathed for ice, windlass between decks with no efficient bulkhead abaft same, and was practically rebuilt in 1913, when her name was changed from Sevona. She is equipped with fore and aft compound engines, with cylinders 27 and 50 in. diam. by 40 in. stroke, 600 i.h.p. at 40 r.p.m., and supplied with steam by 2 boilers of the fire-box type, 9 ft. diam. by 16 ft. long, at 95 lb. working pressure. Her dimensions are: length 263 ft., breadth 37 1/4 ft., depth 21 ft.; tonnage, 1,490 gross, 1,241 register, and she has capacity for 2,600 tons of coal. The company is said to be negotiating for another vessel.

**Notice to Ocean Navigators.**—Masters of vessels are warned to keep clear of all convoys which they may meet or overtaken; the practice of cutting through a convoy is not permissible. Any merchant vessel entering a United Kingdom port must display her name in white letters on a black board, on the side on which she is approaching the examination steamer, and at such other times and in such manner as may be directed by the port authorities. Vessels under 500 tons gross shall display one such sign in the vicinity of the bridge, and vessels over 500 tons gross shall display two such signs, one in the vicinity of the bridge, and the other in the next most conspicuous position over the side. This does not relieve the vessel of the necessity of complying with Board of Trade requirements as to proper equipment of signal flags.

**Boiler Inspection Regulations.**—As the result of an interview with the Marine Department by a Dominion Marine Association deputation, the Steamboat Inspection Board's provisions regarding the pressure under which boilers made in the U.S. are allowed to be operated in Canadian vessels, have been modified, so that such boilers need not be run under an unnecessarily low pressure, on account of an old rule which placed a penalty on them on account of the absence of inspection by a Dominion officer during construction. A certain latitude was allowed upon application, but the strict rule meant that a number of U.S. made boilers were being used in Canada under a limited steam pressure and consequent disadvantage both as to speed and safety in difficult weather.

**Buoy Steamships for Maritime Provinces.**—The estimates submitted to the House of Commons recently, contain an item of \$300,000, for two steamships for buoy purposes in the Maritime Provinces. Plans have not yet been prepared for them

and it has not been decided when tenders for construction will be asked. The vessels will be designed especially for carrying and placing buoys, and will replace the C.G.S. Montmagny, which sank in the St. Lawrence River, near Crane Island, and the C.G.S. Simcoe, which foundered off the Magdalen Islands.

**The Montreal, Ottawa & Georgian Bay Canal Co.'s** application for an extension of time within which it may commence and complete its undertaking, came before the House of Commons, Apr. 18, and met with considerable opposition. Consideration was postponed, with a view to drafting a clause which would make certain that there would be no further increase in the government's moral liability in connection with the project.

**The New York State Barge Canal system** has been taken over by the U.S. Director of Railways, and will, it is stated, be operated under the direction of G. A. Tomlinson, Duluth, Minn. Other canal systems will, it is expected, be similarly dealt with, and the whole operated with a view to relieving traffic on the railways. It is announced that the U.S. Government will have a number of barges built for canal use.

**Welland Ship Canal Construction.**—The Dominion Government's estimates for the fiscal year ending Mar. 21, 1919, provide for \$1,860,000 for construction on the Welland Ship Canal. Canadian Railway and Marine World is officially advised that this is to settle up claims the contractors have against the government, and not for the continuance of the work, which is closed down until after the war.

**U.S. Government Great Lakes Service.** It is announced that the Director General of U.S. railways has ordered the establishment of a Great Lakes steamship line between Milwaukee, Chicago and Buffalo, with the object of relieving the railways of considerable through traffic. He is also stated to have assigned seven steamships to the service, which is likely to be extended and more vessels added.

**Maximum Vessel Loading.**—On representations from the British Food Controller, vessels trading with United Kingdom ports will be allowed to load ships' stores in excess of the voyage requirements, provided they conform to the regulations of the shipowners' provision pool. This will enable all available store accommodation, including staterooms, where practicable to carry food supplies.

**Shipbuilding in Japan.**—It is announced that approximately 331,300 tons of shipping will be launched in Japan during this year. This, it is stated, will be disposed of as follows: for Great Britain, 148,000 tons; for France, 23,000 tons; for Italy, 5,600 tons; for service between Japan, U.S., Russia and British territories, 16,700 tons; for probable sale to allied countries, 87,000 tons.

**U.S. Ship Deliveries and Launchings in March.**—The U.S. Shipping Board states the deliveries and launchings for March as follows:—Deliveries, 21 vessels, 166,700 tons deadweight; launchings, 6 contract steel vessels, 51,650 tons deadweight, 21 requisitioned vessels, 149,636 tons deadweight; 9 others wood and composite, 31,500 tons deadweight.

**Vessel Insurance on the Great Lakes.** A press report states that the Great Lakes Protective Association will carry 25% of the insurance on the vessels owned by its membership, the initial rate of contribution for the year being fixed at 3 3/4% as last year. The valuation of steel vessels has been advanced \$5 a ton, making it \$56 a ton.



## Harbor, River and Graving Dock Estimates for 1918-1919.

The Public Works Department's estimates for the year end Mar. 31, 1919, submitted to the House of Commons recently, contain, among others, the following items chargeable to capital:—

HARBORS AND RIVERS.	
St. John Harbor, improvements .....	\$ 250,000.00
Quebec Harbor, Champlain dry dock	355,000.00
Quebec Harbor, River St. Charles, improvements to navigation .....	15,000.00
Toronto harbor, improvements .....	550,000.00
Port Arthur and Fort William, harbor and river improvements .....	350,000.00
Vancouver harbor, improvements .....	150,000.00
Victoria harbor, improvements .....	166,000.00
	\$1,836,000.00

The following public works items (Marine Department) are chargeable to capital:—

River St. Lawrence, ship channel ...	\$ 478,000.00
To provide for construction and completion of dredging plant on St. Lawrence River from Montreal to Father Point .....	163,900.00
For converting six ship channel tugs for salt water service .....	50,000.00
	\$691,900.00

The following items are chargeable to income:—

NOVA SCOTIA.	
Barrington's Cove, Sydney Mines, partial reconstruction of wharf...	\$ 1,100.00
Battery Point, breakwater repairs and reconstruction .....	3,100.00
Breen's Pond, repairs to breakwater .....	1,050.00
Burlington, repairs to wharf .....	1,200.00
Cow Bay (Port Morien), repairs to breakwater .....	5,600.00
Cribb's Point, repairs to and reconstruction of wharf .....	1,800.00
Devil's Island, repairs to breakwater .....	1,300.00
Digby Pier, renewals .....	5,000.00
East River, improvements .....	10,000.00
Eatonville, repairs to breakwater .....	2,500.00
Felzen South, repairs to breakwater .....	1,100.00
Five Islands, repairs to wharf .....	600.00
Freeport, repairs to breakwater .....	1,500.00
French Village, repairs to wharf .....	1,000.00
Great Village, repairs to wharf .....	700.00
Harbors and rivers generally, repairs and improvements .....	60,000.00
Harbor au Bouche, repairs to wharf .....	700.00
Jamesville, completion of breakwater .....	2,000.00
Kelly's Cove, repairs to wharf and breakwater .....	1,700.00
L'Ardoise, repairs to breakwater .....	1,800.00
Maitland, repairs to wharf .....	1,100.00
Malagash, repairs to wharf .....	1,000.00
Margaree harbor, repairs and improvements .....	10,900.00
Margaretville, repairs to breakwater .....	3,000.00
McKay's Point (Judique), repairs and renewals to breakwater .....	4,500.00
McNair's Cove, repairs to breakwater .....	2,800.00
Mosher's Bay, repairs to breakwater .....	1,300.00
Parrsboro, repairs to beach protection .....	1,000.00
Petite Riviere, repairs to breakwater .....	740.00
Portuguese Cove, repairs to breakwater .....	1,320.00
Ross' Ferry, repairs to wharf .....	750.00
Round Hill, repairs to wharf .....	2,000.00
South Ingonish, to repair and reconstruct beach protection .....	1,900.00
Sydney Harbor, repairs to quarantine wharf .....	850.00
	\$136,910.00

PRINCE EDWARD ISLAND.	
Harbors and rivers generally, repairs and improvements .....	\$ 14,000.00
Miminigash Harbor, repairs to breakwaters .....	2,000.00
Souris, to repair and strengthen breakwater .....	35,000.00
Summerside, repairs to breakwater .....	750.00
Tignish, repairs to breakwaters .....	1,000.00
Victoria, repairs to pier .....	1,500.00
Wood Islands, repairs to breakwaters .....	2,100.00
	\$56,350.00

NEW BRUNSWICK.	
Back Bay, wharf repairs and improvements .....	\$ 3,500.00
Cape Bald, repairs to breakwater pier .....	3,100.00
Dorchester, wharf improvements .....	800.00
Fort Dufferin, reconstruction of breakwork .....	18,000.00
Grand Anse, repairs to breakwater and pier .....	750.00
Harbors and rivers generally, repairs and improvements .....	40,000.00
Neguac, repairs to wharf .....	3,000.00
Richibucto Beach, breakwater repairs and improvements .....	800.00
Shediac, repairs to wharf .....	1,400.00

Shippigan Gully, repairs to breakwater and breastworks .....	3,500.00
St. John River and tributaries, to provide for full and final contribution to local Government, not to exceed one-half cost of certain wharfs built by it in tidal waters .....	5,923.99
	\$80,773.99

QUEBEC.	
Anse aux Gascons, repairs to wharf...	\$ 10,600.00
Baie St. Paul, repairs to wharf .....	600.00
Chicoutimi, repairs to wharf .....	2,000.00
Cross Point, repairs to wharf .....	2,000.00
East Templeton, repairs to wharf .....	925.00
Graham, reconstruction of wharf .....	1,700.00
Harbors and rivers generally, repairs and improvements .....	75,000.00
Kamouraska, repairs to wharf .....	1,200.00
Laprairie, protection works, maintenance and repairs .....	20,000.00
Les Eboulements, repairs to wharf .....	900.00
Matane, repairs to breakwater .....	1,000.00
Murray Bay, repairs and improvements to wharf .....	2,000.00
Pointe a Elie, repairs to breakwater, wharf .....	1,200.00
Rimouski, harbor improvements .....	100,000.00
Rimouski wharf, water supply .....	6,000.00
River du Loup (en bas), repairs to wharf .....	1,500.00
Riviere Ouelle, repairs and improvements to wharf .....	1,500.00
Sabrevois, repairs to wharf .....	600.00
St. Alphonse, repairs to wharf .....	2,100.00
St. Godfroy, repairs to wharf .....	1,000.00
St. Irene, repairs to wharf .....	850.00
St. Johns, reconstruction of booms .....	1,300.00
St. Laurent, Island of Orleans, repairs to wharf .....	2,700.00
Three Rivers, repairs to wharf .....	2,000.00
Yamaska, reconstruction of dam .....	1,500.00
	\$240,175.00

ONTARIO.	
Bayfield, repairs to pier .....	\$ 4,000.00
Blind River, repairs to wharf .....	1,000.00
Burlington channel, repairs to wharf .....	1,000.00
Cobourg, repairs to Langevin pier .....	40,000.00
French River dams, repairs and maintenance .....	3,000.00
Jennings and Ross in connection with contract for construction of substructure of Big Chaudiere dam .....	5,800.00
Goderich, repairs to lumber dock .....	3,000.00
Grand Bend, repairs to piers .....	1,000.00
Harbors and rivers generally, repairs and improvements .....	65,000.00
Kingston, maintenance and operation of combined roadway wharf and bridges .....	8,500.00
Port Bruce, repairs to pier .....	2,100.00
Port Burwell, repairs to piers .....	14,600.00
Port Colborne, repairs to breakwaters .....	7,400.00
Port Hope, harbor improvements .....	2,000.00
Port Stanley, harbor improvements .....	77,000.00
Rondeau Harbor, repairs to piers and placing of riprap .....	4,000.00
Saugen River, Southampton, repairs to piers .....	4,000.00
Sheguindah, repairs to wharf .....	1,000.00
Southampton, repairs to breakwaters .....	1,800.00
Sturgeon Falls, repairs to wharf .....	875.00
Thessalon, repairs to wharf .....	1,000.00
Wellington, in final settlement of claims of McFarlane, Pratt, Hanley, Ltd., in connection with contract for harbor improvements .....	3,240.00
Wendover, repairs to wharf .....	1,000.00
	\$252,315.00

MANITOBA.	
Harbors and rivers generally, repairs and improvements .....	\$ 15,000.00
Little Pembina River, diversion into Pelican Lake .....	15,500.00
Red River, repairs to channel protection work .....	3,000.00
	\$33,500.00

SASKATCHEWAN AND ALBERTA.	
Harbors and rivers generally, repairs and improvements .....	\$ 20,000.00

BRITISH COLUMBIA.	
Fraser River (lower), improvements .....	\$ 21,500.00
Goose Bay, repairs to wharf .....	1,000.00
Harbors and rivers generally, repairs and improvements .....	75,000.00
Prince Rupert quarantine station, repairs to wharf .....	2,000.00
Tofino, repairs to wharf .....	1,600.00
Victoria harbor, repairs to wharf .....	4,500.00
Williams Head quarantine station, improvements and repairs .....	13,200.00
	\$118,800.00

GENERALLY.	
Harbors and rivers, generally .....	\$ 30,000.00
DREDGING.	
New dredging plant, Ontario and Quebec .....	\$ 6,000.00

Dredging, Maritime Provinces .....	200,000.00
Dredging, Ontario and Quebec .....	200,000.00
Dredging, Manitoba, Saskatchewan and Alberta .....	64,000.00
Dredging, British Columbia .....	250,000.00
	\$720,000.00

SLIDES AND BOOMS.	
Gatineau River, new boom .....	\$ 11,000.00
Slides and booms generally .....	5,000.00
	\$16,000.00

The following Public Works Department items are chargeable to collection of revenue:—

SLIDES AND BOOMS.	
Upper Ottawa Improvement Co.'s yearly allowance for logs passed through Chenaux Boom .....	\$ 1,800.00
Gatineau River, annual allowance for the use of Gilmour & Hughson's boom at Cascades .....	600.00
Ottawa District, slides and booms, etc. .....	43,500.00
Saguenay District, booms, piers, etc. .....	8,000.00
	\$53,900.00

GRAVING DOCKS.	
Champlain graving dock .....	\$ 20,000.00
Levis graving dock .....	27,300.00
Esquimalt graving dock .....	21,000.00
	\$68,300.00

HARBOR AND RIVER WORKS, ETC.	
Burlington channel bridge .....	\$ 5,800.00
Montreal River, dam at Latchford ..	3,000.00
River Yamaska lock and dam .....	2,500.00
Riviere du Lievre lock and dam .....	3,500.00
St. Andrew's Rapids lock and dam, Red River, Man. ....	20,700.00
Selkirk, Man., repair slip .....	5,200.00

MISCELLANEOUS.	
Maintenance and operation of water storage dams on Ottawa River and tributaries, surveys in connection therewith, and settlement of land damages .....	\$ 125,000.00
Dry docks generally, inspection, etc. For operation and maintenance of inspection boats .....	4,000.00
Gratuity to Capt. Barney Freeman, who was seriously injured while at work in government shipyard at Selkirk .....	2,000.00
River gauging and metering .....	24,000.00
To pay Western Dry Dock & Shipbuilding Co., Port Arthur, a portion of fifth payment of subsidy due upon completion of work covered by agreement, notwithstanding that the work is not completed .....	35,641.50

AUTHORIZED BY STATUTE.	
Collingwood dry dock No. 1 .....	15,000.00
Collingwood dry dock No. 2 .....	9,208.96
Montreal floating dock .....	105,000.00

## Naval Service Estimates for 1918-1919.

The estimates for the year ending Mar. 31, 1919, submitted to the House of Commons recently, contain, among others, the following items:—

Naval Service, to provide for the maintenance and upkeep of ships, Naval College, dockyards at Halifax and Esquimalt, and Royal Naval Canadian Volunteer Reserve .....	\$ 600,000.00
Fisheries Protection Service, to provide for repairs and maintenance of fisheries protection steamships ..	300,000.00
Hydrographic Survey .....	215,000.00
Radiotelegraph Service, to provide for building and maintenance of wireless stations .....	225,000.00
Tidal Service, to provide for maintenance of tidal stations and surveying steamers .....	25,000.00
Patrol of northern waters of Canada ..	40,000.00
Life saving stations, including rewards for saving life .....	100,000.00
Royal Naval College of Canada, restoration .....	25,000.00
	\$1,530,000.00

## Marine Department Estimates for 1918-1919.

The estimates for the year ending Mar. 31, 1919, submitted to the House of Commons recently, contain, among others, the following items:—

LIGHTHOUSE AND COAST SERVICE.	
Agencies, rents and contingencies .....	\$ 178,000.00
Salaries and allowances to lightkeepers .....	485,000.00



Maintenance and repairs to light-houses . . . . .	700,000.00
Construction of lighthouses and aids to navigation, including apparatus, submarine signals, and providing suitable boats for carrying on construction work . . . . .	400,000.00
Signal service . . . . .	60,000.00
Administration of pilotage and maintenance and repairs to steamship Eureka . . . . .	56,300.00
Maintenance and repairs to wharfs Breaking ice in Thunder Bay and Lake Superior and other points deemed advisable for good of navigation . . . . .	40,000.00
To pay pension of \$300 each per annum to retired pilots . . . . .	9,300.00
To provide telephones at different points throughout the Dominion in connection with aids to navigation Allowance to harbor master at Amherstburg, for supervision of lights and buoys in St. Clair River, Detroit River, Lake Erie, and other services during navigation . . . . .	500.00
	400.00
	\$1,939,500.00

OCEAN AND RIVER SERVICE.	
Maintenance and repairs to Dominion steamships and ice breakers . . . . .	\$ 1,500,000.00
Examiners of masters and mates . . . . .	16,500.00
Investigations into wrecks . . . . .	12,800.00
Expenses of schools of navigation . . . . .	5,000.00
Registration of shipping . . . . .	3,000.00
Removal of obstructions in navigable waters . . . . .	5,000.00
Inspection of live stock shipments . . . . .	3,000.00
To continue subsidy for wrecking plants, Quebec, Maritime Provinces and British Columbia . . . . .	35,000.00
Unforeseen expenses . . . . .	5,000.00
Amount required for two boilers for C.G.S. Montcalm . . . . .	60,000.00
Amount required for two steamships for buoy service in Maritime Provinces . . . . .	300,000.00
	\$1,947,800.00
MISCELLANEOUS.	
Compassionate allowances to the widows, or fathers, or mothers, or dependents of the captain and members of the crew of the C. G. S. Simcoe, who lost their lives when that vessel foundered in the Gulf of St. Lawrence, Dec., 1917 . . . . .	\$ 61,500.00

## Mail Subsidies and Steamship Subventions for 1918-1919.

The estimates for the year ending Mar. 31, 1919, submitted to the House of Commons recently, contain, among others, the following items:—

ATLANTIC OCEAN, STEAM SERVICES.	
Between Canadian Atlantic ports and Australia and New Zealand . . . . .	\$ 70,000.00
Between Canada and Great Britain . . . . .	400,000.00
Between Canada and Newfoundland	70,000.00
Between Canada and the West Indies or South America, or both . . . . .	250,666.66
Between Canada and South Africa . . . . .	73,000.00

PACIFIC OCEAN.	
Between Canada and Australia or New Zealand or both, on Pacific Ocean . . . . .	180,599.00
Between Canada, China and Japan . . . . .	253,333.31
Between Prince Rupert, B.C., and Queen Charlotte Islands . . . . .	21,000.00
Between Victoria and San Francisco	3,000.00
Between Victoria, Vancouver way ports and Skagway . . . . .	12,500.00
Between Victoria and West Coast Vancouver Island . . . . .	5,000.00
Between Vancouver and northern ports of British Columbia . . . . .	16,800.00

LOCAL STEAM SERVICES.	
Between Baddeck and Iona, N.S. . . . .	5,825.00
Between Charlottetown, Victoria and Holliday's Wharf, P.E.I. . . . .	2,500.00
Between Froude's Point and Lockeport, N.S. . . . .	600.00
Between Grand Manan and the mainland of N.B. . . . .	10,000.00
Between Halifax, Canso and Guysboro, N.S. . . . .	5,000.00
Between Halifax and Newfoundland via Cape Breton ports . . . . .	10,000.00
Between Halifax, Mahone Bay, Tanook Islands and La Have River ports . . . . .	4,000.00
Between Halifax and Spry Bay and ports in Cape Breton . . . . .	4,000.00
Between Halifax, South Cape Breton and Bras d'Or Lake ports . . . . .	6,000.00
Between Halifax and west coast Cape Breton, calling at way ports . . . . .	4,000.00
Between Halifax and Sherbrooke . . . . .	2,000.00
And between the mainland and the Magdalen Islands . . . . .	18,000.00
Between Mulgrave and Canso . . . . .	6,500.00
Between Mulgrave and Guysboro, calling at intermediate ports . . . . .	5,500.00
Between Newcastle, Neguac and Escuminac, calling at all intermediate points on Miramichi River and Miramichi Bay . . . . .	2,500.00
Between Pelee Island and mainland . . . . .	8,000.00
Between Petit de Grat and Intercolonial Ry. terminus at Mulgrave . . . . .	7,000.00
On Petitodiac River between Moncton and way ports, and a port or ports on west coast of Cumberland County . . . . .	2,500.00
From opening to closing of navigation in 1918, between Pictou, Mulgrave and Cheticamp . . . . .	7,500.00
From opening to closing of navigation in 1918, between Port Mulgrave, St. Peter's, Irish Cove and Marble Mountain and other ports on Bras d'Or Lakes . . . . .	6,500.00
During 1918, between Quebec and Harrington, calling at ports and places along northern shore of the River St. Lawrence between such terminals . . . . .	28,000.00
Between Quebec and Gaspé Basin, touching at intermediate ports . . . . .	8,500.00

Between River du Loup, Tadoussac and other north shore ports . . . . .	6,000.00
Between St. John, N.B., and ports in Cumberland Basin . . . . .	3,000.00
Between St. John, N.B., and Bridge-town . . . . .	2,500.00
Between St. John, N.B., and Digby	20,000.00
Between St. John, N.B., Digby, Annapolis and Granville, viz., along west coast of Annapolis Basin . . . . .	2,000.00
Between St. John, N.B., and ports on Bay of Fundy and Minas Basin, and Margareville, N.S. . . . .	8,000.00
Between St. John, Westport and Yarmouth and other way ports . . . . .	10,000.00
During year 1918 between St. Stephen, N.B., Ste. Croix River points, Deer Island, Campobello and inner islands, Passamaquoddy Bay and L'Etete or Back Bay . . . . .	6,000.00
During season of 1918, between Sydney and Bay St. Lawrence, calling at way ports . . . . .	6,000.00
During season of 1918 between Sydney and Whycomagh . . . . .	3,000.00
From Sydney, N.S., around east coast of Cape Breton to Hastings and return to Sydney via Bras d'Or Lakes	5,500.00
Expenses in connection with supervision of subsidized steamship services . . . . .	3,000.00
	\$1,585,234.00

AUTHORIZED BY STATUTE.	
Canada, China and Japan . . . . .	\$ 121,666.55
Canada and France . . . . .	200,000.00
	\$321,666.55

## Jurisdiction Over Coastwise and Great Lakes Vessels.

In introducing a bill to amend the Railway Act, into the House of Commons, Apr. 4, J. E. Armstrong, M.P. for East Lambton, who is chairman of the Railway Committee, said:—

"This bill is similar to the one I introduced in 1915. The legislation is along the same line as that which I have asked Parliament during the last five years, to bring into force. It is for the purpose of bringing the boats engaged on our inland waters and our coastwise trade under the control of the Board of Railway Commissioners. The railways are compelled to file their tolls, rates and tariff agreements with the board, and they are also compelled to do this with regard to boats connected with the railways. I firmly believe it would be in the public interest, not only to compel the boats on our inland waters and along the coast to file their tariff rates with the board, but to bring them under the board's absolute control. There are on the Canadian register 8,500 vessels, with some 45,000 employes. In view of the fact that these vessels are allowed to make use of our rivers, harbors, docks and canals free of

charge, in which improvements the people of this country have invested over \$350,000,000. I think members will readily agree that it would be in the public interest for Parliament to have control over these."

When this matter was brought up last year, and it was proposed to embody a similar provision in the Consolidated Railway Act, the committee, after strong and general opposition, in which the Dominion Marine Association and the leading boards of trade took part, struck out the provision objected to, but the bill did not become law, as Parliament adjourned before final action could be taken. It is probable that the Consolidated Railway Act, which has been before the Senate, will be sent back to the House of Commons for further amendment, when another attempt may be made to incorporate the objectionable provision in the act. It is, however, expected that there will be little, if any, time for a fair discussion of the question, and that no action will be taken in view of the opposition of last year.

## Decision in a Vessel Partnership Case.

At Toronto, April 10, Mr. Justice Rose gave judgment in the non-jury assize court in favor of Capt. James B. Foote, of Toronto, who had instituted a suit against A. B. Mackay, of Hamilton, Ont., for a declaration that he had a 5% interest in the two former lake steamships, the Turret Chief and the Algonquin, and for an accounting of profits, both vessels figuring in war sales.

The Turret Chief was wrecked in the storm that swept the great lakes in the autumn of 1913 and was abandoned by the owners to the underwriters, who subsequently released her and took her to Port Arthur, Ont. Foote claimed that Mackay and he bought the vessel from the underwriters for \$8,500, made repairs and thereafter sent her with a cargo from Chicago to Leith, Scotland, where the vessel was sold for £30,250.

In Dec., 1915, the Algonquin was purchased from the Port Colborne & St. Lawrence Navigation Co., for \$80,000. Foote claimed that his profits from the first sale, or some of them, remained in the Algonquin, which was sold to interests affiliated with the Nova Scotia Steel Co. and engaged in coastwise trade in the Lower St. Lawrence until the autumn of 1916, when she was again sold to New York interests, and on her first voyage thereafter was sunk by a German submarine off the Irish coast.

The Tunisie-Cabotia Collision.—Cross actions for damages were heard in the Admiralty Court, Montreal, recently, arising out of the collision between the Belgian steamship Tunisie and Canada Shipping Co.'s s.s. Cabotia, near Windmill Point, Montreal harbor, Oct. 28, 1917. The court found that the s.s. Cabotia was entirely at fault and gave judgment accordingly, leaving the assessment of damages to the Registrar of the Court. The result of the Wreck Commissioner's enquiry into the causes of the casualty, as published in Canadian Railway and Marine World for Dec., 1917, showed that the master of the s.s. Cabotia, was needlessly daring and showed bad judgment and recklessness, and that he violated the port's bylaws in obstructing navigation, and his certificate was suspended for six months from Nov. 10, 1917. The master and officers of the s.s. Tunisie were exonerated from all blame.

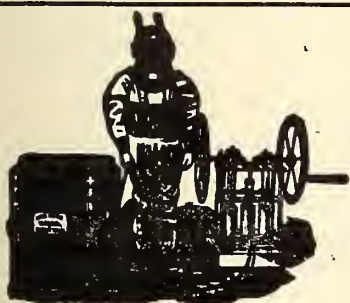


### Turning Vessels in the River at Fort William.

In pursuance of a resolution passed at the Dominion Marine Association's annual meeting recently, a committee had an interview with the Deputy Minister of Marine at Ottawa on Mar. 7 and as a result an order in council was passed Mar. 14, cancelling sec 15 of the special regulations for the Fort William, Ont., harbor, and substituting the following section therefor:—

"Steam vessels not exceeding 200 tons gross may turn in any part of the Kaministiquia River, McKellar channel or Mission channel, under their own power, excepting in the immediate vicinity of any bridge crossing those rivers or channels. Steam vessels exceeding 200 tons gross are prohibited from turning in the local harbor, excepting at the turning basins constructed for that purpose at West Fort, above the G.T.P. Ry. bridge, at the confluence of the Kaministiquia River with Mission channel, at the confluence of the Kaministiquia River with McKellar channel and at the G.T.P.R. turning basin near the mouth of Mission channel; provided that steam vessels exceeding 200 tons gross, but not exceeding 330 ft. long may turn in the section of the Kaministiquia River lying between the bend above the C.P.R. elevator D and the westerly limit of the G.T.P.R. rail dock and in the section of the river lying between C.P.R. slip 1 and elevator C, but the turning of such vessels in those sections of the river shall not take place without the use of a tug, unless sanctioned by the harbor master."

**Naval Patrol Boats and Mine Sweepers.** Mr. Sinclair asked the following questions in the House of Commons on April 10:—How many naval patrol boats and mine sweepers of all classes were ordered on Government account in 1916 and 1917? How many have been delivered to date? What is the speed of these boats? If various, specify? Are they constructed of wood or steel? What service are they intended for? What has been the total expenditure to date? How many officers and men are employed in this branch of the service? The Minister of Marine stated in reply, that as the information asked was of a confidential nature, it was not considered advisable in the public interests to publish it.



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### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**The Northern Electric Co., Montreal.** has been appointed exclusive agent for Canada and Newfoundland, for the Drew Electric & Manufacturing Co., Indianapolis, Indiana, manufacturers of electric light, power and gas materials.

**Independent Pneumatic Tool Co.—F. J. Hurley**, who travelled for the company's New York office for several years, died at East Orange, N.J., Mar. 10, aged 29, from Hodgkins disease, from which he had suffered for some time.

**Canada Foundries & Forgings, Ltd., Welland, Ont.**, has issued an illustrated booklet, "Craft of the Hammersmith," dealing with the art of forging, and with heat treatment, and referring among other things to heavy marine and locomotive parts.

**Berry Bros., Inc.—M. F. Enrich**, who was with the Glidden Co. for 28 years, having risen from the bottom to the position of assistant to Mr. Glidden, has been appointed Assistant General Manager for Berry Bros., varnish manufacturers, Detroit, Mich., and Walkerville, Ont.

**The Canuck Supply Co.'s** manufacturing subsidiary, the Spartan Machine Company, Ltd., Montreal, is making a considerable addition to its existing plant, in order to manufacture railway and mechanical devices and supplies. J. Bruce Robb, who served with the P.P.C.L. Infantry, and was invalided home to Canada early in the war, has been able to take up work again with the Canuck Supply Co. and is taking over the territory formerly attended to by E. L. Foley, who volunteered some three months ago and is now on military service.

**Consolidated Equipment Co., Ltd.**, was incorporated recently under the Dominion Companies Act, with an authorized capital of \$25,000, and office at Montreal. The officers are: Herbert Ewan, President; J. W. Coleman, Vice President and Treasurer; and H. B. Duke, Secretary. The company announces that it represents the following, among others:—Murphy Lines, including Imperial Appliance Co. and Standard Railway Equipment Co.; Nathan Mfg. Co., lubricators and injectors; Brown & Co., stay and engine bolt irons; R. W. Young Mfg. Co., electric turntable trolleys; Standard Paint & Varnish Co.,

Windsor, Ont.; Spencer Otis Co., Chicago; Bako Macco Co., union renewable fuses; Howe locomotive bell ringer.

**T. McAvity & Sons, Ltd., St. John, N. B.**, have issued an illustrated catalogue of McAvity marine specialties, to pass British Admiralty, Lloyd's, and Imperial Munitions Board's specifications, including valves, cocks, water columns, water gauges, side or port lights, ventilating posts, steam whistles, gauges, plugs, brass and copper pipes and tubes, gongs, signal and binnacle bells, bell pulls, crank, chain and leaders, ships' pumps, deck pumps, deck plates, ships' rudder braces, dumb braces, dovetails, brass and lead figures, letters and water marks, sounding leads, steering wheel caps, diamonds and stars, bushings, marine hardware, cordage, galvanized wire rope, chains, bolt, scupper and sheathing nails, ship and boat spikes, steel and brass wooden screws, tackle blocks, shipbuilders tools, mallets, caulking irons, augers, pulley blocks, jack screws, etc.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Canadian Society of Civil Engineers—F. S. Keitin, 176 Mansfield St., Montreal.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Quebec.

Railway Association for National Defence—W. M. Neal, Montreal.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacramento Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.

### Steamer For Sale

Twin Screw, Steel Hull "Steamer Oiseau," now operating on Ottawa River from Pembroke. Length 120 ft. Beam 22 ft. 8 in. Gross tonnage 148. Horse power of engines 250 each. Fully equipped with Electric Light Plant, Life Belts, Buoys, etc. For further particulars apply to

**PEMBROKE TRANSPORTATION COMPANY, LIMITED,**  
Pembroke, Ontario.



Capital Authorized.....\$10,000,000  
Capital Paid up.....7,000,000  
Reserve Fund.....7,000,000

Head Office: Toronto.

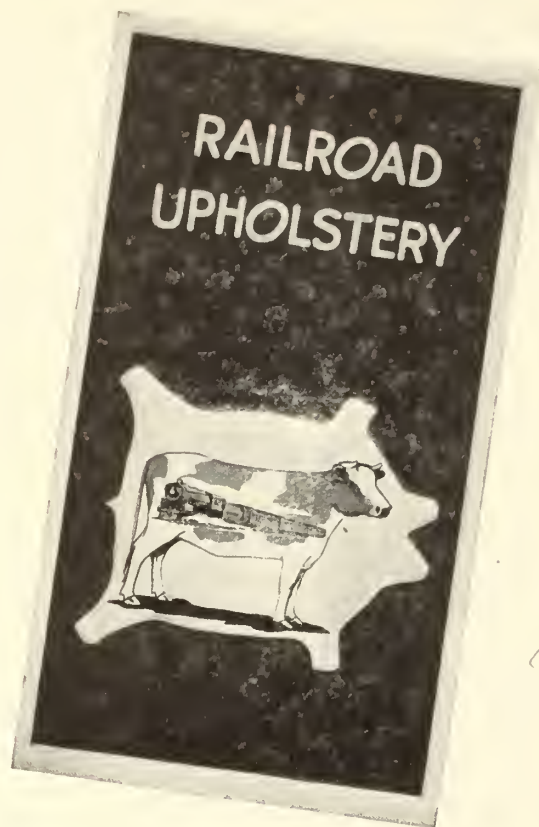
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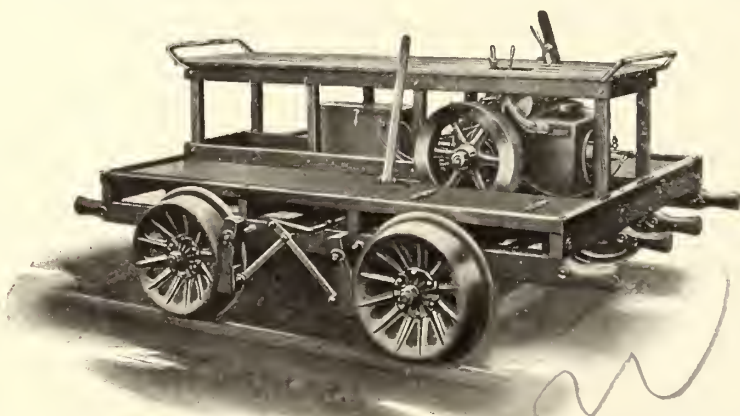
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Railway motor cars have come to stay. The days of the old pump car are numbered. A motor car is the biggest labor and time saver that has ever been put into service in the Maintenance-of-Way Dept. It has become practically impossible to hire track men unless equipped with motor cars. National cars are in service on practically all railways throughout the United States and Canada and are thoroughly practical for their different purposes. If interested in Motor

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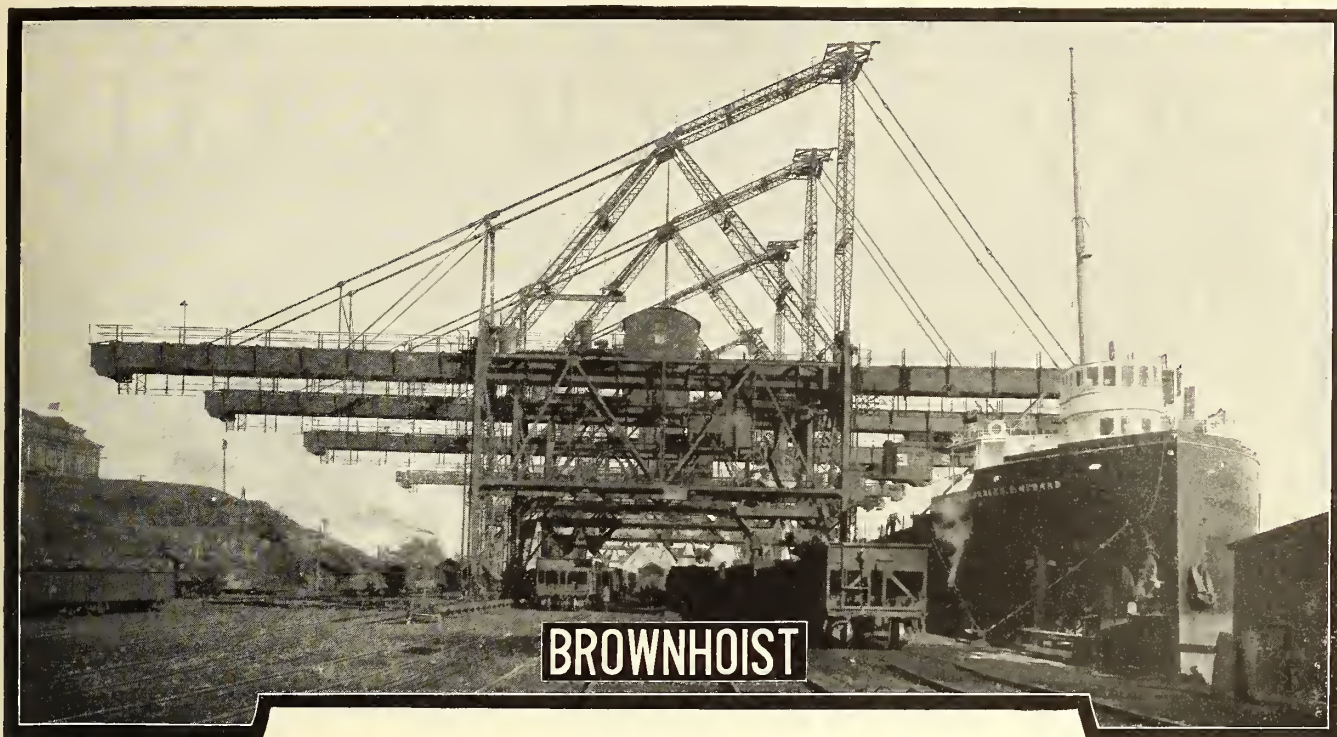
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Brownhoist Machines for ore and coal consist of various types and sizes, two of which are shown here. The upper view shows a plant of 4 Brownhoist Ore Unloaders at Conneaut, Ohio. The lower view shows an 8-wheel Brownhoist Locomotive Crane used by The Struthers Furnace Co. for handling ore, coal, coke, stone and pig iron.

Brownhoist Machinery for handling ore and coal have been used for 38 years, and can be found in many parts of the world. These many years' records prove them to be fast, safe and durable. You can depend upon them. Brownhoist Equipment may cost more, but is worth it.

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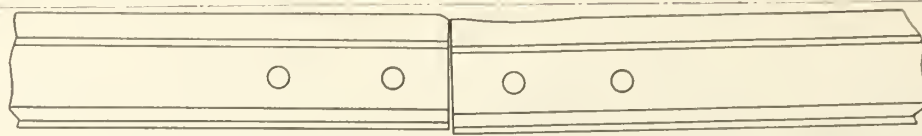
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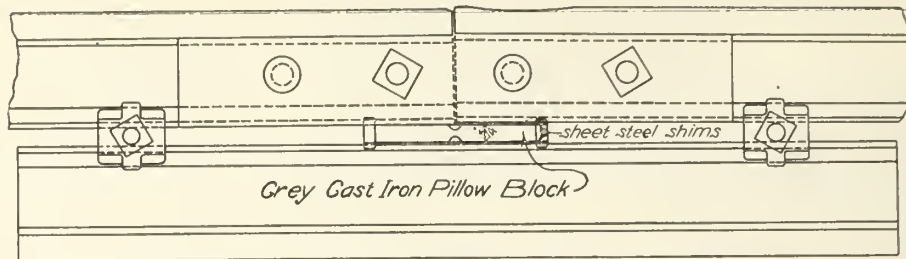




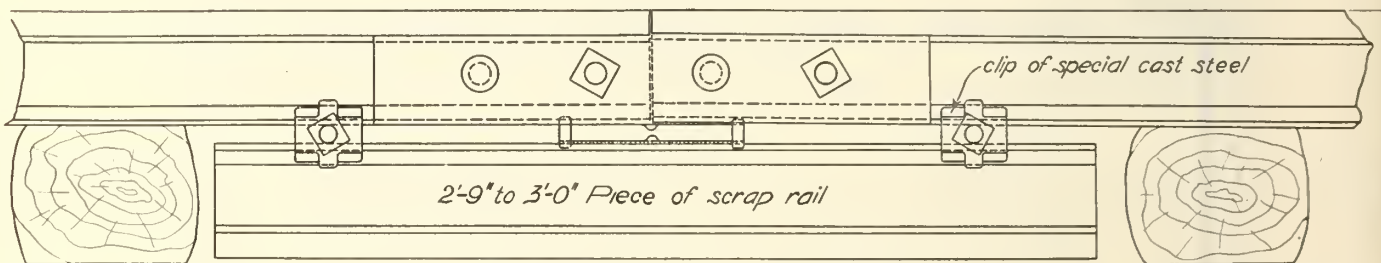
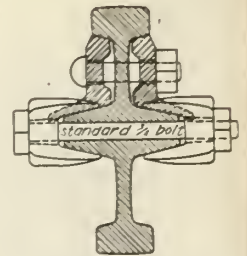
# SAVE YOUR RAIL



*Position of cupped and depressed joint with plates removed before lifting*



*Position of cupped and worn joint after being lifted and made ready for grinding*



*Position of joint after grinding*

Trussed Rail Joint, London Street Railway.

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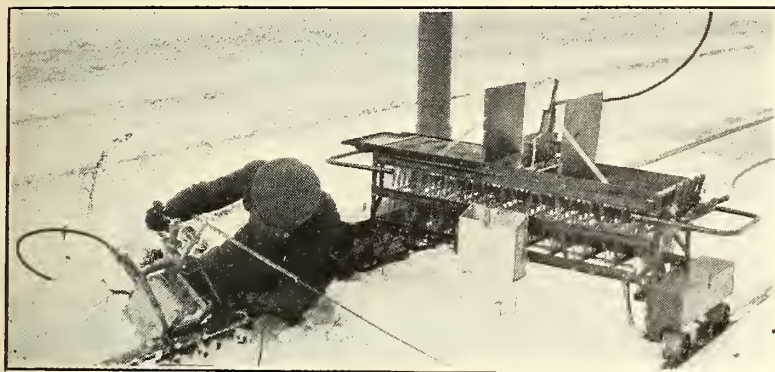
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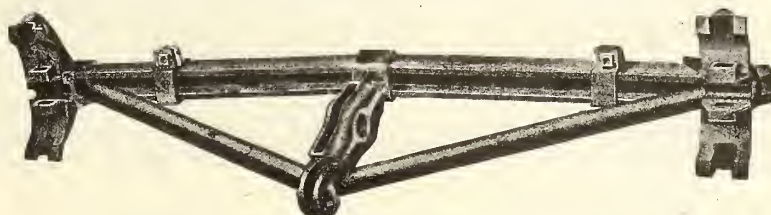
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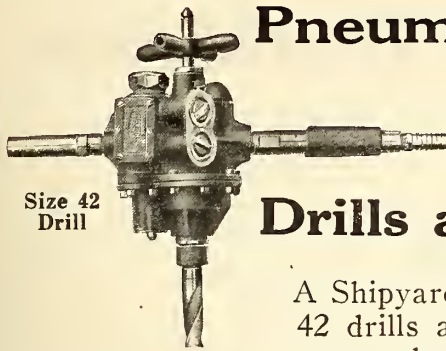
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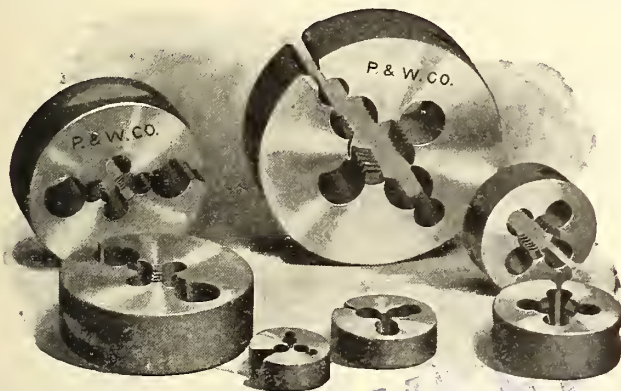


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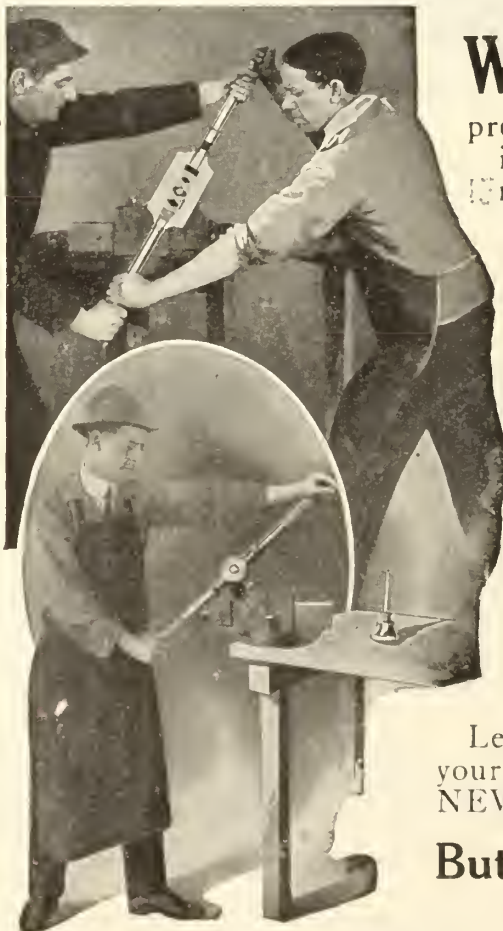
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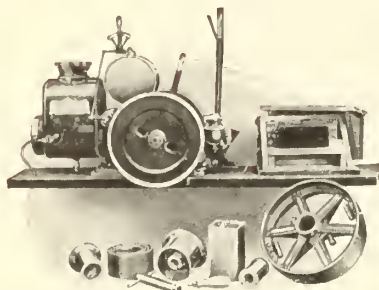
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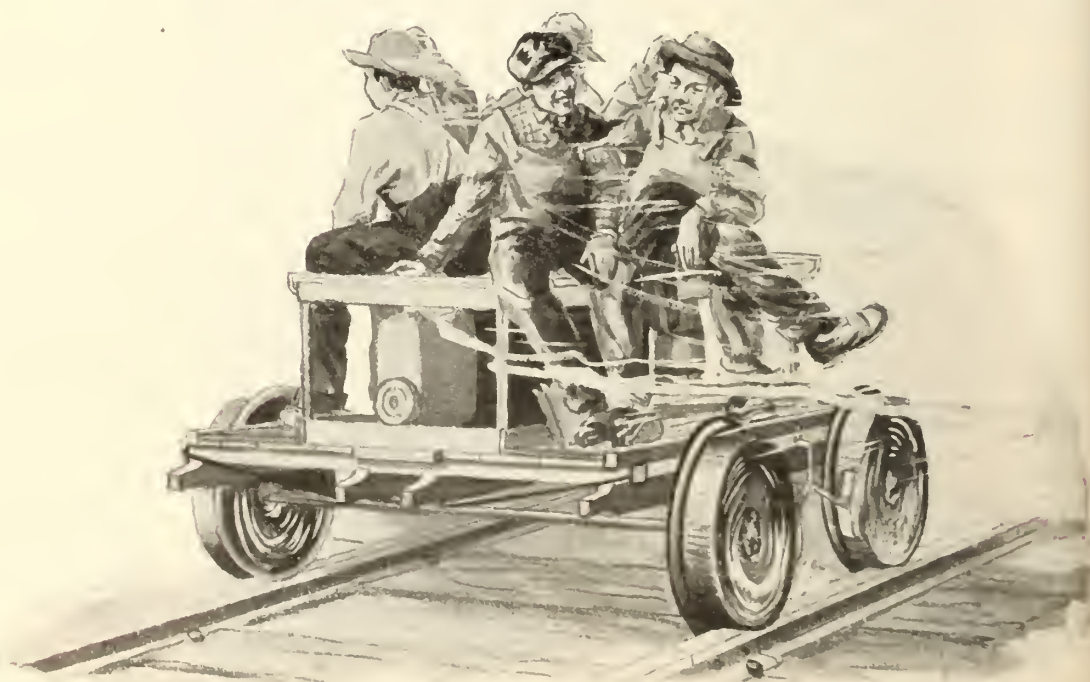
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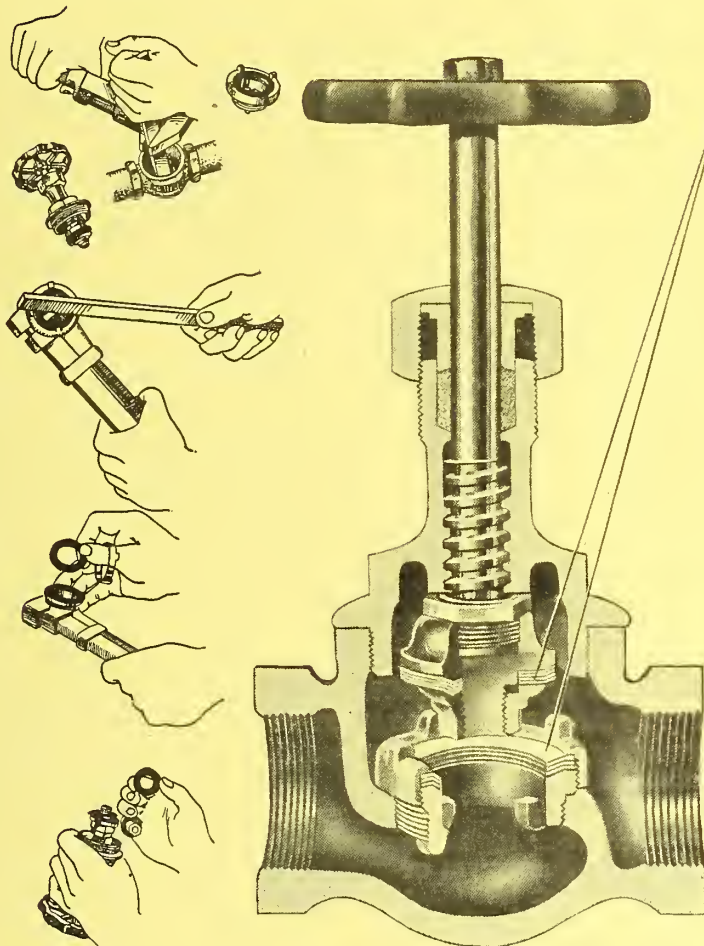
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By this method  
you do not take  
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To remove  
plates see cuts  
opposite.

### NOTE THESE PLATES

When the valve leaks,  
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This can be done till the  
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The service of pump valves depends upon the compounds as well as the consistency and cure of the valves. The compounds used in Garlock pump valves have been established after years of trial in actual service and under the most severe conditions. Pump valves should always be used for the purposes for which they are intended. The following are a few of our leading styles and grades of valves:

- |           |  |
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| " "       | 182—For warm or greasy water           |
| " "       | 108—For hot water                      |
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## The Garlock Packing Company

Hamilton, Ontario



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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 244

TORONTO, CANADA, JUNE, 1918

Subscription Rates, Page 253



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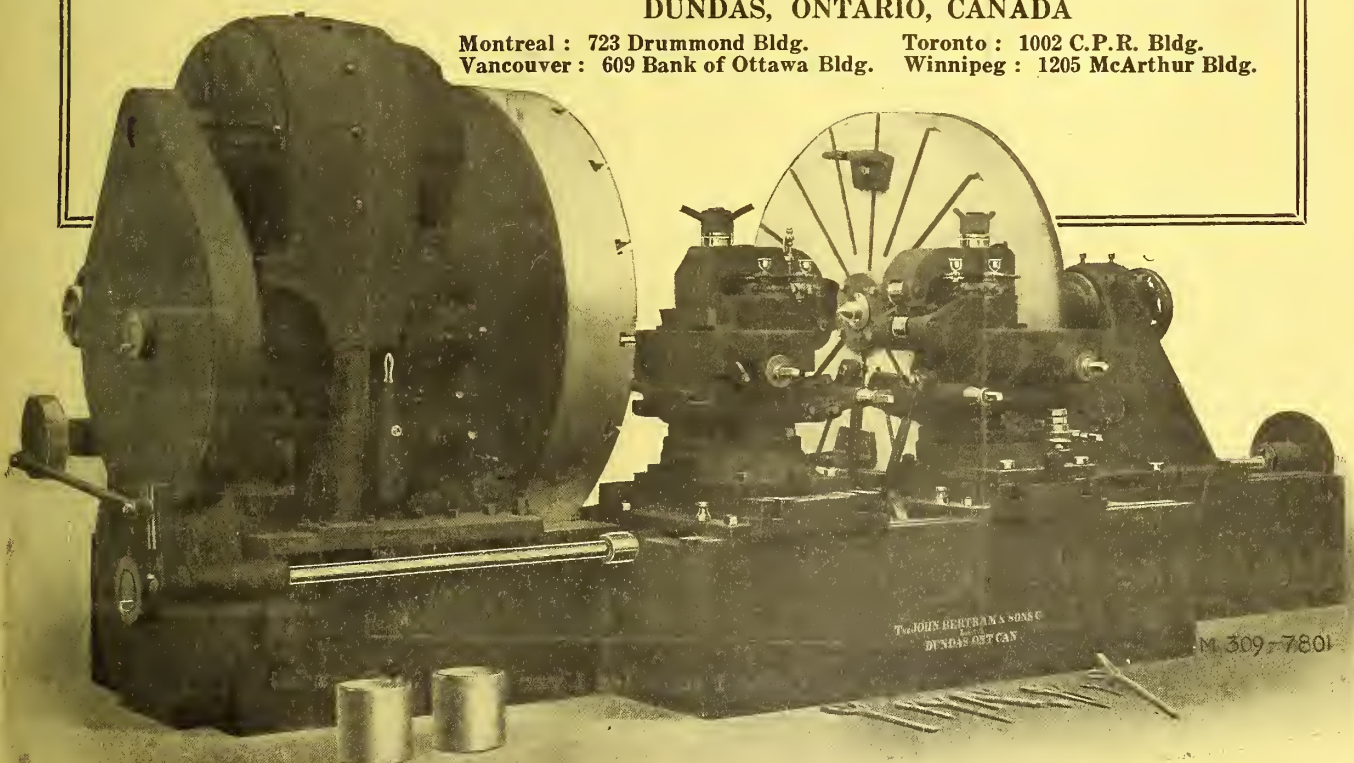
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Brownhoist Machinery for handling ore and coal have been used for 38 years, and can be found in many parts of the world. These many years' records prove them to be fast, safe and durable. You can depend upon them. Brownhoist Equipment may cost more, but is worth it.

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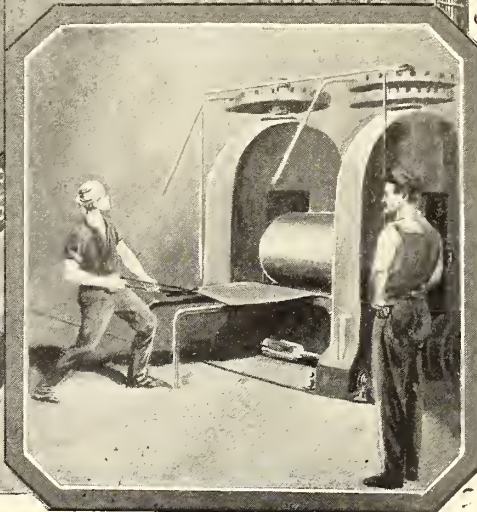
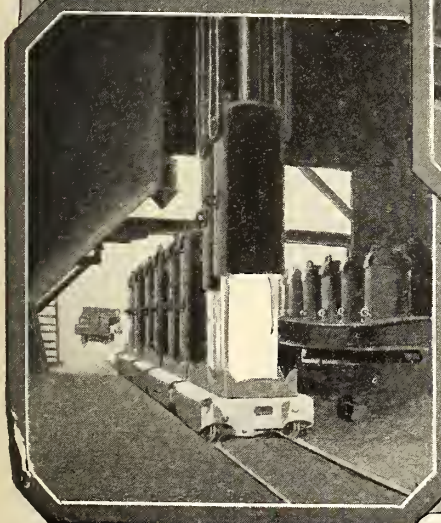
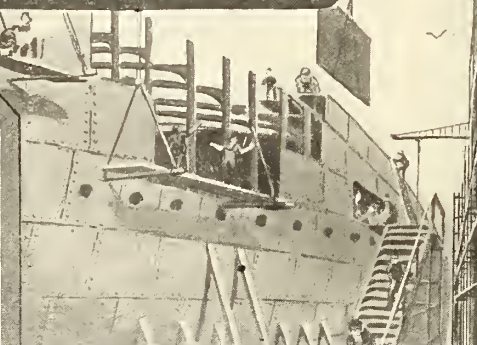
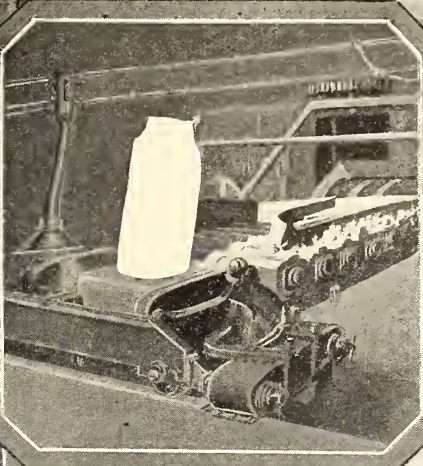
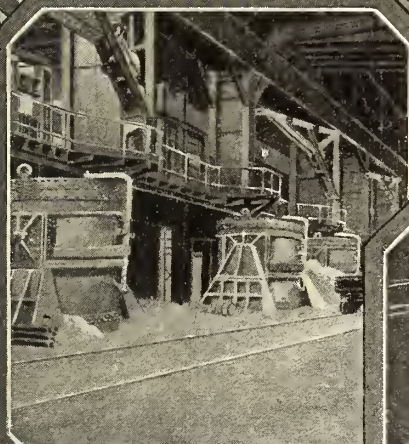
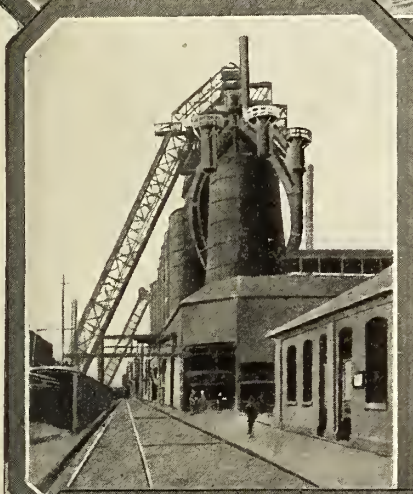
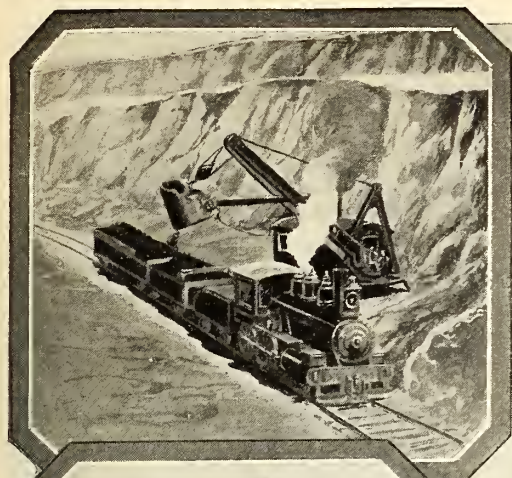
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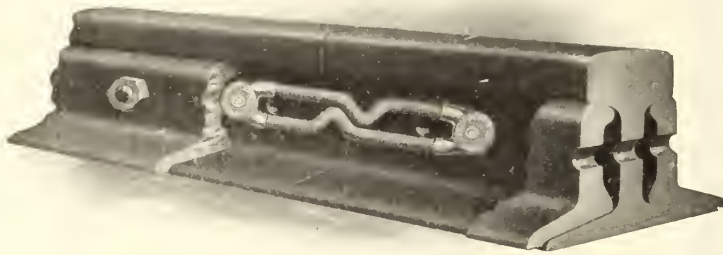
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## Neglected Bonding is Not Economy

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If your headlights and car lights are dim—*look to your bonding.* Poor bonding means inadequate lighting.

Now is the time to get the benefits and profits from good bonding.

O-B Bonds are good bonds and they are proving it every day on scores of properties.

*Prompt Shipment of any Standard Type.*

## The Ohio Brass Company, Mansfield, Ohio



# Cutting the Cost of Boiler Work

## What Water-Softening Has Done for Five Important Roads

With man power at a premium and greatly needed to wage the world war, it is anything but desirable to employ men at work that can be avoided with increased efficiency and profit to the employer.

Water softening has done for several roads what many are now in greatest need of—it has permitted the reduction of the boilermakers' force with a saving in the cost of boiler work and has relieved congestion of locomotives at terminals and roundhouses. In some instances the saving in boilermakers' and helpers' wages for one year alone has more than paid for the water softening plant installed.

Softened water was accredited by the Vandalia Railroad with a reduction from 30 to 14 in the number of boilermakers employed in their Terre Haute engine house—a saving which, at present prices of labor, would amount to about \$60.00 a day or \$21,900 in a year. The cost of boiler repairs was reduced 41%.

The P. & L. E. Railroad reduced their boilermakers' force nearly one half by using softened water. Instead of paying \$401.50 a month in boilermakers' wages, they paid only \$201.50 a month. They also reduced their boilerwashers' force and saved \$85.00 a month. The amount of business handled during the months compared was practically the same.

A water softening plant at Burr Oak near Chicago on the Rock Island line enabled this road to reduce their boilermakers' force 55%—from 6 to 3 during the day and from 3 to 1 during the night. The same number of locomotives was handled after the reduction as before.

\$15,000.00 a year was saved at a Missouri Pacific terminal roundhouse by the use of softened water. The boilermakers' force was reduced from 17 to 7.

The Baltimore & Ohio reduced its boilermakers' force at East Chicago from 10 to 6 and its helpers from 14 to 9 last year, saving over \$10,000 by doing so and attributing this saving to the use of softened water at their Harvey, Ill. water station.

It is hard to realize the great saving that may be affected by using softened water until reliable figures are presented showing the actual results. Remember that the above figures show **only the saving in boilermakers' wages**, which is a small part of the total savings resulting from water softening.

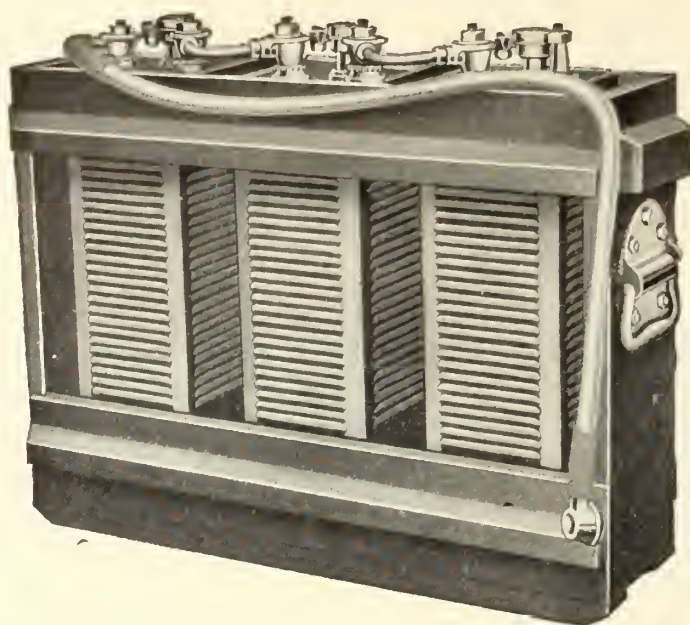
*All we ask is the opportunity to present to you, and your men who are interested, reliable data on water softening. Write us now.*

## Wm. Graver Tank Works

Railroad Department :  
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Works :  
East Chicago, Indiana





## 200 Edison Train Lighting Sets are in constant use on one of Canada's Largest Railways

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has never been so fully demonstrated as during the past year of government preparations and demands upon the foundries, steel mills, munition plants and the entire metal-working industry, and particularly in the great shipbuilding program.

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Atlantic Corporation  
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Oscar Daniels Co.  
Delaware Shipbuilding & Repair Co.  
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## **OF CANADA LIMITED**



Railway Operating Engineers, Manufacturers and Contractors  
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*We Manufacture in Canada the Following Equipment :*

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"Electroheat" Axle and Armature Shafts of all types and sizes. "Electroheat" Annealed Side Rods, Main Rods, Crank Pins, Piston Rods.  
All kinds of "Electroheat" Forgings, etc.

#### MORGAN CRUCIBLE COMPANY

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Carbon Brushes.

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PHILADELPHIA, PA.

The Reciprocating Track-Grinder.

#### THE TROLLEY SUPPLY COMPANY

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Trolley Retrievers, Catchers, Headlights and Street Railway Supplies.

#### WESTINGHOUSE ELECTRIC AND MANUFACTURING CO.

PITTSBURGH, PA.

Trolley and Catenary Construction Material.

We also handle electric passenger, freight, and express cars and locomotives of all types and descriptions.

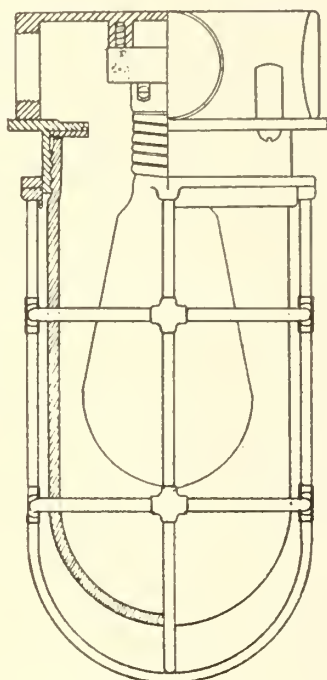
Keep this list before you whenever you are in the market for equipment and supplies.

All engineering service without obligation. List will be continued in next issue.

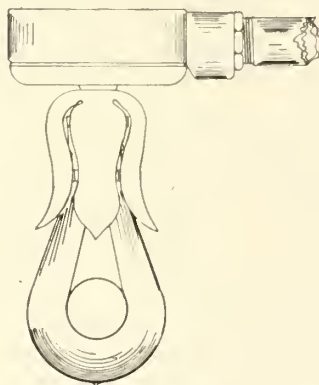


# MARINE

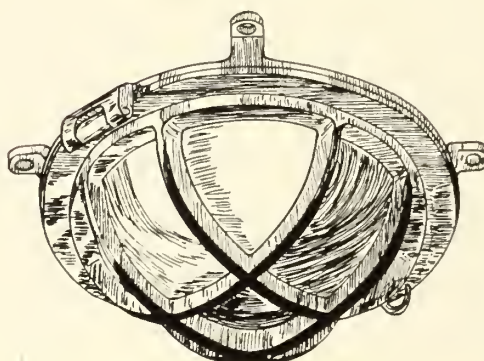
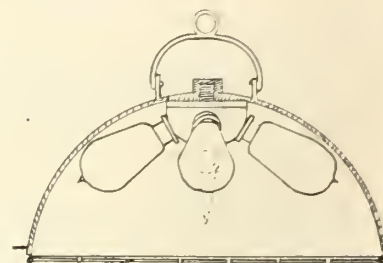
## Electrical Fixtures and Fittings



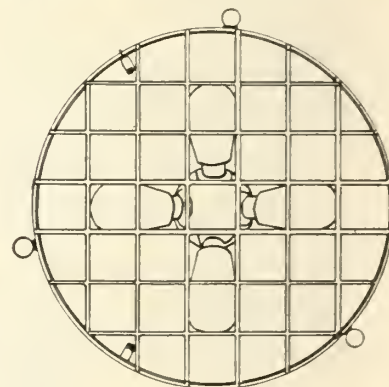
Watertight Pendant



Cabin Pendant



Watertight Deck Fixture



Cargo Cluster

High grade, strongly constructed Marine Fixtures and Fittings furnished in various types including Watertight Lighting Fixtures.

☐ A few of our standard lighting fixtures are illustrated herewith.

☐ Let us quote you on your requirements for Electrical Marine work. If you require special fixtures and devices send drawing or sketch and we will gladly quote on same.

*Address nearest house for quotations and information.*

***Northern Electric Company***  
LIMITED

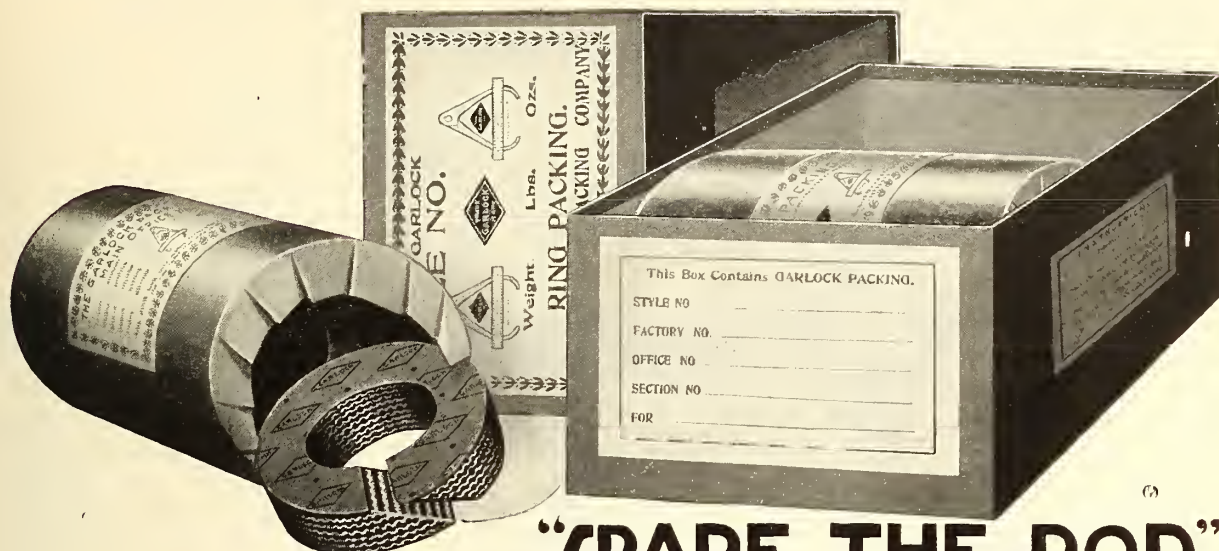
Montreal  
Halifax  
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Toronto  
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# GARLOCK PACKINGS



## "SPARE THE ROD"

Dust and grit are as injurious to piston rods as inferior and poorly lubricated packing. All styles of Garlock Ring Packing are enclosed in press-board tubes and are packed in cartons that are practically dust proof, which not only prevents accumulation of dirt and grit on the packing but likewise prevents drying out of the lubrication.

On the blank lines of the label attached to the end of each box of Garlock Packing are entered the name of the rod for which the packing is intended and the order numbers, section number and style number of packing, which enable a customer to reorder a box of packing without remeasuring the rod and without likelihood of making mistakes in specifications.

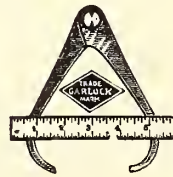
*Our packings are billed at net weights ; the weights of boxes and tubes are not included.*

## The Garlock Packing Company

### Hamilton, Canada

#### BRANCHES :

Montreal, Quebec	-	-	-	409 Shaughnessy Building
Toronto, Ontario	-	-	-	404 Continental Life Building
Winnipeg, Manitoba	-	-	-	Galt Building



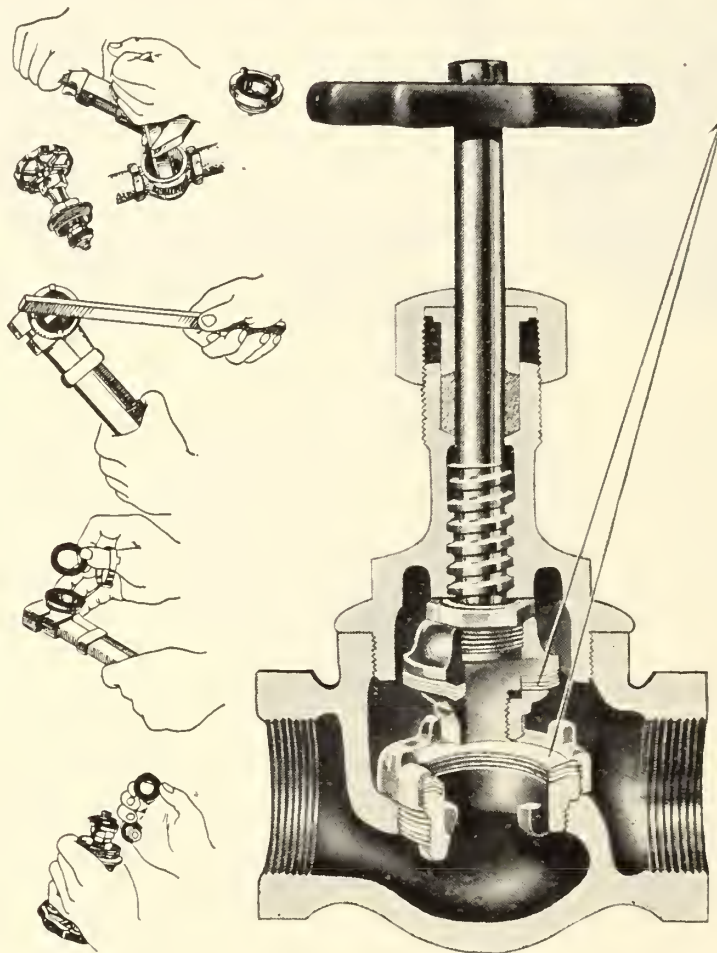


# MULTIPLATE

## "Valve Service"

By this method  
you do not take  
the valve out of  
the pipe line.

To remove  
plates see cuts  
opposite.



### NOTE THESE PLATES

When the valve leaks,  
simply take off the first  
pair of plates and throw  
them away; tighten up  
the other parts, and the  
valve is as good as new.  
This can be done till the  
plates are used up, then  
re-fill with new plates.  
No grinding.



*Canadian Manufacturers*

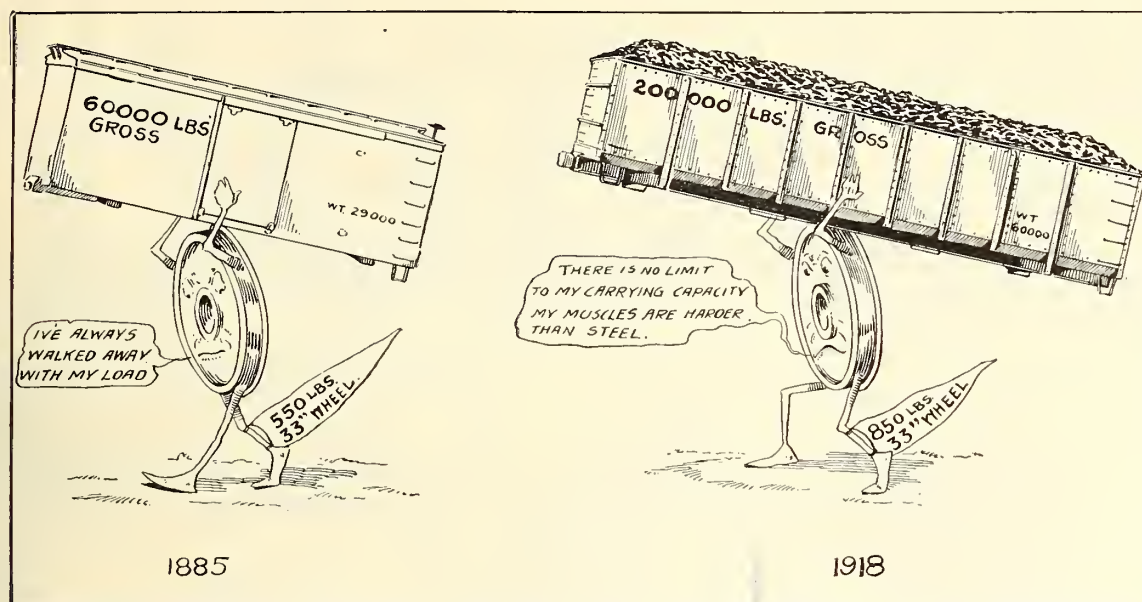
**CANUCK SUPPLY CO., LIMITED**  
**MONTREAL**

TORONTO

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IT'S THE CHILLED IRON CAR WHEEL THAT'S CARRYING THE FREIGHT OF THE NATION.

## The Wonderful Single Service Chilled Iron Wheel

There is no metal used for car wheel purposes that possesses the BEARING POWER of Chilled Iron.

The loads that Chilled Iron wheels will carry are only limited by the carrying capacity of the rail.

The present type of rail will carry about 30,000 lbs. per wheel.

Chilled Iron will carry 200,000 lbs. per wheel without any evidence of distortion of Metal, because Chilled Iron will not crush or flow under heavy loads.

25,000,000 Chilled Iron wheels now running.

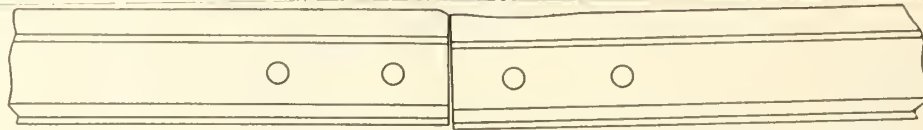
## Association of Manufacturers of Chilled Car Wheels

Representing Fifty Wheel Foundries Located Throughout the United States and Canada—  
Capacity 20,000 Car Wheels Per Day.

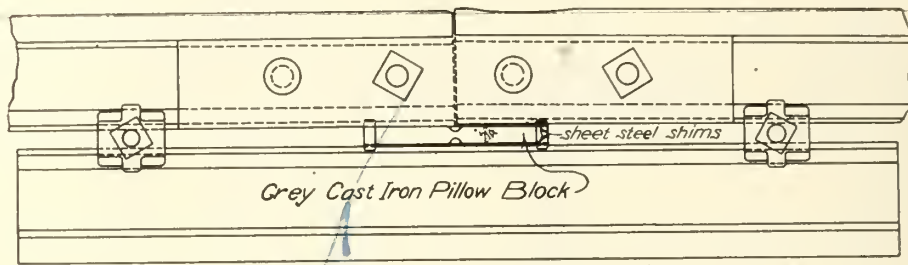
1229 McCormick Building, Chicago



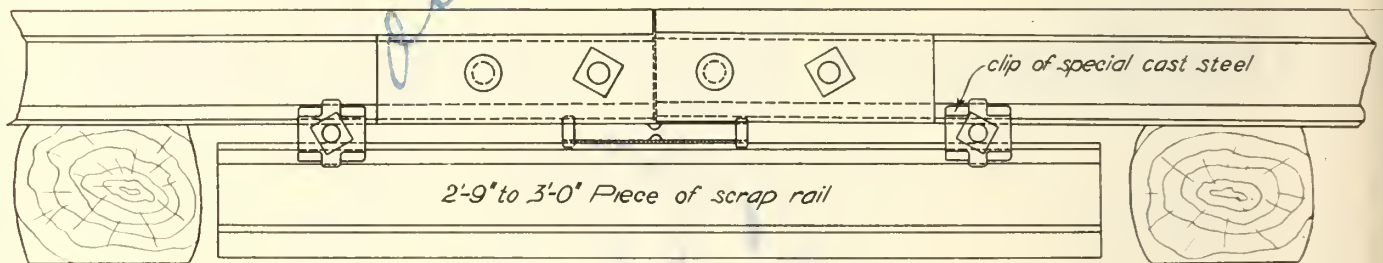
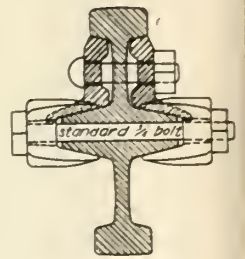
# SAVE YOUR RAIL



*Position of cupped and depressed joint with plates removed before lifting*



*Position of cupped and worn joint after being lifted and made ready for grinding*



*Position of joint after grinding*

Trussed Rail Joint, London Street Railway.

Old fish plates or angle bars must be changed from side to side or made smaller so as to permit the lifting of one rail as shown. Plates are needed in this joint to hold the rails in line only, so that common bar irons may be used as fish plates. Insert, under pillow block casting, a steel shim, thick enough to raise the least worn rail so that when ground off the end will have a sharp corner. Insert on top of pillow block casting, and under cupped rail only, a steel shim of proper thickness, so that when ground off the cup has disappeared. To make a level joint, when no grinding is necessary, no steel shims are necessary. Should the joint be inclined to rise above the level, break a pillow block, and insert one half outside the clips, at ends of truss rail, as shown by dotted lines. In case of rail with a very thick base, a smaller diameter bolt, and a proportionately thinner pillow block, must be used.

## Pull Up Low Joints—Make the Lurches Only Clicks

OR GO FURTHER BY GRINDING AND

## Make the Rail as Good as New

We make the SPECIAL CAST STEEL CLIPS, as successfully used for several years by THE LONDON STREET RAILWAY COMPANY.

YOU CAN SUPPLY ALL ELSE.

# The Wm. Kennedy & Sons, Limited

OWEN SOUND, ONTARIO



# DODGE

## WOOD SPLIT PULLEYS

**Every Day 300  
Dodge Wood-Split Pulleys  
Are Made**

And every day about 300 are sold.

Not so much because the selling organization keeps our output moving, but because the downright efficiency of the Dodge Wood Split Pulley has made it standard equipment.

It is lighter, stronger, better balanced and provides a better belt service than any metal pulley that ever was made. It costs 50% less to buy and provides 50% more returns in horse power value. And it may be run at higher speeds than metal pulleys without danger of bursting.

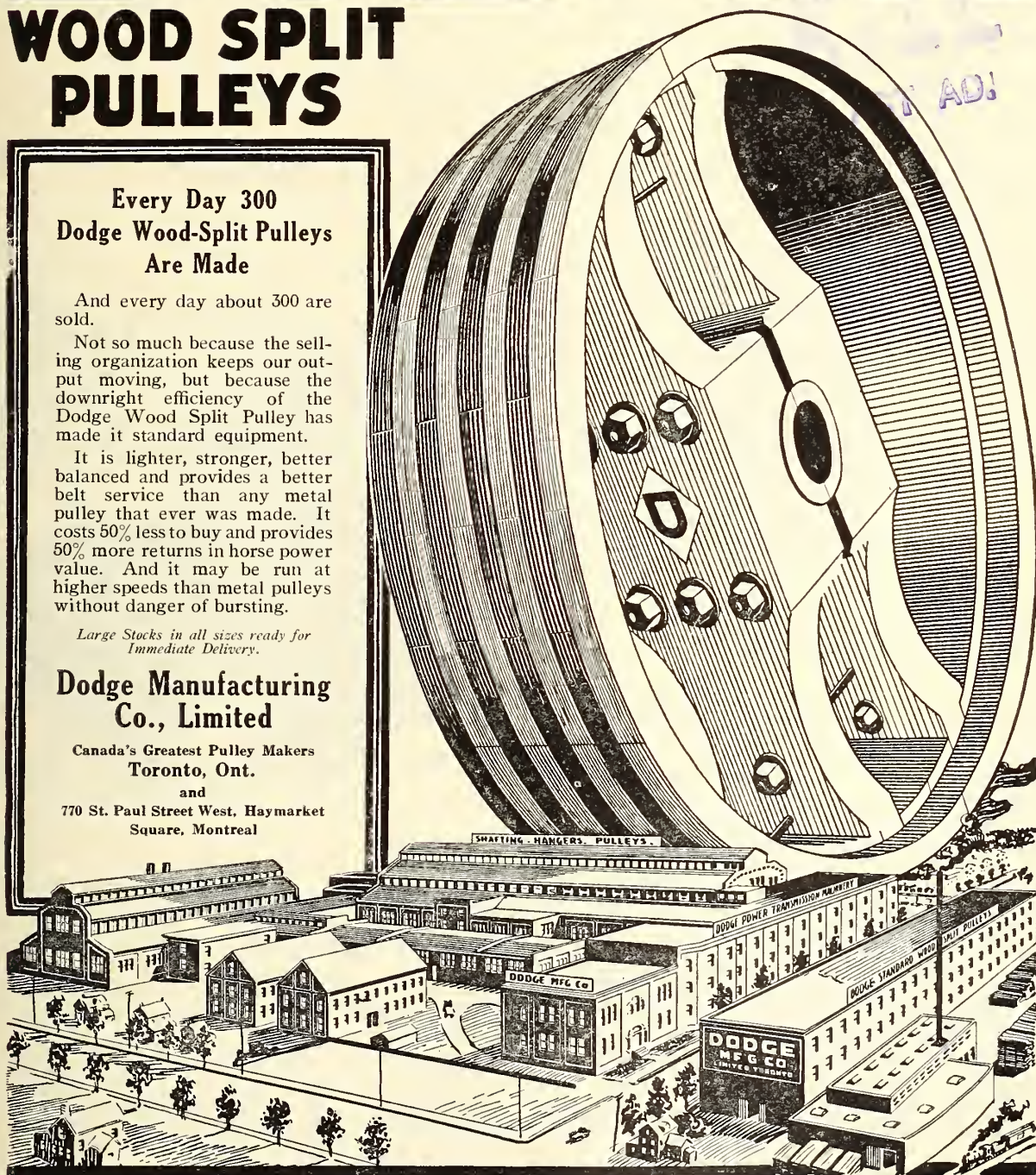
*Large Stocks in all sizes ready for  
Immediate Delivery.*

**Dodge Manufacturing  
Co., Limited**

Canada's Greatest Pulley Makers  
Toronto, Ont.

and

770 St. Paul Street West, Haymarket  
Square, Montreal





*Made in Canada*

## Patent "Duplex Gong" Telegraphs

Telegraphs for Engine, Twin  
Engine, Stokehold, Steering  
and Docking.

Engine Room Indicators (Speed)

Engine Counters

Chadburn's (Ship) Telegraph Co'y, Ltd.  
Bootle, England

*Sole Canadian Agents*

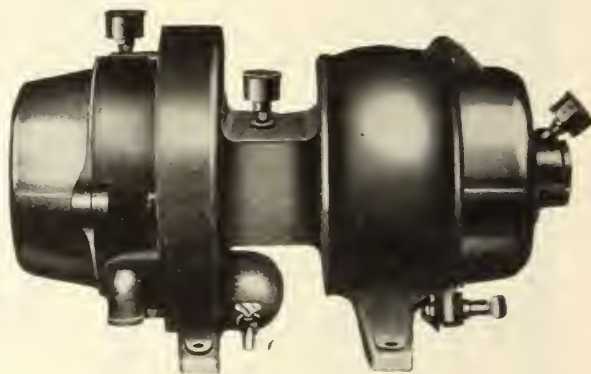
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## The "Taynold" Incandescent Electric Headlight

*Made in Canada*

An Incandescent Headlight that complies with every railroad requirement in every province of Canada. A headlight that has proved efficient and economical.

# Taylor & Arnold, Limited

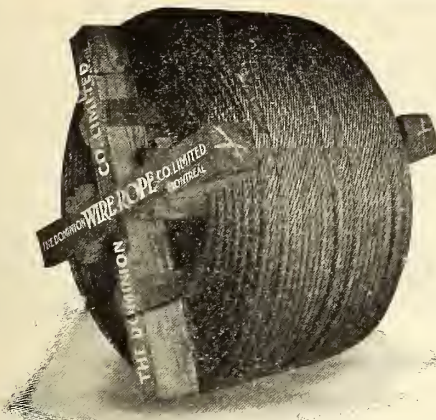
Manufacturers of Railway and Marine Specialties

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If you want a **WIRE ROPE**

Which embodies  
Strength, Elasticity and  
Toughness

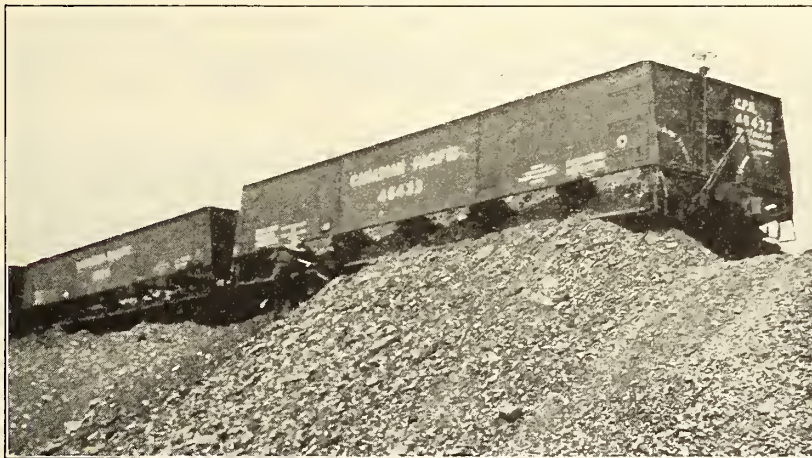
Buy **"DOMINION"**

The **DOMINION WIRE ROPE Co., Limited**  
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## General Service Cars

—Otis Dump Cars—

Built in  
Box  
Gondola  
Stock and  
Ore Cars



For  
Standard  
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Special  
Service

**The HART-OTIS CAR CO., Limited, MONTREAL**

—SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA—

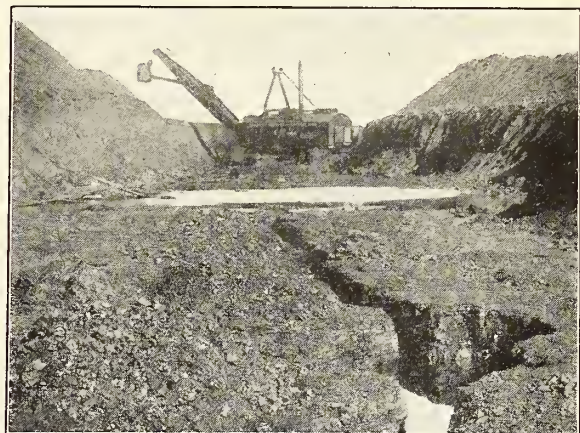
**"MARION"** EXCAVATING  
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FOR ALL CLASSES OF EARTH,  
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RAILROADS

Let Us Quote For You

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# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

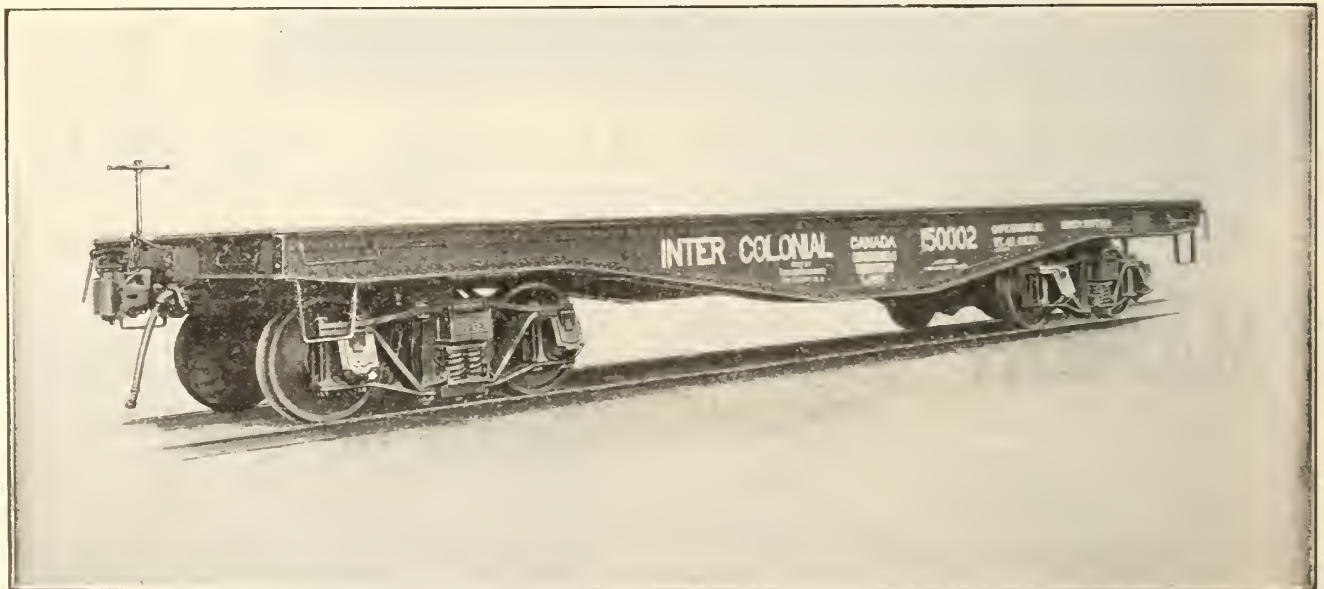
Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

*For prices and particulars write to*

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75 on Special Pit Car For Canadian Government Railways.

## FLAT CARS, CABOOSES AND MINE CARS

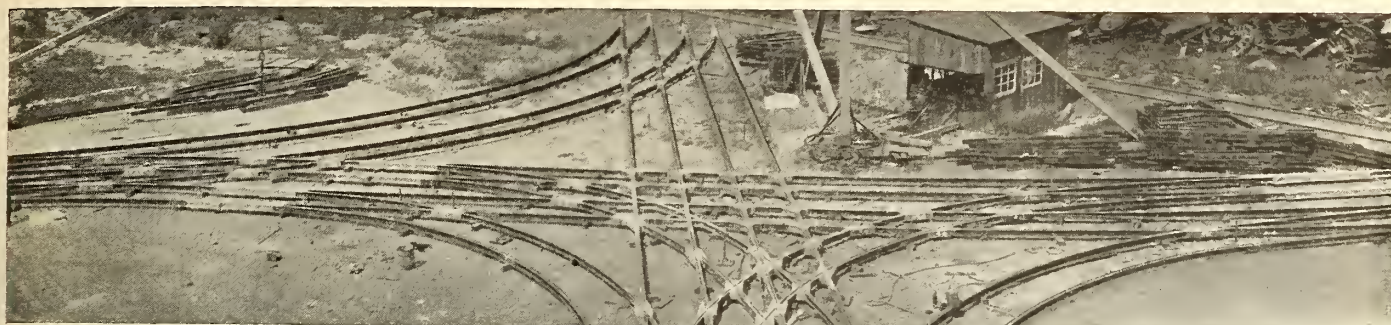
We make a specialty of Flat Cars, Caboose and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

## Eastern Car Company, Limited

**General Offices and Works, New Glasgow, N.S.**

**Montreal Office, Room 14 Windsor Hotel**





# MANGANESE TRACKWORK

*for*

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## CANADIAN STEEL FOUNDRIES, Limited

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COLLINGWOOD—ONTARIO—CANADA

## Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



S.S. REGINOLITE

Two Dry Docks  
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EQUIPPED TO  
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Day or Night  
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## INSPECTION

that really inspects.

Every Famous Five File that leaves our works is mechanically perfect.

The steel itself is carefully inspected when it comes to us from the mills.

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That is why every file is mechanically perfect when it leaves out works.

And that's why it pays you to specify them when ordering.

**Kearney & Foot    Great Western  
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*Made in Canada by*

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PORT HOPE                      ONTARIO

**50  
YEARS  
IN THE  
BUSINESS**

**OVER  
60,000,000  
FILES  
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## Port Arthur Shipbuilding Co., Limited

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*Designers and Builders of*

**STEEL SHIPS — BOILERS — ENGINES, Etc.**

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

**Dry Dock — 700 ft. x 98 ft. x 16 ft.**



PLANT AT PORT ARTHUR, CANADA

In Stock for Immediate  
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Several 1st Class, New

**CLAM SHELLS**

1½ and 2 yards.

**4 HOISTING ENGINES**

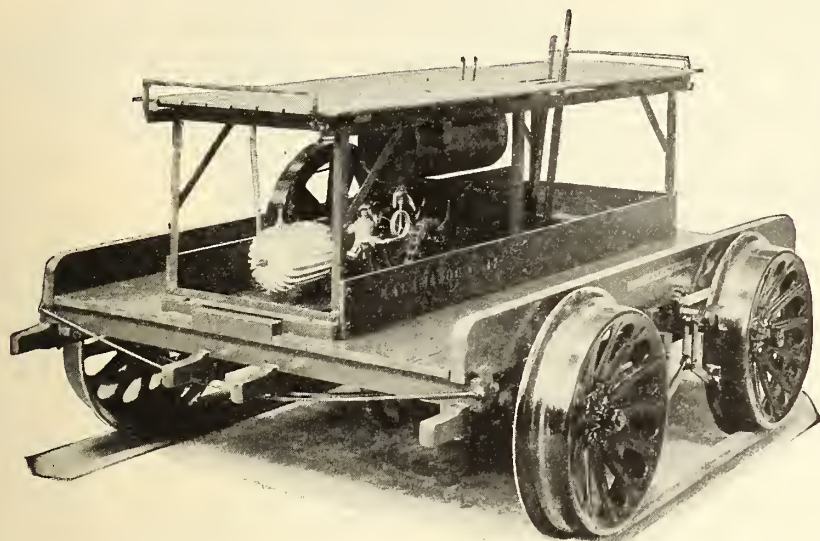
8¼ in. x 10 in.—with  
Boilers.

Head Office and Plant

**Port Arthur, Ontario**



# Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose

and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

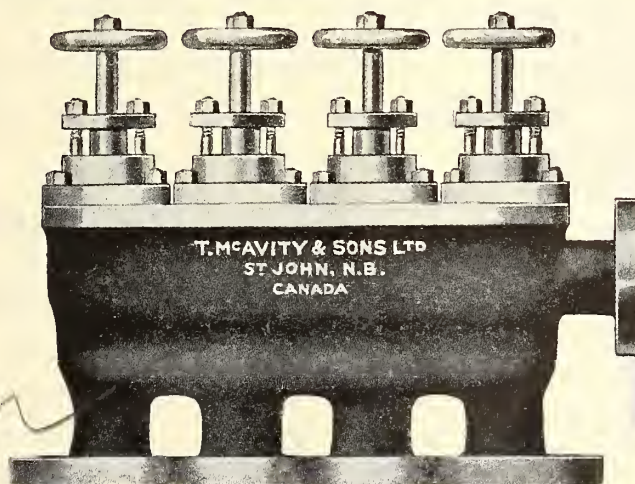
## Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.

# SPECIAL MARINE VALVES

**BRASS**

All Kinds  
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MARINE  
Specialties  
To Order



MANIFOLD VALVES

**IRON**

TO PASS  
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## T. McAvity & Sons, Limited

Brass and Iron Founders  
**ST. JOHN, N.B.**

Established 1834

Incorporated 1907





**PREPAREDNESS**—Many of our customers have been applying large numbers, and in some cases complete installations, of Tate Flexible Staybolts to their locomotive fireboxes, and thus are prepared to handle the heavy business during the present season.

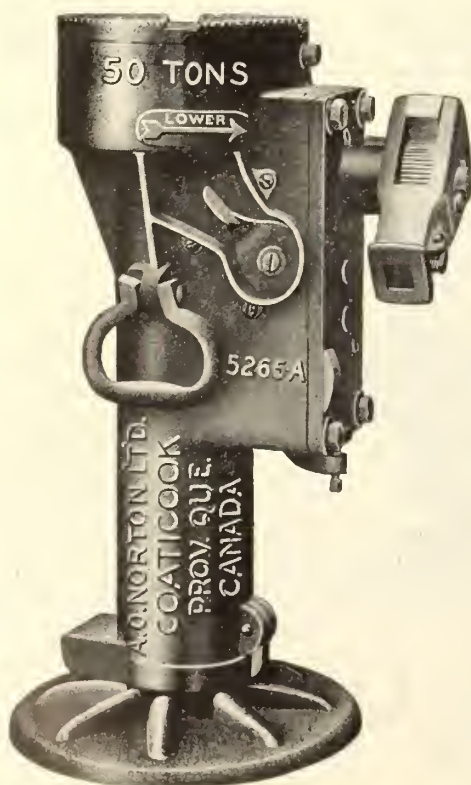
**THE TATE FLEXIBLE STAYBOLT** has been used quite extensively since 1904 in the locomotive fire boxes, and its service records all go to prove that it has done more to improve conditions of staying and preserve the life of the firebox than any staybolt so far used.

**WE RECOMMEND THIS BOLT** to the railroads of Canada and to all users of the firebox type of boiler where staybolts are necessary, with the assurance that it will be found strong, serviceable, economic and most effective in reducing staybolt breakage and firebox repairs.

OVER 16,000,000 BOLTS IN SERVICE.

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

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For all Classes of Service

**10 to 100 Tons Capacity**

**In Stock for Immediate Shipment.**

*Send for Illustrated Catalogue No. 29.*

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Stock Carried by Canadian Agents: **MUSSENS LIMITED**  
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The "STERLING" Blade is a brand of highest quality, and is known the world over for its efficiency and economy. The best steel that can be procured is used in their production, together with skilled workmanship of many years experience, enabling us to give the trade a strictly first class blade. They are made in all lengths and widths from 8 by  $\frac{1}{2}$  inches to 36 by 2 inches inclusive, and in gauges to give best results, varying pitch of teeth to suit the job.

Money invested in "STERLING" Blades will give you full returns.

*Write for catalog and particulars.*

**Diamond Saw & Stamping Works, Buffalo, N.Y. U.S.A.**

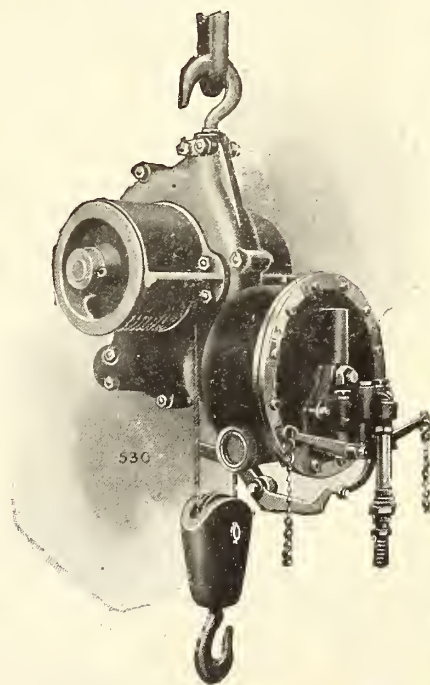
## No More Hoisting Troubles

Wherever a strong, dependable hoist is needed there the "Imperial" motor driven hoist fills the bill.

### Few Parts Mean Durability

#### The "Imperial" Hoist Has Few Parts

The motor is thoroughly balanced and the sensitive control allows the load to be raised or lowered a fraction of an inch at a time. Thorough lubrication and interchangeable parts. Bulletin 8006.



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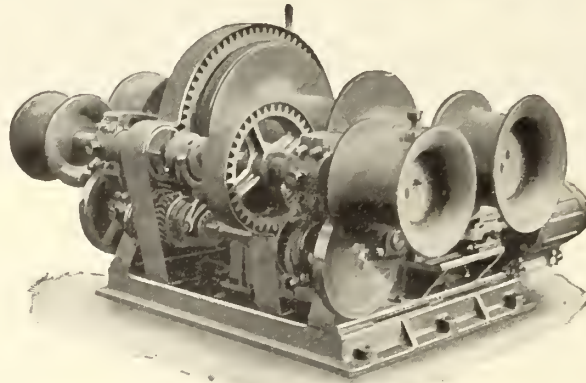




# "BEATTY"

**Cargo Winches, Anchor Windlasses, Ash Hoists, Etc.**

Have just finished a big order for Winches of this type, Ash Hoists, etc., for ships being built in Canada.



Are now engaged on a larger contract for machines of slightly different design for other interests.

7 x 12 Standard D. C. Double Purchase Cargo Winch

We have a few winches exactly like above, which can be spared for immediate shipment.

*Let Us Have Your Inquiries. We Can Interest You.*

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### Industrial Expansion

is easily, quickly and economically taken care of by PEDLAR'S "PERFECT" PORTABLE STEEL BUILDINGS.

When you want a building for any purpose and want it immediately, put up a Pedlar Steel Building. We can supply you with portable Steel Buildings in interlocking sections, all ready to erect, any size you require, with wired glass windows, doors and ventilators ready to place in position.

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"With one of the new engines we were taking a train of meat through on passenger train schedule one night last week, and the engineer said it would be necessary to head in at . . . . . to clean the fires. I suggested that he stop on the main track at . . . . . and while he was taking water I would clean the fires. Before he was through I had the fires in A-1 condition and thereby avoided at least twenty minutes delay, and the possibility of having to finish our trip on the freight track, thereby losing our rights. This could not have been done without the Franklin Steam Grate Shaker."

Franklin Railway Supply Company of Canada, Limited  
Transportation Bldg., Montreal

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**That's Why 480 Railroad Shops Are Using Thermit**

Thermit offers the only sure and reliable repair for locomotive frames and other heavy sections.

The superheated liquid Thermit steel is produced in bulk and poured all at once into a mould surrounding a broken section, resulting in the perfect amalgamation of the Thermit steel with the parts with which it comes in contact. The fact that those parts are first pre-heated, makes the weld doubly sure.

The operation of welding locomotive frames is easily accomplished, without removing the the frame from position, and with very little dismantling, no matter if the frame be broken in the splice, jaw, next to the cylinder saddle, or at any other point. The engine is returned to service in from ten to twelve hours.

Hundreds of thousands of pounds of Thermit are being used annually by railroad companies in United States and Canada.

There is only one reason for this, and that is that Thermit produces results and we all know that "results count."

Our pamphlet No. 2144 will be of interest.

All Thermit and Thermit appliances are made in our Canadian shops.

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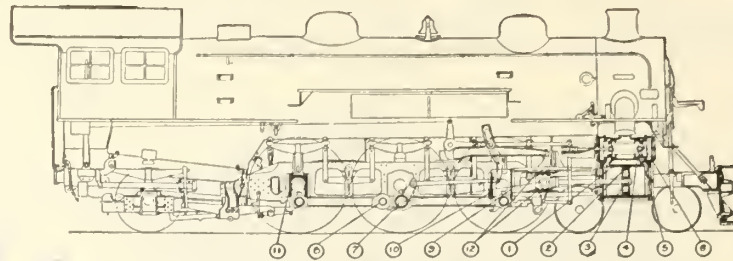
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7. Side Rod Bushings
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9. Pedestal Shoes
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**KILL**

For 12 of the Principal Parts of a Locomotive

**LABOR**

Is ~~hard~~ to obtain during these prosperous times.

We can help you to reduce the amount of labor needed and at the same time increase the efficiency of your machines in the shop and locomotives on the road.

USE  
**HUNT SPILLER GUN IRON**

*Made Only By*

**Hunt-Spiller Manufacturing Corporation**

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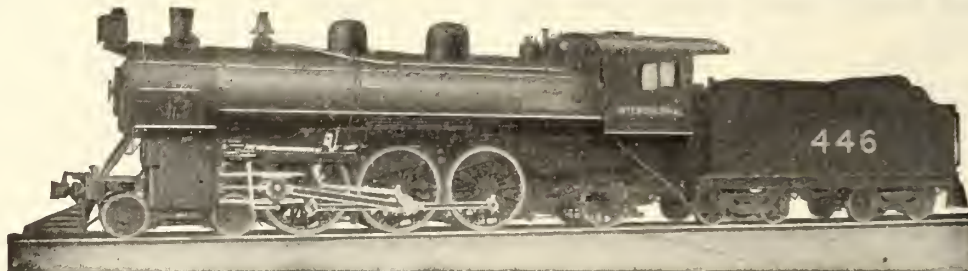
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J. G. PLATT, VICE PRES. AND SALES MGR.

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Canadian Representatives : Canuck Supply Co., 418 St. James St., Montreal, P.Q.

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Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

## Montreal Locomotive Works, Limited

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Commercial Acetylene is to be found in many such plants in all parts of Canada and the United States.

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Makers of Manganese Bronze Propellers, Large Marine Engine Cylinders,  
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MARINE RAILWAY, CAPACITY 2500 TONS DEAD WEIGHT

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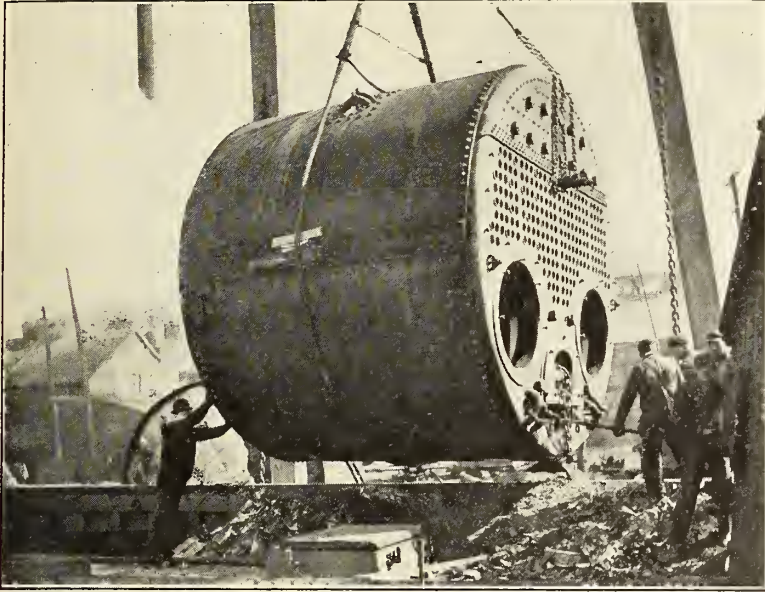
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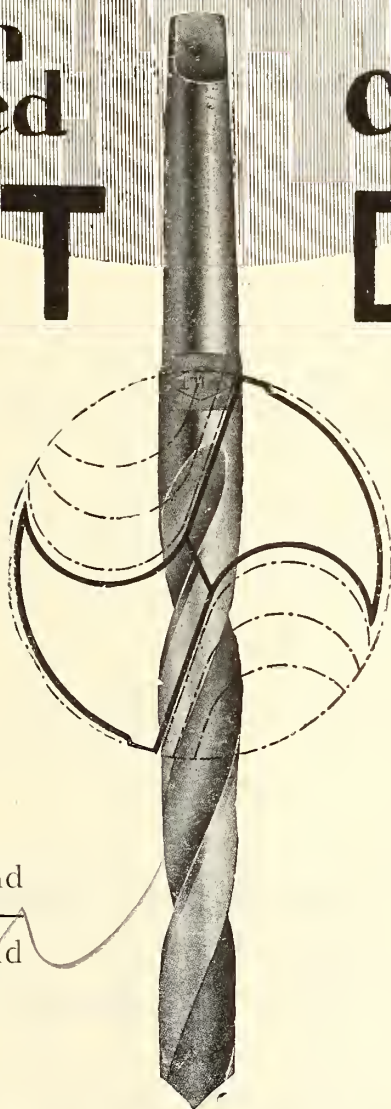
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# Canadian Railway and Marine World

June, 1918

## Freight Brake Maintenance.

By F. B. Farmer, Northwestern Representative, Westinghouse Air Brake Co., St. Paul, Minn.

My first purpose in this paper is to show that freight brake maintenance is generally unsatisfactory; next to show why; and then to suggest how to improve it. As is generally known, the Westinghouse Air Brake Co. maintains a large, selected and trained organization for the special purpose of co-operating with customers in obtaining good and economical installation, maintenance and operation of brake equipment. Several years ago, while two of us Westinghouse men and two railway air brake experts were giving particular attention to reducing freight train break-in-tuos, we became convinced that freight train brakes in interchange service were not being maintained as well as the needs and the time and money spent on them would warrant, but to effect an improvement the proof and the causes were required.

The proof of unsatisfactory conditions was finally obtained at a "dead line" division point on a road where, to control an increased tonnage safely, and without aid from hand brakes, down a subsequent steep, descending grade, it was required that at this terminal all brakes in each freight train must apply with the ordinary terminal test application of a 20-lb., continuous service reduction from 70 lb., and that none leak off entirely during the period of inspection. As this application should produce approximately 50 lb. in every brake cylinder; as brake pipe leakage causes more to be fed in from the auxiliary reservoirs during the inspection, as the inspection is finished ordinarily in 12 to 14 minutes; as 1 in. recession of piston travel means the loss of all effective holding power; as 5 or 6 lb. in a brake cylinder will hold the brake cylinder in applied position; as no test of the retaining valves was included; and as no brake was considered ineffective unless entirely off when inspected, it will be appreciated that this test requirement was very moderate, yet, when the rule was first put in force, and although division terminals in advance of this one did more brake cleaning than before, 10 to 12% of the cars had to be set out for brake repairs.

The even more disturbing feature noted was the short time since a large proportion of these defective brakes had, as indicated by the stencils, been supposedly put in good condition. This was in 1913. That you may appreciate not only how bad the situation was, but also the great possibilities remaining after two years of special and unusual work done to improve it, as described later, please see table 1, which shows, out of the total ineffective brakes set out and repaired at the "dead line" point for July of three years, the number of such bearing system stencils, and the elapsed periods since they had supposedly been put in good order. System-cleaned brakes only were taken, because we were seeking to improve the work on this particular road. The foreign-cleaned brakes on it showed a much worse condition. In fact, a check made in Oct. and Nov., 1917, of freight trains yet uninfluenced by steep grade conditions,

the latter resulting in improved brake maintenance, showed that of 1,103 system cars 14.1% had defective brakes, as compared with 25.3% on 659 foreign cars.

aged 22 lb. or 44% of a full service application.

Regarding the present general condition of freight brakes in interchange ser-

Table 1—Brakes Cleaned at "Dead Line" Point.

July	System Stencils	% system work recleaned in months.											
		1	2	3	4	5	6	7	8	9	10	11	12
1913	596	21.3	35.7	44.7	51.9	56.9	63.0						
1914	823	18.9	28.1	36.2	43.0	48.2	52.6	58.4	65.1	76.1	84.9	93.5	96.9
1915	630	8.8	16.1	23.8	30.9	36.3	44.6	47.7	54.1	65.2	75.7	85.4	95.4

In this tabulation the average car months since previous brake cleaning were 6.6 for 1914 and 7.1 for 1915, a gain of 7.5%. But these brakes had not suddenly become inefficient. Hence, with more "dead lines," which would have caught the defective brakes sooner, these averages would have been lower. Even so, note in 1913 that 44.7% of the defective brakes were inefficient three months after cleaning; that this was 23.8% in 1915; and that with but one "dead line" and it operating in one direction only, less than 5% had run over 12 months.

Although a special effort was made in 1914 to improve conditions, and in spite of the encouraging results shown in table 1, a gauge test for brake cylinder leakage made at various division terminals in 1915 on 164 freight brakes showed that of 52 tested immediately after cleaning 46.1% leaked down over 5 lb. in one minute. The customary method of lubricating had been followed, this including filling the expander space, next to the inside of the packing leather, with the lubricating grease. As this temporarily stops or reduces leakage through a defective packing leather, the unfavorable results stated were minimized.

As illustrating this feature, a special gauge test was made of a packing leather, that the average cleaner would judge by inspection to be good, but which we had found to be very porous. With a dry surface on the expander side and a lubricated cylinder wall it leaked 38 lb. from 50 lb. in one minute. This was reduced to 7 lb. leakage by filling the expander space with lubricant. After being under pressure of from 50 lb. down to about 30 lb. for 90 minutes, representing not over 2 or 3 days' ordinary service, the leakage had increased to 37 lb. The lubricating grease on the porous portion had been forced through the packing.

Reverting to the gauge tests, 12 brakes just cleaned leaked up over 3 lb. from 50 lb. in one minute, due to faults in the triple valves or their gaskets. A limit of 3 lb. should certainly not be exceeded. From this cause and excessive cylinder leakage 40.6% of these 64 brakes were defective immediately after cleaning. The average leakage was 8.4 lb. A gauge test of 76 brakes that, caught at random in 1915, had run from one to three months since cleaned, showed the following leakage from 50 lb. in one minute:

71.0% leaked over 5 lb.  
59.2% leaked over 10 lb.  
40.7% leaked over 15 lb.  
21.0% leaked over 20 lb.

The 50.2% that leaked over 10 lb. aver-

vice, thorough terminal tests and inspections made personally by the four of us air brake men on freight trains in transit during Oct. and Nov., 1917, covering 51 trains far removed from mountain grade service and 26 others ready for or having recently come down steep, descending grades, indicated a very noticeable improvement in the brakes of the 26 trains, as compared with 1915, but absolutely none in the others. The 51 trains had 2,276 cars, and 14.1% of these cars had inefficient brakes. This emphasizes the statement in the report of the Chief of the Bureau of Safety to the Interstate Commerce Commission for the year ended June 30, 1917, that: "The maintenance of the air brakes to the point of maximum efficiency is a consummation to be striven for by all carriers, regardless of whether the grade on a particular line of road demands such efficiency in the ordinary movement of trains. Level roads should maintain their air brake equipment to the same degree as those having steep mountain grades."

Causes for unsatisfactory condition.—As will doubtless appeal to you, the "dead line" data for 1913 (see table 1) gave ample proof that freight brake maintenance was very unsatisfactory, but we required the causes to effect a betterment. It may be said, in passing, that "cleaning with the stencil" was not an explanation. After failing in an attempt to learn the causes by having brake cleaners report their findings, the four of us in 1914 took our over-coats, wrenches, and test gauges and spent six weeks working with the brake cleaners at the various division terminals. We made gauge and soap suds tests of a large number of brakes, including those just cleaned and others that had run for various periods. With each brake found to have over 5 lb. brake cylinder leakage per minute from an initial pressure of 50 lb. we personally located and remedied the faults, thereby instructing the accompanying, local brake cleaners. Other existing defects were treated similarly. The Air Brake Association recommends that no newly repaired brake be considered satisfactory until it will pass the above cylinder leakage test, as well as other tests. This work disclosed such opportunities for betterment that we repeated it in 1915 and 1916. It has convinced me that large roads should have a special man giving it regular attention, as more particularly referred to later.

The more common causes for brakes failing to apply or leaking off quickly, as indicated by tables 1 and 2, are, in the order of their estimated proportions:—



1. Defective brake cylinder packing leathers, due to being worn, cracked, cut, porous, off center and applied reversed.
2. Loose brake cylinder piston follower nuts.
3. Dry and dirty brake cylinders.
4. Expanders out of place or not fitted.
5. Release valve or "bleeder" leakage.
6. Pressure cylinder head gasket leakage.
7. Cylinder pipe leakage with detached equipment. The last mentioned is usually due to no provision for reasonable flexibility in the pipe, and to the cylinder moving when the brake is applied and released. On roads handling much of such equipment this cause for defective brakes will be relatively much more prominent.

In addition to the ineffective brakes due to the foregoing causes, as disclosed by terminal brake tests, are others resulting from:—8. Bad order brake rigging, such as rods broken, due to being cut by axles or to flaws, broken brake hangers and beams. 9. Good order brakes received cut out and left so without test, or cut out on the trip for insufficient reason, all uncarded. 10. Leaks at or near branch pipe connections to triple valves (requiring cutting out), due to shifted main brake pipes or to brake cylinders and auxiliary reservoirs being loose at the bracket connections. 11. Piston travel over 10 in. (U.S. Federal rules designate such as ineffective brakes.) As regards brake beams, a recent tabulation on a mountain division of one road showed an average for a week, based on conductors' reports, of 2 beams down per day. The principal causes were hanger pins out or hangers broken. A partial explanation is the difficulty of seeing the hanger pin cotters and keys, due to the varied and obscured locations.

**Retaining valve.**—Trains cannot be held down steep grades, with the air brakes, without the aid of retaining valves, and no part of the air brake requires less to maintain it if once properly installed; also, no part gets less needed attention. A very few years ago, while examining the piece work list for freight brake repairs on a large, level grade railway, the omission of any price for testing and repairing the retaining valve and its pipe was noted. The results are obvious. It is difficult for level grade roads, and even level grade divisions of roads having mountain grades, to appreciate that they must give these parts good attention if trains are to be handled safely down mountain grades. Willingness to pay mountain grade roads for repairs necessary to make retaining valves hold will not answer. The time now required to put the rest of the brake equipment in sufficiently good order is so excessive at mountain grade terminals as to generally preclude doing anything for retaining valves. We must depend essentially on the valve and its pipe being properly installed and on needed repairs being made when the brake is cleaned.

**Underlying cause.**—Rightly termed, the brake cleaning faults indicated are merely symptoms, and the real or underlying cause for this portion of the unsatisfactory freight brake maintenance is superficial inspecting, testing and repairing. The main reasons for this are undue haste, the pressure applied to get quantity without equal insistence on quality, unskilled men, and insufficient supervision. A letter to X asks why less brakes were cleaned last month than the previous one, or why less than by Y. Then there is the daily, local pressure to "have those B.O. loads ready at ——— o'clock," and like pressure to have the repair track ready to pull at the appointed time, each occasionally requiring more speed than will

permit of good work. The letter enquiry mentioned is always undesirable, as such comparisons cannot be made fairly. If there is good reason to believe more should be done generally, then the air brake man should personally look into it on the ground. The daily pressure, understandingly applied, is largely necessary, but the almost entire absence of a balancing pressure and provision for good work, and the more or less inadequate time, lack of sufficient proficient workmen, and needed tools and material to accomplish, will inevitably result in superficial repairing.

One very competent railway air brake man is confident that with good, initial brake installation and with efficient cleaning and lubricating, freight brakes will, as a rule, be reasonably efficient for 9 to 12 months. The results with many brakes apparently support this contention. But, even if this is impossible, the gap between it and the actual condition shown in table 1 proves that a big improvement is easily practicable.

**Wasting material.**—A natural corollary of the quantity only basis of repairing is the expensive "economy" resulting from failure to replace material that is worn out or otherwise defective. Illustrating: A gauge test of a newly-cleaned brake showed excessive cylinder leakage. Removal of the piston disclosed the cause as a badly worn and cracked packing leather. The workman assured us that he had noted the condition of the leather, but that, as he had recently been "jumped on for using too many leathers," he thought he had "better take a chance on that one." This was not local, for at another point, where we found much better work being done, we were asked to test a large accumulation of removed packing leathers, because there, too, they had been criticized for using too many packing leathers. We did so, and found all so defective as to unquestionably warrant removal. There is generally more reason to criticize undue retention of defective packing leathers, gaskets and rubber seats for emergency valve, than of applying new ones unnecessarily. All of such removed parts should be sent to a central point for inspection, so that any yet good may be saved, the best scrap value got from the others (pipe gaskets can be made from same), and to get ample evidence of wastefulness before criticizing adversely. Don't nag.

**Car brake instructions and inspections.** Various well known factors have long operated to cause rather frequent changes in a portion of the freight car brake repair force, and the war has magnified this. The new men are seldom properly instructed, and there is little adequate supervision of the work done. The remedy is to give the general air brake inspector an assistant whose main duty will be to instruct the car brake inspectors and repairmen, inspect their work, and inform local foremen of results. His instructions should be largely demonstrations of train, repair track, and shop inspecting, repairing and testing, requiring overclothes as part of his daily habit. The latter is imperative if he is to meet the demands.

A timely editorial in a railway periodical recently said: "In the present emergency, and particularly with the large labor turnover, it is more than ever necessary that adequate supervision be provided." Before the war the freight car brake equipment, complete, cost about \$75 a car for the 8 in. size and \$85 for the 10 in. size. Cleaning and repairing will cost over \$1 a car a year. Multiply these separately by the number of cars owned

and then consider whether the original investment and annual repair cost for cleaning only do not alone warrant a special inspecting and demonstrating instructor. If more proof is needed designate one or more "dead lines," points where all ineffective brakes will be found and repaired before being allowed to pass, then tabulate the periods such have run since the previous repairs were made and the causes for the short-time periods.

**Time.**—While trite to say that a car is earning only when it is moving, yet we should ever keep this in mind so as to help to avoid any unnecessary standing time. D. Willard, President, B. & O. Rd., in a remarkable address to the officers of that road last June, gave some astonishing figures on this, as shown by the following quotation:—"We have had tests made by our own people, and they have also been made on other railways, which show that the freight cars in this country are upon the average under control of the shippers 37% of the time—37% the shipper has the car; 6% out of that 37 being Sundays and holidays. That leaves 63% of the time of the car in the control of the railway. Now, what does the railway do with it? You may say, I suppose, that out of that 63, probably 45 or 50% of the time the car is moving on the road. Nothing of the sort. Only 11% of the total time of the car is it actually being moved. What happens to that other 52% of the time? Standing still in terminals, waiting to be switched, standing on connecting tracks with other railways, waiting to be repaired, being moved from the yard where the train left it to the warehouse—and things of that kind. Only 11% of the time is the car actually in motion; only 37% of the time is it under the control of the shipper; and the Baltimore & Ohio is not any worse than others—as a matter of fact, figures show that bad as we are, we were slightly better than the average, but that is the problem that confronts the railways."

Mr. Willard also stated that they were then making 28 miles a day with their freight cars, expressed the opinion that it should be 30, and advised that this gain of 2 miles a day would be equivalent to adding 6,000 cars to their equipment, and which would cost then, for steel hopper cars, approximately \$15,000,000. He said also that for some months their bad order cars had not exceeded 2½%. But does such a measure imply that the air brakes on the balance are in good order?

We should keep prominently before us the statement made in a railway periodical recently that "the cars must be kept in good condition, and when repairs are made they should be done thoroughly so that the equipment will not spend an excessive time on the repair tracks." While the car air brake repairs have not generally been made thoroughly, yet making such repairs has not contributed seriously to the percentage of bad order cars, those out of service for repairs. If this percentage could, for this reason, have been a little higher on our eastern lines during last summer, it would have helped materially to prevent the serious troubles experienced during the winter from inadequate control down steep grades.

One time saving not used as extensively as warranted is, where the destination of loads with defective brakes is a terminal, to mark them on arrival "B.O. when empty," with defect, and instruct switchmen to deliver same to the repair tracks promptly when empty.

**Incoming freight train brake test.**—It being obvious that we are far from the time when even fairly modern freight cars will reach the repair tracks for other work



at such intervals as will permit of satisfactory brake maintenance, those with ineffective brakes in trains must be located and set out for repairs with the minimum possible interference with transportation. For this we depend on the train brake test. The defect card can be made to help a little, but not much. Some claim that the train yard test plant is needed and useful for this. I believe it is not, in other than the very exceptional yard, as in special service, such as ore, where there is unusual dead time with no switching to be done. Repairs cannot be made safely while switching is going on, and when a train is made up it should start with the least delay thereafter.

The outgoing freight brake test is, or should be, merely a check against error. To then set out defective brakes for repairs is to disorganize dispatching and switching, thus delaying cars ready to proceed, and greatly augmenting expenses, hence, is as unthinkable as a means of maintenance as it would be to depend on an inspection of locomotives and reports of work needed alone when they were being got out for departure.

Immediately on arrival each train must have a general inspection under blue signals. Assuming that the proper brake application was made by the incoming engineer, a thorough brake inspection can now be given, minor repairs made, and cars with inoperative brakes marked for repair tracks, all during the time and protection afforded by the general inspection. As the air brake inspection must be begun as soon as the brakes are applied, and must be completed quickly (not over 20 minutes and preferably less, so as to avoid an unduly severe test and the setting out of cars with reasonably efficient brakes), it cannot be performed by the men making the general inspection. Under the above plan, the yard master is informed, before switching, just what cars are ready to proceed. Thus brake delays to departing trains are avoided, brakes are maintained, and incident expense is kept at the minimum.

But these desirable ends all depend on the correct performance of a simple duty by the incoming crew. The locomotive man must leave the brakes applied by a 20 lb. reduction, merely adding to any reduction needed for stopping the amount necessary to total 20 lb. It is preferable to have this made as one reduction, and some locomotive men do so by carefully making the stop with the locomotive brakes only, but the other method will have to answer in many cases to avoid the delay of releasing and recharging. Where time will permit of releasing, stretching the slack (hand brakes set at rear), recharging and then applying, a better inspection of draft gear will be possible. If less than 20 lb. is drawn off, some brakes in condition to proceed will be found unapplied. On being sent to the repair tracks these will be found operative, and the inspector may be criticized for the unnecessary work and delay. Thereafter he will fear to bad order brakes found unapplied, especially if there are several in a train. Thus there will be either useless expense and delay or brake maintenance will depreciate, with its resultant dangers and ultimate greater expenses, all due to even a few improperly-made incoming brake test applications. The errors are due either to the locomotive man failing to make the proper reduction (even after drawing off 20 lb. he will generally need to add more to have 20 lb. off when the brake valve exhaust ceases), or to the brakeman closing the angle cocks (to cut off) before the reduction is completed. Yet the delay, if

any, to make the test application right will not exceed 15 seconds. For this reason, the simplicity of the test, and especially because of the value of the inspection depends primarily on the application being made properly, it is reasonable and necessary to require 100% efficiency in this.

War time merely emphasizes the need for making the incoming brake test invariably and correctly. We must depend mainly on road foremen and trainmasters to, while on other duties on the locomotive or in the caboose, instruct and check against errors and delinquencies. They cannot do so if they get off when entering yards. Carmen cannot check this. An attempt to do so under existing conditions would result only in more trouble for them. Instructions to govern the method of making the incoming freight brake test, arranged so that they may be issued conveniently in bulletin form, are given at the end of this paper. These are the result of several years' experience with this test on one large road, being a recent revision. Where, as in some instances at mountain terminals, trains arrive with 90 lb., this should be reduced to 70 lb., by suitable application and release, before making the test application. Tests from 90 lb. are less severe, because the high pressure left in the auxiliary reservoir after the reduction of 20 lb. will supply brake cylinder leakage longer than where the application is made from 70 lb.

**Car brake repair instructions.**—It is generally understood that triple valves cannot be well maintained, unless at each periodical cleaning they are cared for in a suitable room, having among its facilities a standard test rack. At two points where experienced cleaners cared for good order triple valves without removing them, but where instructions were to get a good order valve from the near by repair room to replace each found defective, the change was made to sending all valves to the repair room. The effect was shown by one shop repair foreman complaining of the additional work required on triple valves, other than cleaning, while the other and more far seeing foreman expressed surprise that they had, considering the additional serious defects found and repaired, got along as well as they had. Both repair rooms had standard test racks.

The manufacturer's instruction book for use of the standard test rack gives much of the information needed to care for the triple valve repairs fairly well, but the men who maintain the rest of the brake equipment on the car have generally had to depend upon verbal instructions. To aid such men the Westinghouse Air Brake Co. has had certain of its men, who are closely in touch with such work, prepare instructions for the brake work to be done on the car. They represent in concrete form a large part of the remedies proposed for unsatisfactory freight brake maintenance.

**Piston travel and brake pipe leakage.** Short piston travel (less than 6 in.) and brake pipe leakage render good braking far more difficult. A piston travel of 9 in. is actually less objectionable than one of 6 in. The former, by giving a much less increase for ordinary braking reductions, lessens slack action and consequent shocks, yet is almost as efficient in a full application as the 6 in. travel.

Regarding the caution in the appended instructions against altering piston travel until it has been determined, by ascertaining if a brake beam can be moved, whether the brake has partially leaked off, it will be of interest to know that tests made a number of freight cars,

starting with 50 to 60 lb. in the brake cylinder, gradually reducing the pressure, and noting the amount remaining after each  $\frac{1}{4}$  in. recession or loss in piston travel, gave an average amount left of 30 lb. after  $\frac{1}{4}$  in. recession, 20 lb. after  $\frac{1}{2}$  in., 10 lb. after  $\frac{3}{4}$  in. and 5 lb. after 1 in. This explains the statement elsewhere that 1 in. loss in piston travel means the loss of all effective holding power.

The bad results from brake pipe leakage are much greater with long trains and increase more rapidly than the train length. That is, a rate of leakage that would not be particularly detrimental with 40 cars would prevent good handling with 80. But as any leakage is detrimental and wasteful, and as the many moderate leaks, while harder to find and remedy in a train, make a large total leakage, it is very important that all such be located and stopped substantially when cars are on repair tracks. The needed results cannot be obtained without the soap suds test. A loose pipe means a future leak, as also does a rigid pipe where the need of some flexibility is plainly indicated. One illustration of the latter is a branch pipe connection (from main pipe to triple valve) consisting of two straight pieces and one ell. Another that destroys the pipe fit in the triple valve and breaks the pipe is a retaining valve pipe connection running close to the auxiliary reservoir and horizontal or nearly so.

**Brake head spacing.**—In these days, when conservation of material is of the greatest importance, attention may well be given to the waste of shoe metal and brake efficiency resulting from the brake shoes that overlap the wheel treads. This is due to the old head spacing of 60½ in., magnified by manufacturing errors and the spreading action of the overlapping shoes. In addition to insuring that all new beams have the 60 in. spacing, the errors should be rectified in repairing old beams.

**Efficient train inspection.**—Is not considerable of the unsatisfactory maintenance, and which extends beyond the brakes, due to lack of system, insufficient or untrained inspectors, and undue haste in train inspecting and repairing? Where a specified time is allotted for this work is it based on tests with a certain number of reasonably competent men, modern inspection requirement, and certain car limits per train? Is the number of men apportioned for this work generally adequate for the time allotted? Do the switchmen, in an effort to meet the requirements of their superiors, as to when trains must be ready to depart, prevent the inspectors from doing the work properly, as by emptying the brake pipe of air, bleeding uninspected brakes, and by commencing to switch the train before the inspector's work can possibly be completed properly? These questions do not necessarily suggest the belief that the most thorough inspection required should be made of each freight train at every locomotive terminal, but if the rules require it and gross deviations occur regularly, due either to insufficient time or men, how can any really good inspection be expected? If the circumstances will not permit of or justify a thorough inspection at each locomotive terminal, why not outline a less complete one for, say, through trains at alternate terminals, specifying for particular attention only the most important details? Of course, the term inspection includes the making of needed repairs, either on cars while in the train yard or by sending them to repair tracks. Unfortunately, the tendency



is against taking "the stitch in time," with the readily-appreciated results. For example, a cotter is seen to be out, but is not replaced, possibly because its pin is yet in place. Or, piston travel of 9 3/4 in. is not shortened, maybe because it is not over the government limit. However, with competent men it is believed that the underlying reason will generally be inadequate time.

**Freight brake repairing and stencilling.** The Northwest Air Brake Club of St. Paul, Minn., has proposed to the Air Brake Association a revision of M.C.B. requirement regarding brake repairing and stencilling, as follows:—It is submitted that the present M.C.B. stencilling for freight brake cleaning, etc., can be simplified, time and money saved, brake maintenance improved and more use got from cars by adopting a rule that when either the triple valve or the brake cylinder must be cleaned, lubricated and tested, all other parts, including the retaining valve and, where had, the dirt collector, be cared for at the same time; also, that any other repairs needed by the brake equipment be made then. Stencilling should then be modified as follows:—Use but two lines; the upper to show the shop or station letters indicating where the work was done, followed by the numerals indicating the month, day and year; the second line to be the initials of the road that did the work. Also, duplicate this on the opposite side of the reservoir or car so that one man inspecting can read all dates without frequently crossing over the train, as is now necessary. The present requirements are to stencil on one side only, and that the shop mark, date and road be repeated each for the "Cylinder," "Triple," and "Dirt Collector," the parts to be lettered as quoted. There is now just enough room to get all of it on the auxiliary reservoir of an 8 in. equipment. The retaining valve is supposed to be cared for at the same time, but there would be no room for a similar stencil for it even were this desirable, as it is not.

The thought back of this separate and complete stencil for each part is that one may require attention, with incident billing if a foreign car, when the others may not. In the rare event of this being so it will be cheaper to care for all then; first, because the broken dates that would otherwise follow would require that the car be switched to the repair tracks twice as often and held from service doubly as long per year to care for the brake cleaning; second, because in the necessarily rapid work of inspection the presence of two or more dates increases errors; and, third, because of the additional expense, if, when a defective brake is found in a train and sent to the repair tracks, a test must be made to positively locate the defect before cleaning and lubricating are begun, as must be if only the then imperative work be done. In that rare case where, for example, a triple valve must be changed (usually cared for in the train) and the other parts may be let go, time and money will be saved if the stencil is not changed and, if a foreign car, no charge is made.

In view of the obvious advantages of the foregoing, and as the cost of switching a car to and from the repair tracks, with the time it must be out of service, means a greater expense than the entire permissible charge for properly caring for all of the details covered by the present stencil, it is hoped that the proposed change in the stencilling rule and in others relating to the work involved will be favorably recommended to the M.C.B. Association and will meet with its consideration.

#### Incoming Freight Brake Terminal Test.

To all concerned—Enginemen and trainmen of freight trains on arrival at terminals will leave the brakes applied by a 20 lb. service reduction made from 70 lb. Where engineman has made an automatic application for stopping, he will, as soon as stopped, add to it by one farther, continuous reduction sufficient to make a total of 20 lb., and, watching the gauge, insure that this amount is had when the brake valve discharge ceases. On its completion he will give one short whistle blast, as advice to brakeman that he may cut off and to inspectors that inspection may begin. The brakeman will not close angle cocks until this signal is given. When the train must be left on two or more tracks, or when crossings must be cut, those concerned will follow the foregoing plan before cutting off each part. To avoid preventing inspectors from ascertaining the condition of air brakes, switchmen, carmen and others must not discharge any air from the auxiliary reservoirs or brake pipe of cars that have not been inspected. Before discharging any air from those already inspected, an angle cock must be closed between such and any uninspected brakes.

On brakes being applied, as indicated by whistle signal, inspectors will at once, and rapidly, examine for piston travel, brakes failing to apply, any that have leaked off and brake pipe leaks. At this time, make no repairs; merely indicate the defect with chalk. After completing inspection, repair the defects that should be cared for in the yard. For other defects, bad order cars for repair tracks unless impracticable, as may be with perishable or time freight. The air brake and the general inspection must not be made by the same man or men.

Adjust incorrect piston travel (less than 6 in. or over 8 in.) to 7 in., but before marking for apparent short travel, be sure, by trying a brake beam, that the brake has not partially leaked off. When a brake shoe can be moved back easily, as with one's foot, the brake piston has leaked back 1 in. or more. Consider cars over 12 months since brakes were cleaned as having defective brakes. Loads that cannot be held for brake repairs earlier will, where destination is a terminal, be marked on arrival "B. O. when empty," with date, and defect. These will be delivered to repair tracks as soon as practicable after unloading.

The foregoing paper was read before the Canadian Railway Club in Montreal recently.

#### Quebec & Saguenay Ry. Purchase.—

The Minister of Railways informed the House of Commons recently, that an agreement was entered into on July 25, 1916, as authorized under the statutes of 1915, chap. 16, and under the statutes of 1916, chap. 22, for the purchase of the railway lines from Quebec to Nairns Falls, and another line from Lyster to St. Jean des Châllons, Que. The first mentioned lines include a line from and inclusive of its terminals in Quebec, easterly. The lines are fully described in the statutes, and the fixing of the prices to be paid for the same is set out in the statutes of 1916, sec. 2. Up to the time the information was given, no money had been paid by the government on account of the purchase price of these lines.

G. Gordon Gale, M.Sc., M.Can.Soc.C.E., Vice President and General Manager, Hull Electric Co., Hull, Que., writes: "I take a very great interest in Canadian Railway and Marine World, and have obtained considerable valuable information by reading each issue carefully."

#### Timiskaming and Northern Ontario Railway Report.

The Timiskaming & Northern Ontario Ry.'s report for the year ended Oct. 31, 1917, has been issued by the commission which operates it, and the Nipissing Central Ry.—an electric line—for the Province of Ontario. Following are extracts:

Mileage.	
Main Line, North Bay to Cochrane.....	252.29
Branch lines (three).....	76.21
Nipissing Jct. spur leased to G.T.R.....	2.10
Yards and sidings.....	114.05
Second track.....	1.70
Total mileage T. & N.O. Ry.....	446.35
Assets.	
Cost of road.....	\$18,297,149.50
Cost of equipment.....	2,563,911.79
Nipissing Central Ry.....	483,123.31
Empire Lumber Co. plant, Lathford.....	865.00
Working assets.....	1,129,751.46
Deferred debit items.....	9,595.55
	\$22,484,336.61
Liabilities.	
Provincial loan account.....	\$21,593,869.99
Working liabilities.....	324,358.00
Deferred credit items.....	292,802.94
Balance profit and loss.....	273,305.64
	\$22,484,336.61
Earnings and Expenses.	
Revenue from transportation.....	\$2,220,892.22
Revenue other than transportation.....	111,013.57
Total operating revenue.....	\$2,331,905.79
Maintenance of way structures.....	\$419,266.84
Maintenance of equipment.....	305,268.86
Traffic expenses.....	17,676.10
Transportation expenses.....	985,452.19
Miscellaneous operations.....	47,824.69
General expenses.....	107,255.05
Transportation for investment—cr.....	1,465.44
Total operating expenses.....	\$1,881,296.29
Net operating revenue.....	\$ 450,609.50
Ore royalties.....	119,567.64
Rent from joint facilities.....	12,849.94
Rent from lease of road.....	13,624.15
Interest—dr.....	5,649.48
Miscellaneous income.....	9,417.21
Total income.....	\$ 600,427.36
Deductions from income.....	83,726.80
Total earnings.....	\$ 516,700.56

Compared with the year ended Oct. 31, 1916, the total operating revenue increased \$193,783.84; total operating expenses increased \$287,118.83, and net operating revenue decreased \$93,334.99. Income from ore royalties increased \$69,698.42; rent from joint facilities decreased \$5,770.51; rent from lease of road increased \$287.11; interest decreased \$7,385.84, and miscellaneous income increased \$8,387.43. The deductions from income show a decrease of \$16,123.48, and the total earnings decreased \$12,004.90. From the profit and loss \$250,000 was paid to the Treasurer of Ontario, certain adjustments were made, and uncollectable accounts cancelled, and \$273,305.64 was carried forward.

Traffic Statistics.	
Revenue passengers.....	499,759
Passengers carried one mile.....	28,616,324
Passengers carried one mile per mile or road.....	87.112
Average distance carried (miles).....	57.26
Average amount received.....	\$1.31
Average receipts per passenger per mile.....	2.29 cts.
Passenger service train revenue per train mile.....	\$1.52
Revenue freight carried (tons).....	960,714
Tons carried one mile.....	161,476,728
Carried one mile per mile of road.....	491,558
Average distance of haul of one ton (miles).....	168.02
Average revenue per ton.....	\$1.52
Average amount received per ton per mile.....	00.9 cts.
Freight revenue per train mile.....	\$2.50
Freight originating on the line (tons).....	465,350
Received from Canadian lines (tons).....	417,475
Received from U.S. lines (tons).....	77,891
Total (tons).....	960,714
Mileage of revenue passenger trains.....	435,769
Mileage of revenue mixed trains.....	58,132
Mileage of revenue freight trains.....	512,161
Total revenue train mileage.....	1,006,052



## Birthdays of Transportation Men in June.

Many happy returns of the day to:

Jas. Anderson, Vice President, Sand-  
wich, Windsor & Amherstburg Ry., Wind-  
sor, Ont., born at Ayr, Ont., June 20, 1851.

F. F. Backus, General Manager,  
Toronto, Hamilton & Buffalo Ry., Hamil-  
ton, Ont., born at Rochester, N.Y., June  
4, 1860.

W. C. Bowles, General Freight Agent,  
Western Lines, C.P.R., Winnipeg, born at  
Montreal, June 3, 1875.

J. H. Boyle, Superintendent, Brownville  
Division, New Brunswick District, C.P.R.,  
Brownville Jct., Me., born at Waterloo,  
Que., June 26, 1869.

F. P. Brady, General Manager, Western  
Lines, Canadian Government Railways,  
Winnipeg, Man., born at Haverhill, N.H.,  
June 22, 1853.

H. W. Brodie, General Passenger  
Agent, Lines West of Revelstoke, C.P.R.,  
Vancouver, B.C., born at Fredericton, N.  
B., June 8, 1874.

J. A. Clancey, Trainmaster, Districts 27  
and 28, Detroit Division, Western Lines,  
G.T.R., Durand, Mich., born at Walk-  
erton, Ont., June 8, 1884.

G. W. Coburn, Resident Engineer,  
C.P.R., Brandon, Man., born at Upper  
Melbourne, Que., June 24, 1877.

E. P. Coleman, General Manager, Do-  
minion Power & Transmission Co., Ltd.,  
Hamilton, Ont., born at Taunton, Mass.,  
June 14, 1867.

W. S. Cookson, General Passenger  
Agent, G.T.R., Montreal, born at Port  
Jervis, N.Y., June 12, 1871.

E. L. Cousins, Manager and Chief En-  
gineer, Toronto Harbor Commission, To-  
ronto, born there, June 11, 1883.

A. Craig, City Passenger Agent, C.P.R.,  
Hamilton, Ont., born there, June 5, 1884.

A. E. Doucet, M.Can.Soc.C.E., Quebec,  
ex-District Engineer, National Transcon-  
tinental Ry., Quebec, born at Montreal,  
June 9, 1860.

E. W. DuVal, formerly Superintendent,  
Saskatoon Division, Saskatchewan Dis-  
trict, C.P.R., Saskatoon, now on active  
military service, born at Toledo, Ohio,  
June 5, 1885.

Knowlson Elliott, City Freight Agent,  
C.P.R., Calgary, Alta., born at Gorrie,  
Ont., June 26, 1884.

J. M. R. Fairbairn, M.Can.Soc.C.E., As-  
sistant Chief Engineer, Eastern Lines,  
C.P.R., Montreal, born at Peterborough,  
Ont., June 30, 1873.

W. E. Foster, Solicitor for Ontario,  
G.T.R., Montreal, born at Belleville, Ont.,  
June 27, 1866.

A. A. Goodchild, General Storekeeper,  
Eastern Lines, C.P.R., Montreal, born at  
Peckham, London, Eng., June 3, 1866.

H. W. Harding, Local Secretary, Can-  
adian Northern Ry., London, Eng., born  
there, June 6, 1869.

J. A. Heaman, A.M.Can.Soc.C.E., As-  
sistant Chief Engineer, Grand Trunk  
Pacific Ry., Winnipeg, born at Memphis,  
Tenn., June 3, 1874.

L. K. Jones, I.S.O., Assistant Deputy  
Minister, Department of Railways and  
Canals, Ottawa, born at Port Hope, Ont.,  
June 9, 1849.

M. W. Kirkwood, General Manager,  
Grand River Ry., and Lake Erie & North-  
ern Ry., Galt, Ont., born at Cheltenham,  
Ont., June 8, 1877.

A. C. Lytle, Assistant Superintendent  
of Construction, Montreal Tramways Co.,  
Montreal, born at Hemmingford, Que.,  
June 6, 1854.

J. D. McAuley, Commercial Agent,  
Grand Trunk Pacific Ry., and Grand

Trunk Pacific Coast Steamship Co., Ltd.,  
Prince Rupert, B.C., born at Plantagenet,  
Ont., June 11, 1884.

R. S. McCormick, M.Am.Soc.C.E., Chief  
Engineer and General Superintendent, Al-  
goma Central & Hudson Bay Ry., Sault  
Ste. Marie, Ont., born at Quaker City,  
Ohio, June 22, 1873.

Duncan McDonald, ex-General Mana-  
ger, Montreal Tramways Co., born at St.  
Thomas de Montmagny, Que., June 17,  
1859.

S. J. McLean, Dominion Railway Com-  
missioner, Ottawa, born at Quebec, June  
14, 1871.

C. E. McPherson, Assistant Passenger  
Traffic Manager, Western Lines, C.P.R.,  
Winnipeg, born at Chatham, Ont., June  
7, 1861.

W. R. MacInnes, Freight Traffic Mana-  
ger, C.P.R., Montreal, born at Hamilton,  
Ont., June 7, 1867.

J. R. C. Macredie, M.Can.Soc.C.E., En-  
gineer, Saskatchewan District, C.P.R.,  
Moose Jaw, born at St. John, N.B., June  
13, 1880.

James Manson, Assistant to Vice Presi-  
dent, C.P.R., Montreal, born at Thurso,  
Scotland, June 8, 1863.

J. D. Morton, Assistant Comptroller,  
Canadian Northern Ry., Toronto, born at  
London, Ont., June 15, 1857.

L. Mulkern, Division Freight Agent,  
C.P.R., St. John, N.B., born at London,  
Ont., June 18, 1871.

J. E. Pinault, General Superintendent,  
Canada & Gulf Terminal Ry., Mont Joli,  
Que., born at Rimouski, Que., June 24,  
1884.

F. R. Porter, Assistant General Freight  
Agent, Grand Trunk Pacific Ry., Winni-  
peg, born at Stratford, Ont., June 13,  
1875.

F. Price, Superintendent of Car Ser-  
vice, G.T.R., Montreal, born there, June  
11, 1864.

Allan Purvis, General Superintendent,  
Quebec District, C.P.R., Montreal, born  
at Batavia, Java, June 29, 1878.

L. J. Reycraft, Solicitor, Manitoba and  
Saskatchewan Districts, C.P.R., Winni-  
peg, born in Orford Tp., Kent County,  
Ont., June 20, 1868.

L. G. Rogers, Yardmaster, C.P.R.,  
Trenton, Ont., born at Richford, Vt., June  
18, 1874.

J. R. Shaw, General Agent, Passenger  
Department, Canadian Pacific Ocean Ser-  
vices, Ltd., Hong Kong, China, born at  
Montreal, June 28, 1871.

J. L. Simpson, agent, C.P.R., Port Mc-  
Nicoll, Ont., born at Mount Forest, Ont.,  
June 9, 1866.

H. H. Smith, Car Accountant, Canadian  
Northern Ry., Toronto, born at Quebec,  
Que., June 14, 1872.

N. Van Wyck, Purchasing Agent, Can-  
ada Steamship Lines, Ltd., Montreal, born  
at Hamilton, Ont., June 29, 1883.

V. G. R. Vickers, ex-Manager, Foreign  
Department, and Superintendent, Atlantic  
Division, Dominion Express Co., now Vice  
President, The Holden Co., Ltd., Montreal,  
born at Toronto, June 1, 1866.

Walter White, Trainmaster, G.T.R.,  
Palmerston, Ont., born at Toronto, June  
4, 1866.

**Colored Men on Dining Cars.**—A Win-  
nipeg dispatch says that, to release men  
for more important work elsewhere, the  
C.P.R. has decided to place colored men  
on dining cars as waiters and cooks, and  
that the change will be made as soon as  
the men are secured.

## The St. John and Quebec Railway's Arbitration Suit.

The arbitration proceedings in connec-  
tion with the claims made by A. R. Gould  
and those associated with him in the St.  
J. & Q. Ry.'s affairs, against the New  
Brunswick Government, which confiscated  
the charter, and took over the work, were  
concluded recently, when Mr. Justice  
McKeown, who presided, made his report  
to the legislature. Following are the  
findings:—That the government carried  
out all obligations arising under and out  
of the contract entered into between the  
province and the railway company. That  
the railway company defaulted in its obli-  
gations under the contract. That the de-  
faults so made were of such a nature as  
to justify the government in terminating  
the contract and taking over and vesting  
in His Majesty the stock of the company  
heretofore belonging to the claimants.  
That the claimants have no right which  
should be recognized or enforced in any  
court or before any arbitrator because  
the contracts are void by reason of an  
act of bribery committed by A. R. Gould  
during the negotiations for the building of  
the road, between the province and the  
railway company. That neither in law  
nor in equity is there any amount what-  
ever due from the Province of New Brun-  
swick to A. R. Gould and his associates.

Two claims were made by Gould, the  
first, \$445,560, was for contractors' profits  
at 10% upon the construction cost of the  
railway, and the alternative claim was for  
\$334,230, representing the alleged value  
of the stock of which Gould and his asso-  
ciates were deprived in 1915.

The Provincial Secretary informed the  
New Brunswick Legislature recently that  
the Prudential Trust Co. of Montreal, on  
Feb. 1, held \$563,880 available for the  
railway. Since that date \$43,406 had been  
paid over to the company, which is now  
composed of nominees of the government.  
This fund is one of the complications aris-  
ing out of the circumstances which  
brought about the determination of the  
contract by the government.

## Tie Supplies for Timiskaming and Northern Ontario Railway.

In his annual report to the T. & N.O.  
Ry. Commission, S. B. Clement, Chief  
Engineer and Superintendent of Mainte-  
nance, says:—The Commission has ob-  
tained from the Lands, Forests and Mines  
Department the reservation of the timber  
on several townships tributary to Night  
Hawk Lake. There are in the reserved  
area several large stands of jackpine,  
from which it is estimated the commis-  
sion will be able to obtain all the ties it  
requires for renewals for at least 20  
years. It is proposed to contract for the  
cutting of the timber, the making and  
delivery of the ties at Connaught, where  
the Porcupine Branch of the railway  
crosses the Frederick House River, which  
runs from Night Hawk Lake. It is hoped  
that before long a creosoting plant will  
be built in Northern Ontario, where all  
ties could be creosoted. A proper treat-  
ment with creosote will probably increase  
the life of a jackpine tie from 8 to 20  
years, provided suitable tie plates are  
used to protect the face of the tie from  
mechanical wear. The growing scarcity  
of suitable tie timber, and increased cost  
of ties, and the greatly increased wages  
now paid trackmen, make a reduction in  
the cost of tie renewals a matter of first  
importance. The area of the reserve is  
about 135 square miles.



# Fluework in a Railway Shop.

The accompany engravings illustrate some of the methods and equipment used in connection with fluework at the Southern Pacific shops at Sparks, Nev. Figs

tube just withdrawn from the oil-fired heating furnace at the left and placed in the roll swager at the center of the illustration. At the right is the air-operated

cylinder and piston, placed in inverted position in a framework built up of a top plate, pipe and through bolts on an old machine bed. The air pipes may be seen

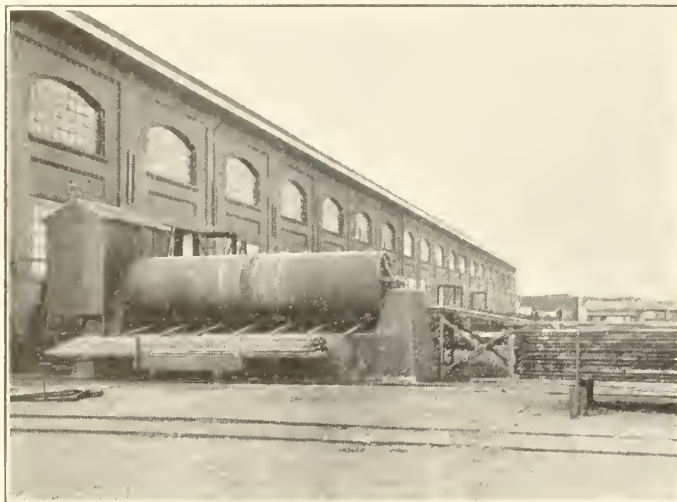


Fig. 1. Tumbling apparatus for tubes.

1 and 2 are views of the flue-tumbling apparatus located just outside the shop building. It consists of a perforated cylinder long enough to receive the tubes and provided at the end next the shop wall with power driving mechanism for rotating the cylinder upon its journals. At one side, as shown in fig. 2, there is a longitudinal opening extending the full length of the cylinder to admit the tubes, which are hauled up on a car on the inclined track to a point directly in front of the cylinder. At the rear there is a series of inclined rails upon which the tubes fall when the cylinder is opened for their discharge. Down these rails the tubes roll on to a car placed on the track below, as shown by fig. 1. This track leads directly into the building, so the tubes are readily handled between tumbler and shop.

Fig. 3 shows a lot of tubes in the shop, stacked up on a sloping rack immediately



Fig. 2. Loading side of tumbling apparatus.



Fig. 7. Flue swaging equipment.

at the right-hand side of the structure. The machine is controlled by pressure of the foot upon a lever near the floor, so that the operator has both hands free to move the tube about under the dies as is required for the operation. The machine in fig. 6 is for trimming the tubes to length. It is another home-made device built up on a long bed, with supporting rollers at each end to receive the tube and hold it in horizontal position for the application of the trimming knife, which is a revolving disc about 6 in. in diameter. This disc is mounted upon the end of a spindle that is gear driven from an electric motor at the rear end of the head, as indicated in the engraving. The lever for forcing the cutting or trimming disc into the tube is at the top of the machine with the handle bent forward to convenient position for the operator.

Fig. 7 shows the apparatus for testing the tubes under water pressure. The

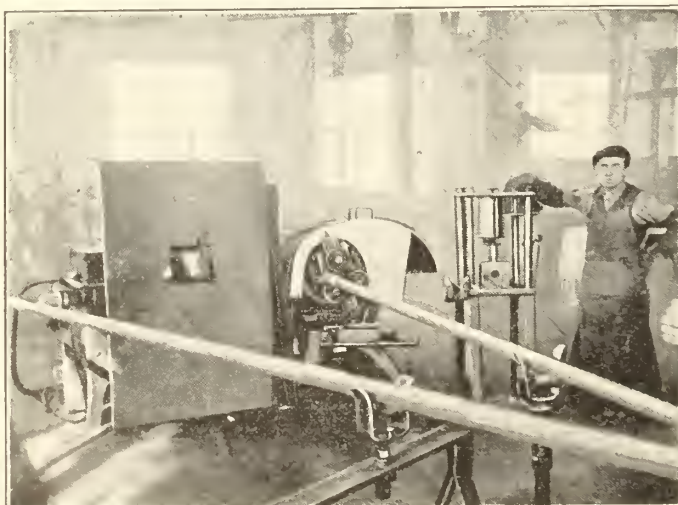


Fig. 4. Heater and swagers.

behind the swaging machines. Figs. 4 and 5 illustrate the roll swager and the pneumatically operated dies for the tube ends. The front view, fig. 4, shows a

swaging die. A better view of this is given in fig. 5 with a tube in place for working under the dies.

The machine consists of a short-stroke



Fig. 5. A tube in the swaging dies.

outer end of the tube rests against a closing gasket on a fixture adjustably mounted upon the long bed of the machine. The other end is closed by a pack-



ing ring in the cylinder head. Water is admitted by the valve near the operator's hand. The tubes as tested are placed upon the skeleton truck, which will be seen immediately behind the workman. This holds a large number of tubes and is of such form and weight as to be easily moved about with a full load of tubes. It is one of a number of very handy appliances for handling work of various kinds about different departments in this plant.

The foregoing article is reproduced from the American Machinist, to which we are indebted for the photographs from which the illustrations were made.

### Standardization of Locomotives for United States Railways.

Under authority from the U.S. Director General of Railroads, a committee of 11 railway officials and representatives of the three principal locomotive builders in the U.S., has prepared standard specifications and drawings for 12 types of locomotives to be used in ordering for all U.S. railways. They are as follows:—

Two sizes of the mikado type, 2-8-2, based respectively on 55,000 and 60,000 lb. per axle; the lighter of these has a

No one railway will be compelled to order all of the 12 standards, and it is probable that even the large trunk lines will find that half of this number is sufficient for their needs. It will, however, greatly simplify the building of locomotives for the rehabilitation of the railway motive power, which is so badly needed, and also greatly reduce the cost of carrying spare parts by the different roads.

A Washington correspondent writes:—"As is always the case when any kind of standardization is proposed, there are those who fear that it will prevent improvements and discourage new ideas. That such fear is unfounded may be seen from the automobile industry, which, perhaps, has standardized more of its products than any other branch of manufacture. It is probable that for the duration of the war at least we can well afford to omit special new locomotive development; but when we return to normal conditions an experimenting department should be established for the purpose of trying out new devices for all the railways instead of a dozen or more railways spending money on the same experiments. The money that has been needlessly spent on experiments during the past 25 years would go a long way toward paying the war debt. When we consider that on the

cations for which have been developed and perfected by committees of experts, who for many weeks have devoted much time and study to the subject, particulars of which are given in another article in this issue.

The six standard types of locomotives, two sizes of each class, are expected eventually to supersede the many miscellaneous types and varieties of locomotives now in service, embracing ones built according to 500 or more varying specifications. This is the first time that any real forward step has been taken looking to the wide standardization of locomotives.

The contracts were awarded on terms much more favorable to the railways than the bids originally submitted by the builders. The order was distributed approximately evenly between the American Locomotive Co. and the Baldwin Locomotive Works.

### Orders for Freight Cars Placed by United States Government.

The Director General of U.S. Railroads announced, early in May, the allotment of orders for the construction of 70,000 additional steel underframe freight cars to various car building concerns on the same

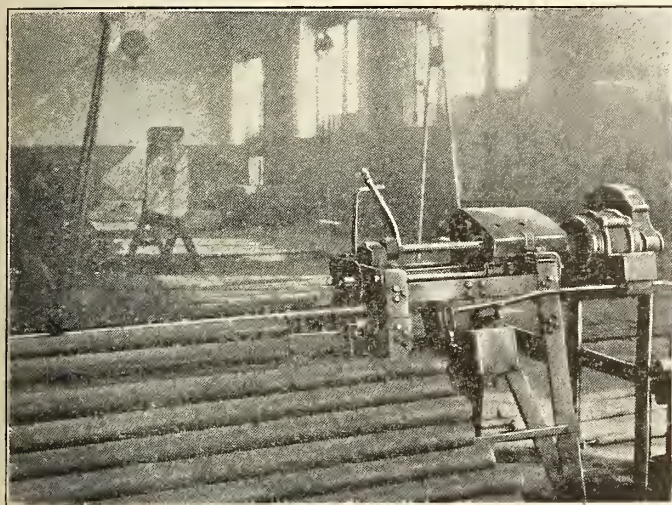


Fig. 6. Trimming machine.

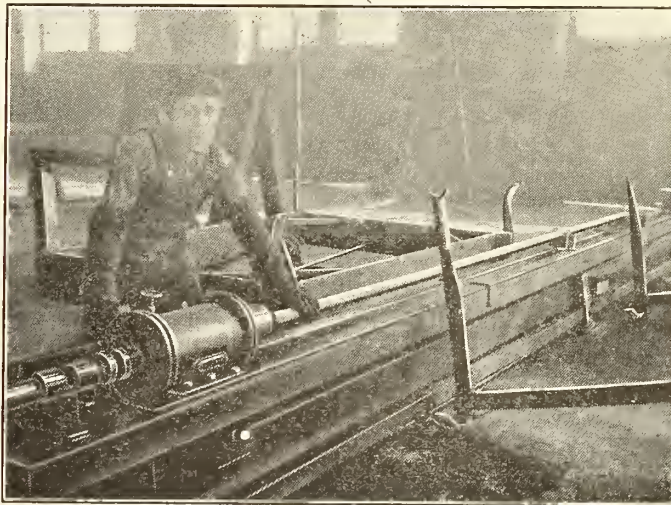


Fig. 7. Testing apparatus.

weight in working order of 290,000 lb., and the heavier 325,000 lb.

Two sizes of the mountain type, 4-8-2, based respectively on 55,000 and 60,000 lb. per axle, the lighter having a total weight in working order of 320,000 and the heavier of 350,000 lb.

Two sizes of the Pacific type, 4-6-2, based respectively on 55,000 and 60,000 lb. per axle, the former having a weight of 270,000 lb. and the latter 300,000 lb. in working order.

Two sizes of the Santa Fe type, 2-10-2, based respectively on 55,000 and 60,000 lb. per axle, the lighter having a weight of 360,000 lb. and the heavier 390,000 lb. in working order.

A 6-wheel locomotive, 0-6-0, with tender, 55,000 lb. per axle; weight in working order, 165,000 lb.

An 8-wheel switching, or hump, locomotive, 0-8-0, with tender, 55,000 lb. per axle; 220,000 lb. in working order.

A 6-couple Mallet locomotive, with trucks, 2-6-6-2, based on 60,000 lb. per axle, weighing in working order 540,000 lb.

The tenders have been standardized with tanks of 8,000, 10,000 and 12,000 gal. respectively.

Santa Fe Ry. alone there have been at times over 300 different types of locomotives to keep in repair, the advantage of confining all experimental work of this kind to one department can easily be estimated."

### Locomotives Ordered for United States Railways.

The Director General of U.S. Railroads announced, on May 1, that he had awarded contracts for the immediate construction of 1,025 locomotives. Deliveries are to begin in July and continue monthly during the remainder of the year.

The locomotives are to be of six standard types—one heavy and one light of each type—covering both freight and passenger service, and vary in weight from 290,000 lb. to 540,000 lb. The order involves an expenditure of approximately \$60,000,000. The locomotives will be allotted, upon completion, to the various railway systems where they are most needed.

The awarding of this contract marks the establishment by the government of the standard type of locomotives, speci-

basis on which the order was placed a short time previously for 30,000 cars. These 70,000 cars include 15,000 40-ton double-sheathed box cars, 16,000 50-ton single-sheathed box cars, 15,000 50-ton composite gondola coal cars, 5,000 70-ton low-side gondola cars, 19,000 55-ton hopper coal cars.

The 70,000 cars have been apportioned among the following builders: Bettendorf Co., Bettendorf, Iowa, 3,000; Cambria Steel Co., Johnstown, Pa., 3,000; Haskell & Barker Works, Michigan City, Ind., 8,000; Keith Car Manufacturing Co., Sagamore, Mass., 1,000; Laconia Car Co., Laconia, N.H., 1,000; Lenoir Car Works, Lenoir, Tenn., 2,000; Liberty Car & Equipment Co., Chicago, Ill., 1,000; Magor Car Corporation, Passaic, N.J., 1,000; Mount Vernon Car Manufacturing Co., Mount Vernon, Ill., 4,000; Pacific Car & Foundry Co., Seattle, Wash., 2,000; Pressed Steel Car Co., Pittsburgh, Pa., 14,000; Pullman Co., Chicago, Ill., 8,000; Ralston Steel Car Co., Columbus, Ohio, 4,000; St. Louis Car Co., St. Louis, Mo., 1,000; Standard Steel Car Co., iPittsburgh, Pa., 15,000. Also, pending, to Barney & Smith Car Co., Dayton, Ohio, 2,000. It is possible that there may be some modi-



fications in the number and types of cars apportioned respectively among the above car builders before the final detailed contracts are executed.

These 70,000 freight cars, together with the 30,000 awarded a few days ago, will involve an aggregate cost of between \$250,000,000 and \$300,000,000. The orders were all placed upon the basis of the minimum bids as to costs for labor and overhead charges, with the understanding that any reduction in costs which may be obtained from these fixed prices will be divided equally between the Railroad Administration and the car builders, but any increase in these costs will be borne exclusively by the builders. The government will have supervision or control as to prices of the materials required in construction. The compensation of the builders will be approximately 5% on the cost, as estimated on the minimum bid.

The five types of cars represent the standard forms of freight cars adopted by the Railroad Administration. These standards are the result of the labors of a committee of experts who were working upon the problem for weeks. The adoption of these standard types, it is believed, will eventually substitute a few scientifically worked out designs for the numerous miscellaneous varieties of cars, representing probably more than a thousand different old styles and specifications now in use, the accumulations of the past.

### Compensation for Government Employees Killed or Injured.

The following act, passed by the Dominion Parliament at its recent session, refers, among others, to government railway employees:—

1. (1) An employe in the service of His Majesty who is injured, and the dependents of any such employe who is killed, shall be entitled to the same compensation as the employe, or as the dependent of a deceased employe, of a person other than His Majesty would, under similar circumstances, be entitled to receive under the law of the province in which the accident occurred, and the liability for and the amount of such compensation shall be determined in the same manner and by the same board, officers or authority, as that established by the law of the province for determining compensation in similar cases, or by such other board, officers or authority or by such court as the Governor in council shall from time to time direct.

(2) Any compensation awarded to any employe or the dependents of any deceased employe of His Majesty by any board, officer or authority, or by any court, under the authority of this act, shall be paid to such employe or dependent or to such person as the board, officer, or authority or the court may direct, and the said board, officer, authority and court shall have the same jurisdiction to award costs as in cases between private parties is conferred by the law of the province where the accident occurred.

(3) Any compensation or costs awarded hereunder may be paid by the Minister of Finance out of any unappropriated moneys in the Consolidated Revenue Fund of Canada.

(4) Provided that no employe on the Canadian Government Railways, who is an employe within the meaning of the Intercolonial and Prince Edward Island Railways Employees' Provident Fund Act, shall be entitled to compensation under this act for or on account of any injury for which an allowance is provided under

the provisions of the said Provident Fund Act, unless such employe has, prior to the date of the injury for which compensation is sought, given notice in writing to the General Manager of the said railways under whom he is employed, electing to accept the compensation under this act instead of such allowance, and no person who has so elected shall be entitled to any such allowance; and provided further, that no dependent of any such employe who is killed shall be entitled to any compensation under this act unless such employe has made election as aforesaid.

2. The Governor in council may make regulations as to the title of the defendant and the effecting of service of process in proceedings under this act.

### Contract System for Ballasting Track Disapproved by Engineers.

That track ballasting by contract is inadvisable, especially on lines under operation, is the conclusion arrived at by the committee on ballast and presented with its report at the American Railway Engineering Association's recent annual meeting.

Enquiry was made of more than 100 railways. The contract system was favored by 9 out of 18 which have employed this method on new construction,

and by 2 out of 6 which have employed it on lines under operation. Of 86 and 87 which have not used the method under these two conditions, only 13 and 8 respectively were in favor of trying it.

Two advantages are assigned to the contract system: 1, flexibility of supply and control of labor owing to freedom in fixing rates of pay; 2, possibility of a low cost where lack of proper equipment would make the work expensive if done by company forces. Disadvantages comprise loss of control over the work; less thoroughness even under close inspection; possible increase in ultimate cost and disputes over the work. On operated lines there are the additional advantages of difficulty of ensuring proper maintenance of surface, less complete co-ordination between the constructing and operating forces, some added danger due to loss of direct control, greater interruptions to traffic and claims for extras on account of interruptions to the work.

According to the report, those who advocate the contract system do so largely as an emergency measure, because of the greater flexibility of a contractor's organization in changing the rates of pay and so securing labor in time of stress. The committee considers that the matter is best summed up in the following remark that was made by one of the engineers favorable to the system: "My experience is that contract ballasting is to a large extent a necessary evil."

## Canadian Pacific Railway's Honor Roll 34.

Beaton, John R.	Brakeman	Medicine Hat	Wounded
Bernard, Austin	Stationary fireman	Regina	Killed in action
Chagnon, Jack	Trainman	Winnipeg	Gas poisoning
Franklin, Vivian	Sheeter	Winnipeg	Wounded
Gardiner, Edward May	Dump foreman	Savona	Wounded
Hand, Albert	Collector	Winnipeg Terminals	Wounded
Hanna, John	Oilier	Montreal	Wounded
Hart, John Edward	Checker	Winnipeg	Wounded
Haskins, Walter S.	Call boy	Chapleau	Killed in action
Haywood, John Robert	Humpmaster	Fort William	Killed in action
Hulme, Cyril	Apprentice	Ogden Shops	Died of wounds
Jackson, Fred	Apprentice	Winnipeg Shops	Wounded
Jefferson, Wm.	Checker	Regina	Wounded
King, Wm. Stuart	Freight solicitor	Winnipeg	Wounded
Laird, Thomas	Car repairer	Winnipeg	Wounded
Larman, William Arthur	Locomotive fireman	Kenora	Wounded
Leitch, John Franklin	Yardman	Winnipeg	Wounded
Leonard, George	Examiner	Vancouver	Killed in action
Linow, Nicholas	Deckhand	B.C. Lake Steamers	Wounded
Livingston, David A.	Assistant engineer	Golden South	Wounded
McDonald, George	Locomotive fireman	Winnipeg	Gas poisoning
McDonnell, Robt. Craig	Clerk	Fort William	Wounded
McGregor, Norman Donald	Conductor	Moose Jaw	Wounded
McLeod, Robt. Kenneth	Locomotive fireman	Moose Jaw	Wounded
McMorland, Andrew	Yard foreman	Winnipeg	Wounded
McTague, Robert M.	Asst. extra gang foreman	Albama District	Wounded
Mason, Charles P.	Saw filer	Winnipeg	Wounded
Mayo, Guy Sherwin	Sergeant	Moose Jaw	Wounded
Mersereaux, Lorne A.	Clerk	McAdam Junction	Wounded
Mulhearn, Wm. Edward	Pipe fitter	Winnipeg	Killed in action
Neale, Arnold Selwyn	Section foreman	Markinch	Wounded
Nelson, Thos. Wm.	Trainman	Edmonton	Wounded
Nottman, James Dixon	Waiter	Montreal	Wounded
Packham, Benjamin P.	Engineer	Sutherland	Wounded
Patterson, John S.	Trainman	Winnipeg	Gas poisoning
Pelletier, Henri	Foreman	Angus	Gassed
Pennington, George	Clerk	Saskatoon	Wounded
Phillip, John R. D.	Draftsman	Kamloops	Killed in action
Ralph, William C.	Freight carpenter	North Bay	Wounded
Renwick, Herbert A.	Clerk	Calgary	Wounded
Rewse, B. W. S.	Resident engineer	Weyburn West	Killed in action
Ridley, Stanley	Stower	Moose Jaw	Killed in action
Robbins, Herbert Wm.	Car cleaner	Strathcona	Wounded
Robertson, John	Trucker	Revelstoke	Wounded
Robison, Stephen F.	Instrumentman	Calgary	Presumed dead.
Ross, Harold	Clerk	Toronto	Gassed
Sampson, Thos. H.	Apprentice	Angus	Wounded
Seright, Samuel	Machinist's app'tice	East Calgary	Gassed
Skelton, Daniel A.	Laborer	Angus	Wounded
Spick, Arthur	Car repairer	Emerson	Killed in action
Stacey, Austin R.	Clerk	Weyburn	Wounded
Starkey, Edward	Machinist	Ogden Shops	Killed in action
Stewart, Alexander A.	Clerk	Montreal	Wounded
Sutherland, Wm. E.	Accountant	Winnipeg	Wounded
Tattersall, Thomas H.	Waiter	Winnipeg	Wounded
Thomas, John R.	Clerk	Angus	Gas poisoning
Thorne, Wm. Benner	Clerk	Winnipeg	Killed in action
Tremblay, Ernest B.	Trainman	Schreiber	Wounded
Trupp, James E. R.	Clerk	Hardisty	Wounded
Tuff, John Arthur	Conductor	Bredbury	Wounded
Turnbull, A.	Steam fitter	London	Concussion
Ward, Arnold	Porter	Calgary	Wounded

Shown on Honor Lists to May 1: Killed 620; Wounded 1,452; Total 2,072.



# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1914, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 229. May 9.—Extending to Sept. 30, 1919, time within which railway companies subject to board's jurisdiction shall make changes in safety appliances on freight cars, as required under general order 128, Apr. 20, 1914; companies to continue present practice of filing monthly reports of progress made in complying with requirements of said order.

General order 230. May 17.—Defining the interpretation, application and operation of inter-switching of freight traffic, and rates to be applied.

27138. Apr. 23.—Relieving C.P.R. from providing further protection at crossing near Sceptre, Alta.

27139. Apr. 22.—Authorizing G.T.R. to build siding and spur for Thomas Davidson Mfg Co., Montreal.

27140. Apr. 23.—Authorizing Canadian Northern Ontario Ry. to connect its main line and spur to drydock at Port Arthur, Ont., as authorized by order 25315, Aug. 25, 1916, until Dec. 31, trains to stop before crossing diamond and be flagged over C.P.R. spur.

27141. Apr. 23.—Ordering Grand Trunk Pacific Ry. to appoint station agent at Kinsella, Alta., as soon as it can obtain services of competent man and not later than June 1.

27142. Apr. 22.—Authorizing C.P.R. to rebuild bridge at mileage 25.9, Orangeville Subdivision, Ont.

27143. Apr. 23.—Suspending order 27015, Feb. 20, re installation of G.T.R. locomotive repair facilities at Brockville, or Prescott, Ont., pending further hearing.

27144. Apr. 20.—Extending to Aug. 1, time within which Kettle Valley Ry. shall complete enlargement of freight shed end of station at Rock Creek, B.C., by 12 ft., so that freight shed room will be 14 x 20 ft.

27145. Apr. 24.—Approving re-location of C.P.R. station at Oakbank, Man.

27146. Apr. 19.—Approving proposed alteration and additions to C.P.R. coaling plant at John St., Toronto; and approving clearances.

27147. Apr. 22.—Relieving C.P.R. from providing further protection at crossing, about 2½ miles west of Blind River, Ont.

27148. Apr. 22.—Ordering C.P.R. to raise road on south side of track about 5 ft., at its lowest point for approximately 250 ft. from track to erect standard guard railing and blast off top of rock bluffs on each side of road; to be completed by June 1.

27149. Apr. 23.—Ordering G.T.R. to operate trains 389 and 390 between Lindsay and Haliburton, Ont., Tuesdays, Thursdays and Saturdays; present schedule between Lindsay and Kinnmount Jet., Mondays, Wednesdays and Fridays, and connection with C.P.R. train at Kinnmount Jet. to be maintained; effective Apr. 28 and until further order.

27150. Apr. 25.—Ordering C.P.R. to restore train service between Moose Jaw and North Portal, Sask.; effective by Apr. 29.

27151 to 27155. Apr. 19.—Extending to June 1, time within which G.T.R. shall install gates at St. Ferdinand, Convent, St. Ambrose, St. Philippe, and Ste. Marguerite Sts., Montreal.

27156. Apr. 18.—Authorizing G.T.R. to build two extensions to sidings for Canada Foundries & Forgings, Ltd., Welland, Ont.; and to remove existing siding built under order 23954, July 8, 1915.

27157. Apr. 24.—Authorizing C.P.R. to build spur for Canada Steamship Lines, Ltd., Cap de la Madeleine Parish, Que.

27158. Apr. 22.—Authorizing C.P.R. to rebuild bridge 7.6, Kimberley Subdivision, B.C.

27159. Apr. 26.—Authorizing British Columbia Electric Ry. to increase by 10% its freight rates on portions of its system, subject to Board's jurisdiction; rate on coal to be increased 15c a ton; effective within 15 days from date.

27160. Apr. 26.—Suspending, pending hearing and order, proposed joint freight tariff of class rates. C.P.R. C.R.C. no. E-3439 and G.T.R. C.R.C. no. E-3842.

27161 to 27164. Apr. 26.—Approving proposed locations of C.P.R. stations at Tramping Lake, Sask.; Amisk, Alta.; Primate, Sask.; and Magrath, Alta.; all according to C.P.R. standard A-2 plan on file.

27165. Apr. 29.—Extending for two months from date time within which C.P.R. shall complete work, within limits of its right of way, in connection with removal of old piles and abutments from bed of Big Creek, Tilbury Tp., Ont., as per order 24295, Act. 7, 1915.

27166. Apr. 30.—Amending order 24825, Mar. 10, 1916, re G.T.R. crossing of C.P.R. spur to Dominion Sugar Co., Chatham, Ont.

27167, 27168. Apr. 25, 27.—Approving Bell Telephone Co. agreements with Greenwood Telephone Association, Algoma District, Ont., Jan. 15, 1915; and Lievre River Telephone Co., Labelle and Ottawa Counties, Que., Mar. 6, 1918.

27169. May 2.—Authorizing Canadian Northern Ry. to build main line and siding across highway at Grahamdale, Man.

27170. Apr. 30.—Ordering C.P.R. to build transfer track with Canadian Northern Ry. west of Baintree station, Alta.; to be completed within 60 days after approval of plans; cost to be apportioned equally.

27171. May 1.—Authorizing C.P.R. to build spur for Northern Electric Co., Regina, Sask.

27172. Apr. 22.—Approving plan of structure across Canadian Northern Ry. on public road between Lot 359, Cote St. Laurent Subdivision and Lt. 622, Cote St. Laurent Nord, St. Laurent Parish, Que., as authorized by order 17414, Sept. 7, 1912; and approving clearances.

27173. May 2.—Approving Canadian Northern Ry. revised location in north ½ Sec. 14, T. 26, R. 25, west 3rd meridian, Sask.

27174. May 2.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Lake Lumber Co., in Block 37, Newcastle District, Vancouver Island, B.C.

27175. May 2.—Authorizing G.T.R. to take up siding and spur in Verdun, Que., as authorized by order 15160; to remove piles across tail-race of aqueduct and Little St. Pierre River, and restore dyke on other side of tail-race which was cut when siding was built; and rescinding order 15160, Oct. 24, 1911.

27176. May 2.—Ordering G.T.R. to erect station and platform at Glen Robertson, Ont., by Nov. 1.

27177. May 3.—Amending order 27150, Apr. 25, re C.P.R. train service between Moose Jaw and North Portal, Sask.

27178. May 2.—Ordering Canadian Northern Ry. to enlarge waiting room at Lamont, Alta., and provide heated room for perishable and express shipments; work to be completed by Oct. 1.

27179. May 3.—Ordering Michigan Central Rd. forthwith to appoint day watchman at Tuscarora St., Hagersville, Ont.; wages to be paid 80% by M.C.R. and balance by Hagersville Village.

27180. May 3.—Authorizing Lake Erie & Northern Ry. to install an electric train staff system for protection of G.T.R. in Port Dover, Ont., to be operated jointly.

27181. Apr. 30.—Approving clearances of Oshawa Ry. poles carrying electric wires along, and across G.T.R. yard track at Oshawa, Ont.

27182. May 6.—Approving Temiscouata Ry. by-law, Apr. 29, authorizing C. A. Stewart, Manager, and A. Nadeau, General Freight and Passenger Agent, to issue tariffs of tolls.

27183. May 6.—Ordering G.T.R. to stop trains 13 and 16, on flag, at Hillhurst, Que.

27184. May 10.—Approving British Columbia Electric Ry. standard freight tariff of maximum mileage tolls, C.R.C. 107, effective May 20.

27185. May 8.—Authorizing G.T.R. to build additional sidings for Beaver Wood Fibre Co., Thorold Tp., Ont.; and approving change in existing sidings, as shown on plan.

27186. May 6.—Authorizing G.T.R. to build sidings for Goodyear Tire & Rubber Co. of Canada, New Toronto, Ont.

27187. May 6.—Authorizing Canadian Northern Quebec Ry. to build two sidings for Howard Smith Paper Mills, Crabtree, Que.

27188. Apr. 26.—Ordering C.P.R. to build highway crossing at mileage 82.08, Ste. Agathe Subdivision, Que., at expense of Joly Tp.

27189. May 7.—Approving agreement between Bell Telephone Co. and Megantic People's Telephone Co., Megantic County, Que., Apr. 1.

27190. May 7.—Ordering G.T.R. to make connection between its eastbound passenger trains, due to leave Cornwall 4.15 and 4.45 p.m., arriving Coteau Jet. 5.18 and 5.30 p.m., respectively; and train due to leave Montreal at 5 and now due at Coteau Jet. at 6, arriving in Ottawa at 8.45 p.m.

27191. May 8.—Authorizing C.P.R. to rebuild bridge 41 over Quisibis stream on Edmundston Subdivision, N.B.

27192. May 6.—Authorizing C.P.R. to remove station agent at Senate, Sask., until Sept. 1, when order 26246, Jan. 25, shall be put into effect.

27193. May 9.—Approving Grand Trunk Pacific Ry. revised location of right of way and land required for station grounds in Lot 4200, Cariboo District, B.C.

27194. May 8.—Relieving G.T.R. from providing further protection at crossing of Hespeler road, Galt, Ont.

27195. May 10.—Approving amendment to London & Lake Erie Ry. & Transportation Co.'s by-law 3, Nov. 19, 1912, substituting W. N. Warburton, General Manager, for S. W. Mower.

27196. May 8.—Ordering Grand Trunk Pacific Ry. to install at least a one unit stock yard at Carvel station, Alta., to be completed by Aug. 1.

27197. May 8.—Authorizing C.P.R. to build spur for Fraser, Brace & Co., Montreal.

27198. May 10.—Approving plan, Nov. 1, 1917, showing general layout of falsework for truss span over C.P.R. at Moose Jaw, Sask., subject to conditions to be fixed after hearing by Board in Winnipeg.

27199. May 10.—Authorizing C.P.R. to operate locomotives and cars over G.T.R. siding to John Inglis Co.'s premises at Toronto, and approving clearances.

27200. May 10.—Approving Kettle Valley Ry. location between Princeton and Copper Mountain, B.C.

27201. May 10.—Authorizing G.T.R. to build siding and spurs for Imperial Munitions Board at Beamsville, Ont.

27202. May 10.—Relieving G.T.R. from providing further protection at highway near Dorchester station, Ont.

27203. Apr. 25.—Ordering Canadian Northern Ry. to maintain day and night watchmen at crossing of Marmora St., Trenton, Ont., and to install indicator bell to warn watchmen when trains are approaching from the east.

27204. May 9.—Dismissing application of Provincial Stone & Supply Co., Toronto, for order directing C.P.R. to publish specific commodity rates from Burritts, Ont.

27205. May 6.—Authorizing form of "Release of liability in respect of persons travelling in non passenger cars," for Algoma Central & Hudson Bay Ry.

27206. May 10.—Amending order 21350, Feb. 11, 1914, re crossing protection at Bennet Ave., Maisonneuve, Que., by Canadian Northern Quebec Ry. and Montreal Terminal Ry.

27207. May 11.—Authorizing C.P.R. to rebuild bridge 104.1 over Old Man River, Macleod Subdivision, Alta.

27208. May 7.—Authorizing Quebec Ry., Light & Power Co. to file tariffs increasing passenger tolls 15%, to maximum of 2.875c a mile; effective after compliance with sec. 331 of Railway Act.

27209. May 13.—Authorizing G.T.R. to build two sidings for Ford Motor Co. of Canada, Sandwich Tp., Ont.

27210. May 13.—Authorizing Alberta Public Works Department to build highway over C.P.R. at Czar, Alt.

27211. May 13.—Declaring that Grand Trunk Pacific Ry. is senior company at crossing with Midland Ry. of Manitoba in Lot 55, St. Boniface Tp., Winnipeg.

27212. May 14.—Approving agreement, May 2, between Bell Telephone Co. and Town Line Telephone Association of Stafford and Pembroke, Renfrew County, Ont.

27213. May 14.—Approving Napierville Jet. Ry. bylaw 29, authorizing N. J. Ferguson, G. F. & P. A., to issue tariffs of tolls.

27214. May 15.—Approving Grand Trunk Pacific Ry. revised location across Pine and Mule creeks, mileage 92.20 to 94.60, west of Winnipeg.

27215. May 9.—Ordering G.T.R. to appoint watchmen at crossing of Main St., Hawkesbury, Ont., from 8 a.m. to 8 p.m.; wages to be paid two-thirds by G.T.R. and balance by Town of Hawkesbury.

27216. May 9.—Ordering G.T.R. to install, within 60 days from date, improved type of automatic bell at Regent St., Hawkesbury, Ont., 20% of cost to be paid out of railway grade crossing fund.

27217. May 9.—Dismissing application of Town of Welland, Ont., for order directing Michigan Central Rd. to stop train no. 1 at Welland, as formerly.

27218. May 17.—Amending order 27202, May 10, re crossing protection by G.T.R. near Dorchester station, Ont.

**Quebec & Saguenay Ry. Purchase.**—It was announced, May 17, that an agreement has been reached between the Dominion Government and the company as to the price to be paid for the partially completed line and its rights. The supplementary estimates submitted in the House of Commons May 20, provided not exceeding \$3,489,313 for the purpose of acquiring freeway and clearing of all charges, encumbrances or claims at any public sale, the Q. & S.R. extending from a junction with the Quebec, Montmorency & Charlevoix Ry. to Nairn Falls, 62.3 miles.

**Board of Railway Commissioners' Western Sitting.**—D'Arcy Scott, Assistant Chief Commissioner, and A. H. Boyce, K.C., commissioner, will hold sittings at various points in the west for the hearing of land cases, as follows:—Victoria, June 4; Vancouver, June 6; Calgary, June 10; Edmonton, June 11; Saskatoon, June 12; Regina, June 13; Winnipeg, June 14; Fort Francis, June 17; Port Arthur, June 18.

The Toronto, Hamilton & Buffalo Ry. has obtained power, under sec. 364 of the Railway Act, to enter into running and other arrangements with the Grand Trunk Ry. Power to make similar arrangements with the C.P.R. was obtained in 1917.



## The Canadian Railway War Board's Work.

**Name Changed.**—The Canadian Railway Association for National Defence has changed its name to the Canadian Railway War Board.

**Administrative Committee Meetings.**—Heretofore the administrative committee has met in Montreal, but in view of the number of matters presented having to do with conditions in Ontario, and for the convenience of members whose headquarters are in that territory, it has been arranged to hold meetings alternately in Montreal and Toronto.

**Accidents to Employes Through Carelessness.**—The Chief Operating Officer of the Board of Railway Commissioners has drawn the board's attention to personal injuries sustained by railway employes through being struck by material falling from partly loaded or unloaded cars. By way of illustration, he mentioned a case where a yardman was seriously hurt by lumber falling from a flat car during switching operations. The car had been placed for unloading, some of the stakes and cross pieces had been removed. When the car was moved the load shifted, causing the remaining stakes to break, and releasing the lumber. The shortage of labor and necessity for obtaining maximum service from railway employes, apart from the interests of the men themselves, make it desirable that railway officers constantly keep before their employes the need for care in the performance of their duties, to the end that casualties incident to railway work may be kept at the minimum.

**Agricultural Exhibitions.**—Representations having been made that, in view of the desirability of giving the greatest impetus possible to the campaign for increased food production, the influence that agricultural exhibitions undoubtedly have in stimulating production, and the lack of accommodation in most of the places where exhibitions are held for persons staying over night, the railways should provide reasonable extra train service for those travelling to and from the exhibitions. The board has recommended to the railways that they should provide, up to the extent furnished last year, extra train service, for the accommodation of parties travelling to and from agricultural exhibitions this year.

**Army and Navy Veterans Conventions.** Applications having been made for passenger rates for delegates to conventions to be held in Winnipeg, May 11 to 14, and in Toronto in July, the board decided that as special consideration is rightfully due those who have returned from the front, railways should be recommended to give special rates to delegates attending the conventions named.

**Cinders Prices.**—It is suggested that in order to provide a standard arrangement for sale of cinders by railway companies, all member lines adopt the schedule now in effect on certain roads, whereby a charge of not less than \$10 a car is made for cinders, plus regular tariff freight rate covering railway haulage.

**Embargo Exemptions.**—In laying other than general embargoes, it is requested that member lines make the following exemptions in the order of priority shown:—1. Livestock and perishable; 2. Fuel (coal, coke, charcoal, cordwood, slabs, edgings); 3. Shipments consigned to or on account of Imperial Munitions Board and Director of Overseas Transport; 4. Agricultural implements for spring work and materials required for manufacture of same; 5. Field and garden seeds; 6. Fertilizers and components;

7. Spraying materials and spraying implements; 8. Food for human consumption, including grain, grain products, sugar, salt, canned goods; 9. Food for animals and poultry; 10. Railway material and supplies (other than coal or coke); 11. Supplies for coal mines; 12. Oils; 13. Tank cars, loaded and empty; 14. Empty gas cylinders.

**Freight Tracing.**—With a view to further discouraging unnecessary freight tracing and relieving telegraph wires which are heavily overburdened, the board has suggested to all member lines that they place in effect the arrangement recently adopted by the U.S. Railroad Administration, whereby in wiring replies to shippers or consignees, either in answer to letter request for wire reply or to telegrams, such replies are sent by collect telegram. It is suggested also that unless applicant for information expressly requests telegraphic reply, such communications be answered by mail.

**Glue Stock, Hides, Oil, Etc.**—The board's attention has been directed to the practice existing at certain points of using box cars in good condition for the carriage in bulk of commodities such as green hides, oil, glue stock, etc., which render the car unsuitable for the handling of foodstuffs. In view of the very great demand for equipment for the movement of foodstuffs, at present, which will become still heavier during the year, members are asked to take action to restrict the loading of commodities such as the above mentioned to cars which are unsuitable for the handling of foodstuffs.

**Labor Negotiations.**—Certain railway labor unions, including those whose members are engaged in car and locomotive shops, expressed a desire recently to deal with the railways as a whole, on questions of schedule revision and similar matters, instead of with individual companies as heretofore. This desire was conveyed to the board, by the Dominion Government, and the board decided to appoint a sub-committee of three, with the necessary staff, to deal with all questions of railway labor, on behalf of all the railways which are members of the board, the sub-committee to report to the board's administrative committee. The sub-committee's work includes dealings and negotiations with representatives of railway labor organizations, the obtaining of data required for the conduct of the work assigned to it by the administrative committee, and the submission of the result of negotiations with labor organizations to the administrative committee, whose approval of any proposed agreement or arrangement with labor organizations must be obtained before it can become effective. The board's administrative sub-committee will, under the proposed arrangement, deal on behalf of railways west of the Great Lakes, and in the case of the Canadian Government Railways west of the City of Quebec, with labor matters pertaining distinctly to the lines mentioned, and will refer to the administrative committee all questions of a general nature which may affect the east as well as the west.

The administrative committee appointed as a sub-committee on wages agreements, S. J. Hungerford, General Manager, Eastern Lines, Canadian Northern, as chairman; Geo. Hodge, Assistant to General Manager, Eastern Lines, C.P.R., and H. E. Whittenberger, General Superintendent, Ontario Lines, G.T.R. On Mr. Whittenberger being transferred to Chicago, Robt. Patterson, ex-Master Mechanic,

G.T.R., Stratford, Ont., was appointed to succeed him. We are advised that the appointments to the sub-committee are all a temporary nature, and that the personnel may be changed as may become necessary later. The sub-committee was engaged in Montreal during parts of May in negotiations with representatives of employes of the car, locomotive and mechanical departments of the following railways: Algoma Central, Canadian Government, Canadian Northern, Canadian Pacific, Dominion Atlantic, Duluth, Winnipeg & Pacific, Edmonton, Dunvegan & British Columbia, Esquimalt & Nanaimo, Grand Trunk Pacific, Halifax & Southwestern, Kettle Valley, Quebec Central, Timiskaming & Northern Ontario. After spending some time in the negotiations, they were adjourned pending a decision by the United States Railroad Administration on the wages question, and some representatives of the board went to Washington in connection with the matter.

**Open Top Car Situation.**—At the end of April, Canadian railways owed the United States 14,165 open cars, and so that U.S. railways will not be compelled to restrict the deliveries of their coal cars to Canada, all Canadian railways have been asked to closely follow up the handling of coal cars, to check up the placing and unloading, and to place embargoes against consignees who fail to give disposition orders for their cars within 48 hours of service of notice of arrival, or who fail to unload cars within 5 days after time of placing for unloading.

**Private Sidings Applications.**—Certain member lines have informed the board that on many occasions they have been caused useless expense, and loss of time, as a result of parties applying for lease of site on railway property or construction of private sidings, and after plans and leases were prepared the matter was dropped. With a view to affording protection against such losses, it is suggested that all member lines adopt the practice of requiring a deposit of, say, \$20 to accompany the application for site or siding, of which amount \$10 be applied against engineering and legal expenses and the remainder be credited to the first year's rental, the whole amount to remain in the hands of the railway company in the event of the application being withdrawn.

**Settlers' Effects, With Stoves.**—In view of the danger to life and property involved in the handling of cars of settlers' effects when the cars contain lighted stoves, the board has suggested to member lines that they adopt generally the practice in vogue on certain railways whereby cars of settlers' effects containing stoves lighted, or set up for lighting, are not accepted at shipping point, or interchange point with connecting railway, as the case may be, or moved over the line until the stove is dismantled.

**Ticket Offices.**—Member companies having furnished particulars of up town ticket offices maintained in Canada, the administrative committee is considering what offices can be closed or consolidated without serious detriment to the railway business or inconvenience to the travelling public.

**Tickets To Be Bought Before Boarding Trains.**—The board issued the following notice to the public on May 1:—"Effective May 15, passengers will be required to purchase tickets at ticket office, and will be called upon to show their tickets be-



fore entering train."

In connection with this, it was suggested that assistant superintendents or trainmasters be instructed to see all passenger conductors, advising them how anxious the railways are to carry out the provisions of the notice without any friction or trouble with passengers. It was pointed out that on one road where an effort was made to enforce the rule, the conductors, when finding that passengers were resolved not to purchase tickets at the station, requested them to stand aside and did not allow them to enter the train until all passengers with tickets had entered. This had the effect in some cases of passengers going back for tickets and had an educational value, because, very often, they missed getting comfortable seats, people with tickets having the first choice.

The following circular was issued to trainmen, ticket agents and other employees concerned:—"It is desirable that increased efforts be made by railway employees to have passengers purchase tickets before arrival of trains for which ticket offices are open, and for this purpose the following instructions will take effect, commencing May 15.

"In addition to having ticket offices open as regulations require, and as frequently as their observations indicate to be necessary, agents will announce in a distinct and sufficiently loud voice, the following:—"Please purchase your tickets at office and have them ready to present when entering train." At the larger stations where station masters or station police are employed, they, instead of the agent, will make the announcement.

"Conductors and other employees of trains whose usual duty is to receive the passengers, while standing in their usual positions on station platform, will courteously request passengers to present their tickets before they attempt to enter train. If passengers do not present tickets, courteously request them to procure them at the ticket office, and to enable them to do so, train is to be held a reasonable time, if necessary. All vestibule doors and traps, except those used for receiving and discharging passengers, must be kept closed while train remains at stations. When two or more cars in train are open for use by passengers, two or more vestibule doors must be open for the convenience of passengers. If, after the foregoing efforts are made, a passenger should insist upon boarding a train, indicating a willingness to pay fare on board, no physical obstruction should be offered. If passengers state that they could not procure tickets at stations where ticket offices should be open, conductors will report to proper officer."

The Toronto Terminal Transportation Association is now known as the Toronto sub-committee of the Canadian Railway War Board, reporting to the Ontario sub-committee, which in turn reports to the administrative committee. This has been done to co-ordinate the Toronto association's activities with those of the Canadian Railway War Board's various committees. No arrangements or regulations decided upon by the Toronto sub-committee are effective until approved by the administrative committee.

**War Society Shipments.**—The question having been presented to the board as to the continuation of practice of free handling of goods on account of various patriotic, red cross and relief societies connected with war work, it is recommended to members that they continue the free handling of such shipments. The organizations in connection with whom the board has been addressed are as follows:

France-Amerique Society, St. John Ambulance Association, Serbian Relief Fund Committee, Secours Nationale, Belgian Relief Fund, Red Cross Societies.

### Penalties for Non-Registration of Persons Over 16.

The order in council passed April 22 providing for the registration of all males and females in Canada over 16 years of age, on a day to be fixed by proclamation, provides various penalties for those who do not comply, among others the following:—

"Sec. 34. (e) he shall, for so long as he remains unregistered, forfeit his right and be disentitled to purchase, receive or have in his possession any railway, steamboat or other public conveyance ticket, other than a tramcar or street car ticket, or to travel by any railway, steamboat or other public conveyance, except a tramcar or street car, unless for the purpose of any prosecution or execution of sentence under these regulations."

It is further provided as follows:—

"35. Any person who sells, gives or delivers any railway, steamboat or other public conveyance ticket, other than a tramcar or street car ticket, to an unregistered person after the time when the latter person should have registered, knowing such person to be unregistered; and any person in charge of any railway, steamboat or other public conveyance, except a tramcar or street car, who permits any unregistered person to travel thereby after the time when he should have registered, knowing such person to be unregistered, shall be guilty of an offence, and liable to a fine not exceeding \$100."

"37. Every person who shall have registered shall at all times thereafter carry upon his person his registration certificate, and shall produce it for inspection upon reasonable demand to any peace officer, police officer or constable; who may in particular, without limiting the generality of this section, require any person present or attending at any public assembly, place of public resort or entertainment, ticket or telegraph office, or post office, or being in or upon any car, train or steamboat, to produce his registration certificate upon that occasion; and, if any person so required shall, without reasonable excuse, refuse, neglect, or fail to produce his registration certificate, he shall incur a penalty of \$20, and may, if a male person, be taken immediately before a justice of the peace to be dealt with according to law."

**Taxes on Parlor Car and Sleeping Car Fares.**—The Special War Revenue Act, 1915, provided in sec. 9, subsec. 3, that every purchaser of a sleeping car berth, or parlor car seat, should, in addition to the regular charge, pay a tax of 10c for each berth bought and 5c for each seat bought. An amending act passed at the Dominion Parliament's recent session has raised the tax from 5c to 10c for each seat in a sleeping or parlor car, and to 10% of the price of each sleeping car berth, the latter tax to be not less than 25c in any case.

The Canadian Industrial Reconstruction Association has been organized, to maintain industrial stability, and to secure wise consideration and prudent treatment of problems of reconstruction. Lord Shaughnessy, President, C.P.R., is Honorary President of the association, and H. G. Kelley, President, G.T.R., and E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., are members of the Montreal executive committee.

### Canadian Pacific Railway Construction, Betterments, Etc.

**Eastern Lines.**—It is intended to relay 135 miles of track with new steel rails, to put in 720,000 new tie plates, and 52,000 new rail anchors, and to reballast approximately 400 miles of track. Automatic signals will be installed at Bolton, Ont., and on the main Toronto-Windsor line, between Guelph Jct. and Galt, Ont., and an interlocking plant will be installed at Kempton, Ont. Nine section houses will be built; the locomotive house at Sherbrooke, Que., will be extended; the locomotive house and machine shop at Toronto will be extended; the coaling plant at Bay Shore, St. John, N.B., will be extended, and coaling plants will be built at Mattawamkeag and Fredericton Jct., Sherbrooke and Sortin, Que., and Renfrew and Parkdale, Ont. Additional tracks will be laid at Washburn Jct., Me.; West St. John, St. Martins Jct., N.B.; Shawinigan Falls, Que.; Port Hope, John St., Toronto, and Windsor, Ont. It is estimated that \$1,100,000 will be spent on tie renewals, \$335,000 in improving bridges and culverts, and \$240,000 upon new sidings.

**Chateau Frontenac.**—The company is carrying out an extensive plan of alterations and improvements at the Chateau Frontenac, Que., including the renovation and redecoration of the entire interior, with the exception of the wing added recently. Every bedroom is being renewed, and 48 additional bathrooms are being added. All plumbing and heating pipes are being renewed, and new installations of electric wiring and lighting and telephone equipment are being made. Two passenger and two freight elevators have been replaced by new and improved elevators, and an additional elevator for freight purposes has been added in the new wing. The work is being done in sections, so as to avoid inconvenience to guests, and is under the charge of D. H. Mapes, Engineer of Buildings. (April, pg. 149.)

**Saskatchewan District.**—Tenders are under consideration for altering and enlarging the icehouse at Moose Jaw, Sask.

**Alberta District.**—Tenders are under consideration for the construction of concrete piers and abutment at the Old Man River bridge near Macleod, Alta.

The Board of Railway Commissioners has directed the company to build a transfer track from near Tudor, on the Basano-Irricana Branch, to a connection with the Canadian Northern Ry. west of Baintree on the line into Calgary. This will enable coal shipments from the Drumheller field to be distributed over the C.P.R. lines from Baintree, instead of from Calgary as at present.

**British Columbia District.**—The Vancouver City Council has authorized the company to erect an addition to the passenger car shops at the foot of Drake St., to cost \$11,500.

The Dominion Government has advised the Vancouver City Council that permission was never granted for the erection by the C.P.R. of the bridge across the Kitsilano River, which was originally built in 1886, and after being disused for some years, was rebuilt by the company as a part of the Vancouver & Lulu Island Ry., which was subsequently leased to the British Columbia Electric Ry. The bridge question arises in connection with the removal of the span to provide for the passing through of vessels built at the Coughlan yards. The bridge is a fixed span, which has to be removed to enable vessels to pass through.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta & Great Waterways Ry.**—Owing to the rapid break up of the ice on the Christina River, at the end of April, the company's temporary trestle bridge at Conklin was swept away. The train which was between Conklin and the end of track was held up until the bridge was restored. (May, pg. 186.)

**Capilano Timber Co.**—It was expected that the first six miles of the company's logging railway from North Vancouver into the hill country towards Capilano, would be completed and ready for operation May 30. (Mar., pg. 99.)

**Edmonton, Dunvegan & British Columbia Ry.**—The Edmonton, Alta., City Council has authorized the company to build a platform for the accommodation of its traffic at 121st St. and Nelson Ave., and has authorized the utilities committee to supervise the construction of the necessary spur line there. This is a temporary arrangement for a year. (May, pg. 186.)

**Esquimalt & Nanaimo Ry.**—The Board of Railway Commissioners has given judgment in connection with the question of general traffic rights over the Johnson St. bridge, Victoria, B.C. An order in council passed in 1887 directed the company to provide general highway facilities for the public over the bridge, but nothing was done, as there was no imperative necessity to provide for the traffic. Owing, however, to the development of the Songhees Reserve, and surrounding district, the city desires to have traffic facilities provided in connection with the company's proposed replacement of the present structure. The judgment states that all the documents and exhibits refer to plans for a bridge for vehicular and pedestrian traffic, and that provision has only been made for pedestrian traffic, which must be maintained over any new bridge. As to vehicular traffic, there being a conflict between the company and the city as to the plans, the board felt that application should be made to the Public Works Department, the board apparently not having jurisdiction to order the provision of the accommodation sought. The city council has since memorialized the Public Works Department, asking that it will compel the E. & N.R. to carry out the obligation as to the making of provision of facilities for vehicular and passenger traffic, imposed by the order of 1887.

**Grand Lake Ry. & Transportation Co.** The Quebec Legislature has granted a subsidy of \$5,000 a mile for 10 miles of railway from any point on the Bell River to Grand Lake. This subsidy is to be paid to the company by the Minister of Lands and Forests, by deducting for not more than 10 years, 50% of the duties due to the government for the right to cut, on the timber cut by the company in the region to be crossed by the railway. (June, 1917, pg. 225.)

**Grand Trunk Pacific Ry.**—Under an agreement with the Province of British Columbia, the company undertook to provide highway accommodation on its railway bridge across the Fraser River at Fort George, and to maintain the provincial portion in good order. The cost of the highway portion of the bridge, according to the company, was \$371,000, towards which the province paid \$150,000 on account on June 12, 1916. Since then negotiations have been in progress as to the payment of the balance. An agreement was reached under which the province was to pay a further sum of \$200,000 in full settlement of all claims.

The British Columbia Legislature has authorized the payment of this amount in full settlement of all claims upon the signing of an agreement defining the rights of the province in and to the bridge.

It is reported from Prince Rupert that arrangements are in progress for starting work on enlarged terminal buildings there, including a new station, locomotive house, machine shops and a wharf. (May, pg. 186.)

**Hudson Bay Ry.**—Senator Casgrain suggested in the Senate, on May 15, that all construction in connection with this project be discontinued during the war at any rate, and expressed his continued opposition to the entire project, concluding with the statement that some members of the house, if they lived long enough, would see that he had reasons for opposing the enterprise. Sir James Lougheed, in reply, said he believed that when the Hudson Bay route came to be operated, it would be demonstrated to be one of the most successful of Canada's transportation systems. No construction on the road itself had been done during the year. A bridge had been completed at the second crossing of the Nelson River, but no additional track had been laid for over a year. There had been completed 332 miles of the line, and track had yet to be laid on 92 miles. Of the completed mileage, trains had been operated on 214 miles, a daily train service being run on part of the line. The part of the line operated had been self sustaining. The line was being operated by the contractors and the government. When the line was finally completed it would, he believed, be found of inestimable advantage to the people of the country through which it runs. The last serious transportation of materials to Nelson occurred in 1914. In that summer 36 voyages were successfully made and many tons of freight carried by ordinary tramp steamers without hazard or difficulty. With specially constructed ships the season, it was believed, could be considerably prolonged. During six weeks of this period engineers and navigators reported that the navigation to the bay was safer than the navigation of the St. Lawrence to Quebec and during the remaining six weeks the navigation of Hudson Strait was as safe as the route to Quebec.

The Minister of Railways stated in the House of Commons May 17, that there had been expended upon the Hudson Bay Ry. up to Feb. 28, \$20,161,000, of which \$13,814,000 was on account of the railway and \$6,347,000 on account of the harbor and terminals at Port Nelson, Man. The latter sum includes the expenditures incurred in the purchase of steamships which are now in general service throughout the year, as well as the valuable plant at Port Nelson. The north and south arms of the bridge across the Nelson River at Kettle Rapids were connected in Dec., 1917, so that track laying could be continued this season. Grading between Kettle Rapids and Port Nelson has been fully completed, and train filling and ballasting had been gone on with on the line up to Kettle Rapids. At Port Nelson a restricted programme was followed, in which materials and supplies on hand were utilized. Owing to the general shortage of ocean tonnage, no further shipments of supplies were made to Hudson Bay this season. The island cribwork has been extended and dredging has been continued.

**Intercolonial Ry.**—We are officially advised in respect to a press report that it is proposed to expend about \$100,000 on improvements on the railway yards at Levis, Que., that the only work at present proposed to be done consists, in addition to some slight track changes in the Laurier Ave. yard there, of some alterations to the interior of the old station building, in order to improve the facilities for handling passenger business. (May, pg. 186.)

**Kettle Valley Ry.**—Arrangements for starting work on the construction of the branch from near Princeton, B.C., to the Canadian Copper Co.'s mines at Copper Mountain are reported to have been completed by W. P. Tierney, contractor, and preliminary work has been started. The branch will be 15 miles long, and the work will include several open cuts of considerable height, one big fill, as well as a number of small ones, 27 lengths of trestle work, and the boring of four tunnels of considerable length. It is expected to have the branch completed within a year. (May, pg. 186.)

**The Magdalene River Ry.** was originally projected in 1907, when the Quebec Legislature incorporated the company to build a railway from near Cap a la Ours to the Little Falls of the Magdalene River, and thence to a connection with the Atlantic, Quebec & Western Ry.'s projected inland extension. In 1916 the legislature passed an act confirming the original charter powers. The legislature last session authorized the company to build a line from the prevailing authorized line to the Great Falls on the Magdalene River, and by the valley of the Dartmouth River to deep water in Gaspé Basin, and to connect there with the Atlantic, Quebec & Western Ry. This line of railway need not be completed until 1920, and in connection with its completion, is authorized to operate its line on all wharves, piers or other constructions to deep water in Gaspé Basin, and to build and maintain, if necessary, its own wharves, piers and deep water facilities. The provisional directors were: C. W. Mullin, S. H. Boardman, Bangor, Me.; T. B. Launing, Boston, Mass.; J. O. Drouin, E. Brassard, Montreal. The notices in connection with the recent application were signed by F. Murphy, New Carlisle, Que., as Secretary of the company. (Jan., p. 12.)

**National Transcontinental Ry.**—Tenders were received to May 29 for the construction of concrete culverts, stream tunnels and concrete trestles on the Fort William and Raith subdivisions, including 3 concrete trestles, two 10 x 10 ft. stream tunnels, 4 reinforced culverts, the longest being 12 ft., and one double 16 ft. culvert. (Jan., pg. 12.)

The Minister of Railways stated in the House of Commons, May 17, that it is impossible for the government to go into the question of widening the gauge of the P.E.I.R. while the war continues. It is not merely a question of widening the gauge, but it practically means the entire reconstruction of the railway and the provision of new equipment at an expenditure of at least \$2,000,000, which cannot be entertained at present.

The total amount expended upon the car ferry works is \$2,875,000. The department asked a further appropriation of \$65,000 to cover certain minor additions which had been deferred until actual operating conditions could be observed. The main contracts for the construction



of terminals were completed during 1917, and the car ferry steamship Prince Edward Island was placed on the route in the beginning of Oct., 1917. All freight offering since that date has been handled satisfactorily by the new route.

**Pacific Great Eastern Ry.**—The contract for the erection of the new bridge over the Capilano River has been let to Robertson & Partners, Limited, who expect it completed by July 1. The line is being operated to Ambleside, and it is expected to reopen traffic to Whytecliffe, 13 miles, soon after the Capilano bridge is completed.

In connection with the line from Squamish, which is in operation to Clinton, 167.7 miles, it has been announced by the British Columbia Government that it is not proposed to do anything more at present than to complete the line to Soda Creek, where there is a navigable stretch of the Fraser River to Fort George. Grading has been completed to Soda Creek, but there are a number of small bridges to be erected. Rails have been laid for a few miles beyond Clinton, and it is expected that deliveries of the 20,000 tons of steel rails on order in the U.S., will be made at an early date. It is hoped to complete this work by the end of the year, and to have the line in operation with a river connection to Fort George, in the spring of 1919. (May, pg. 187.)

**Prince Edward Island Ry.**—C. A. Hayes, General Manager Canadian Government Ry.'s Eastern Lines, concluded a three day inspection of the line recently. Before leaving the Island he met the Charlottetown Board of Trade and discussed the commercial aspects of the suggested standardization of the gauge of the railway. He stated that the practical side of the matter would have to be fully considered before any definite decision was reached. (May, pg. 187.)

**Quebec & Atlantic Ry.**—The Quebec Legislature has incorporated a company with this title to build a railway from Quebec to Chicoutimi, thence to Cape St. Charles on the Labrador coast, together with branch lines north and south; and also to secure a connection with the National Transcontinental Ry. The company is empowered to carry on a lumbering business within the counties of Quebec, Montmorency, Charlevoix, Saguenay, Chicoutimi, Lake St. John, and in the territory known as New Quebec; it may also operate sawmills north of the St. Lawrence River, and eastward of the St. Charles River; carry on farming and mining operations, own and operate steel plants, construct canals, build and operate steam and other vessels, wharves, docks, etc., and subscribe for stock in such companies. The authorized capital stock is \$1,000,000, in ordinary and preferred stock, as may be deemed advisable; the company may issue bonds on its railway undertaking to the extent of \$60,000 a mile, and such securities as may be necessary for its other undertakings. The company's office is to be located in Quebec. The provisional directors are: H. Lavigne, N. Drouin, A. Picard, L. H. Gaudry and P. J. Cote, Quebec.

**Quebec Bridge.**—In the Dominion estimates for the year, \$700,000 is provided on construction account. In the discussion in the Commons it was stated that, although the Canadian Government Railways were operating trains over the bridge, it had not been taken over from the contractors—the St. Lawrence Bridge Co. The Minister of Railways stated that none of the other railways converging upon Quebec had made applica-

tions for running rights over the bridge. It was not expected that such rights would be applied for until after the war. (Feb., pg. 57.)

**Quebec & Saguenay Ry.**—It was reported in Montreal, May 6, that track had been laid to Baie St. Paul, Que., and that it was expected to have track laid to Murray Bay, 56 miles, by Aug. 30.

**River Rouge Ry.**—The Quebec Legislature has incorporated a company with this title to build a railway from Amherst Tp., Labelle county, southerly through Amherst, Ponsonby, Little Nation, Arundel, Harrington and Grenville townships to the Ottawa River between Montebello and Grenville. The authorized capital stock is \$300,000, and the office is to be in Montreal. The provisional directors are: A. Orsati, J. R. Meadowcroft, A. H. Ross, D. E. Parker, A. G. Spencer, Montreal. (Mar., pg. 98.)

**Roberval-Saguenay Ry.**—A press report states that the company is about to invite tenders for the building of a small extension to its lines. J. F. Grenon, Chicoutimi, Que., is Chief Engineer.

**Roberval-Saguenay Ry.**—The Quebec Legislature has authorized the granting of a subsidy of 3,000 acres of land a mile, not convertible into cash, for the construction of the following lines of railway by the Ha Ha Bay Ry., which is now merged in the R.-S. Ry.—An extension of the main line from Mathias Jct. to the wharf at Bagotville, 0.44 of a mile; a branch from La Brosse Jct. to Chicoutimi Basin, 3½ miles; a branch from Laterriere to Lake Kenogami, 12 miles; a branch from Laterriere to Riviere du Moulin, half a mile; a branch from St. Alexis, 1½ miles; and an extension to deep water at Port Alfred, half a mile. (Jan., pg. 12.)

**Toronto, Hamilton & Buffalo Ry.**—The proposal to apply to the Dominion Parliament at the recent session for authority to extend the line from Hamilton to Toronto was abandoned. (Mar., pg. 98.)

### Canadian Northern Railway Construction, Betterments, Etc.

A press report states that a contract has been let to Jos. Gosselin, Quebec, for the erection of the substructure of a bridge across the St. Maurice River, at Grand Mere, Que. The superstructure will be erected by the Dominion Bridge Co., Montreal. The estimated cost of the entire work is \$170,000.

Satisfactory progress is reported to have been made with the company's terminal facilities at Leaside, Toronto. The buildings under construction include a 10-stall locomotive house with turntable, water tank and coaling station, locomotive repair shop, freight and passenger car repair shops, planing mill, transfer table, icehouse, and general offices.

M. H. MacLeod, General Manager, Western Lines, was in Port Arthur, May 3, in consultation with the city council in connection with trackage matters at the Port Arthur Pulp & Paper Co.'s plant.

The Fort William, Ont., City Council, on May 14, authorized the company to build a spur line across Cameron St. to reach the freight sheds proposed to be erected near the new station building.

A press report states that six work trains will be put on during the summer between Port Arthur and Rainy River, Ont.; that a considerable mileage will be relaid with heavier rails, and that large quantities of ballast will be spread. The same report states that a new brick station will be built at Rainy River.

A press report states that during this year about \$2,000,000 will be expended upon betterments of the company's lines west of Winnipeg, and that the major part of this work will be done on the lines in Saskatchewan and Alberta. The line from Battleford to Edmonton, 248 miles, and from Edmonton to Edson (a station on one of the sections of the Grand Trunk Pacific Ry., linked up when track was taken from these two companies' lines for use in France), will be ballasted. There will be considerable sums expended upon station buildings, works of water supply, building section houses, the laying down of passing tracks, and increasing yard and siding accommodation all along the lines. New 80-lb. rails will be laid from Manson to Hanna, 42 miles, and 25 miles of second track work will be built from Drumheller, easterly, to provide for the increasing traffic from the collieries there. In the vicinity of Edmonton, work is reported to have been restarted on the filling in of the trestle at the west end of the bridge across the Saskatchewan River at Fort Saskatchewan, and it is reported filling in on all the trestlework on the line right up to the Edmonton city limits will be completed this season.

The Medicine Hat, Alta., City Council has been advised of the passing of an order in council authorizing the company to proceed with the construction of the Hanna-Medicine Hat branch. Hanna is situated at mileage 262 on the line from Saskatoon to Calgary, 52 miles west of Drumheller, where the line south from Vegreville, runs in, and projected branch runs southerly and easterly. A press report states that if rails can be obtained, track will be laid to the South Saskatchewan River this year. (May, pg. 196.)

Tenders were received to May 27 for the excavation of a reservoir at McCreary, mileage 142.1, Dauphin subdivision, Man.

**Nelson & Fort Sheppard Ry. Land Grant.**—The British Columbia Legislature has passed an act defining the lands granted as a subsidy in aid of the building of this railway. Under the terms of the N. & F.S. Ry. Subsidy Act of 1892, provision was made for the granting of lands in the West Kootenay electoral district as a subsidy in aid of construction, and on Mar. 8, 1895, a crown grant for Township 9A, Kootenay District, with the exception of certain areas specifically named and "all other lands which, prior to Mar. 23, 1893, were alienated by the Crown or held in presumption, uncompleted sale or lease, or as mineral claims." Doubts have arisen as to certain properties, and both the Crown and the company have erroneously assumed ownership of certain properties in the district. A map has been prepared of all the land within the grant, on which are shown all the areas claimed by the company under the grant of 1895, and of the lands excepted under the grant. Any claims to possession of any of these lands founded on the strength of a grant or presumption prior to 1893, are to be made within three months, and will be pronounced upon by a commissioner. After the expiration of three months all claims for such lands will be barred.

The Saskatchewan Co-operative Elevator Co. has awarded a contract to the Fegles-Bellows Engineering Co., Fort William, Ont., for the construction of a hospital elevator at Port Arthur, Ont., to be completed by the autumn. The working house will have storage capacity for about 200,000 bush., and the storage annex will have capacity for 450,000 bush. It will be of reinforced concrete construction, with electrically driven equipment.



## Railway Rolling Stock Orders and Deliveries.

The G.T.R. has received 240 box cars, 80,000 lb. capacity, from American Car & Foundry Co.

The Bengal & Nagpur Ry., India, has ordered 160 cars from National Steel Car Co., Hamilton, Ont.

Canadian Government Railways have received 5 mikado locomotives from Canadian Locomotive Co.

The C.P.R. has ordered 136 box cars and 10 mikado type locomotives, to be built at its Angus shops, Montreal, and 12 vans at its Winnipeg shops.

The Canadian Northern Ry. has received the balance of the 500 box cars ordered by the Dominion Government last year from the National Steel Car Co.

The C.P.R., between Apr. 15 and May 15, received 2 steel baggage and express cars, 101 freight refrigerator cars, and 2 decapod locomotives, from its Angus shops, Montreal.

The Argentine Government is reported to be in the market for \$5,000,000 worth of railway material, and it is stated that the purchases will be made in Great Britain and the U.S.

The Timiskaming & Northern Ontario Ry. has ordered a steel snow plough from Canadian Car & Foundry Co. We are advised that it will be similar to those built recently by the company for the C.P.R. and Canadian Government Railways.

The Dominion Government has, we are officially advised, ordered 15 additional Pacific type passenger locomotives, and 20 additional switching locomotives, from Montreal Locomotive Works, the prices being arranged on the same basis as those already on order, particulars of which were given in our May issue. Delivery is to be made not later than Dec. 31.

United States press reports stated recently that the Canadian Car & Foundry Co. was in line for a substantial part of the large order for cars to be placed by the U.S. Government. It has since been stated that the reason that the order did not materialize, was that U.S. car building companies had made strong objection to any part of the order being placed outside the U.S.

The locomotive building companies which have been given orders for locomotives recently by the Dominion Government, for the Canadian Government Railways, Canadian Northern Ry. and Grand Trunk Ry., are experiencing some difficulty in getting sufficient plates rolled in the United States, owing to the U.S. Government giving priority to shipbuilding requirements. The Dominion Government has taken the matter up with the U.S. Government and it is expected that it will be possible to obtain sufficient plates to enable the locomotives to be built within the contract time.

Jacques Bureau, M.P., stated in the House of Commons recently, in the discussion in connection with railway rolling stock orders, that he had a letter from a person in Three Rivers, Que., who had had considerable experience in car building, and who was prepared to deliver 10 freight cars a day, beginning in five months from date of order, provided the order was of sufficient size to justify him in starting manufacturing. We are informed that the person referred to is Mr. Ditchfield of the Mechanical Engineering Co., Three Rivers, and who was at one time with the Canadian Car & Foundry Co.

The Canadian Government Railways' ballast cars, 450 of which have been or-

dered from the Hart-Otis Car Co., as mentioned in our last issue, will be designed to carry 100,000 lb. with a 10% overload. They will be equipped with Simplex couplers, 5 by 7 in. shank; Yost friction draft gear with M.C.B. springs; McCord journal boxes and M.C.B. journal bearings, 5½ by 10 in.; Simplex truck bolsters, and cast iron wheels, 33 in. diam. They will be built of wood, and 250 will be with side dump only, and the balance with side and center dump. Following are the chief dimensions:—

Length over end sills	36 ft. 8 in.
Width over side sills	8 ft. 9 in.
Length inside as hopper car	20 ft. 10 in.
Length inside as gondola car	34 ft. 8 in.
Width inside	8 ft. 8 in.
Width over all	10 ft. 3¾ in.
Width at top	9 ft. 9¾ in.
Height from rail to top of floor	4 ft. 4¼ in.
Height from rail to top of car	8 ft. 4¼ in.
Height inside	4 ft.
Truck centers	26 ft. 8 in.
Wheel base of truck	5 ft. 6 in.
Total wheel base of car	32 ft. 2 in.
Length of hopper door opening	16 ft. 8½ in.
Width of hopper door opening	2 ft. 1 in.

Following are chief details of the 25 general service, and 25 water service, tank cars, which the Dominion Government has ordered from Pressed Steel Car Co., as mentioned in our last issue:—

Length over striking plates	36 ft. 6 in.
Center to center of trucks	26 ft.
Width over running boards	10 ft. 1 in.
Width over all	10 ft. 2¼ in.
Height from rail to center of tank	7 ft. 6 in.
Height from rail to bottom of center sills	26 ft. 6 in.
Height from rail to center of draft gear	2 ft. 10½ in.
Length over tank heads	33 ft. 6 in.
Diam. of tank inside at heads	7 ft. 2 in.
Length over running boards	32 ft. 6 in.
Height from rail to top of running boards	3 ft. 11¼ in.
Height from rail to top of brake mast	7 ft. 9¼ in.
Truck wheel base	5 ft. 6 in.
Journals	5½ by 10 in.
Tank capacity	8,000 imp. galls.
Height from rail to highest point on dome (general service)	13 ft. 3¼ in.
Diam. of dome (general service)	5 ft.
Height from rail to highest point on manhole (water service)	12 ft. 4½ in.
Diam. of manhole (water service)	1 ft. 7 in.
Air brakes	Westinghouse K.C. 1012 with J.M. expander rings
Couplers	M.C.B. cast steel, type D
Body center plates	cast steel
Bolsters	Simplex
Brake beams	M.C.B.2
Brake shoes	Dominion steel back
Journal boxes	McCord malleable
Journal wedges	cast steel
Wheels	M.C.B. grey iron
Journal bearings	M.C.B.

The Timiskaming & Northern Ontario Ry. snow plough, which has been ordered from the Canadian Car & Foundry Co., will be fitted with spring draft gear and Simplex couplers. The front end will have a draw bar casting designed to receive M.C.B. knuckle; the wings are to be flared at top and bottom for elevating the snow, and will be operated by air, and the apron at front will be arranged for operation by hand as well as by air. The leading trucks, which will be of the arch bar design, will carry wheels 28 in. diam., McCord journal boxes, 5 x 9 in. M.C.B. axles, brasses and wedges, Simplex bolsters with rollers and friction surfaces to take care of lateral movement when going round curves at high speed, and ice cutters operated by air and springs. The rear truck will have cast iron wheels 33 in. diam., Simplex brake beams and 4¼ x 8 in. axles. The chief dimensions will be as follows:—

Length over all	32 ft. 1 9/16 in.
Width over side sills	8 ft. 9¼ in.
Height rail to top of eaves angle	11 ft. 3 in.
Height rail to top of cupola, about	14 ft. 10 in.
Width over wings extended	16 ft.
Extreme width, cupola	9 ft. 8¼ in.
Extreme length, cupola	4 ft. 11¼ in.
Truck centers	18 ft.
Wheel base, leader truck	4 ft. 2 in.
Wheel base, rear truck	5 ft. 3 in.
Weight, approximate	60,700 lb.

## Railway Finance, Meetings, Etc.

**New Brunswick & Prince Edward Island Ry.**—The Minister of Railways stated in the House of Commons, May 2, that this railway, running between Sackville and Cape Tormentine, N.B., was acquired by the Dominion Government as and from Aug. 1, 1914, the purchase price being \$270,000. There had been paid \$180,000 on account of principal and \$18,552.32 on account of interest. The reason for the non payment of the balance of the purchase money was the inability of the company, in view of certain outstanding bonds, to give a clear title to the property.

**Maritime Coal, Ry. & Power Co.**—Following are the officers and directors for this year:—President, W. Hanson; Vice President, A. E. Dymont; other directors, Senator Mitchell, A. MacLaurin, D. W. Campbell, E. Hanson, W. L. Magden, and W. H. Tothe; Secretary, R. Wilson, Jr.

**Nakusp & Slocan Ry.**—Under the terms of the Railway Aid Act of 1893, and Nakusp & Slocan Ry. Act of 1894, the Province of British Columbia guaranteed bonds of this railway for £131,400 at 4%, the bond issue falling due July 1, 1918. The legislature has authorized the payment of the principal of the bonds out of the consolidated revenue fund of the province, in the event of the company failing to pay it.

**New York Central Lines.**—There was deposited with the Secretary of State at Ottawa, April 6, an agreement between the Guaranty Trust Co., New York, and the New York Central Rd., the Michigan Central Rd., the Cleveland, Cincinnati, Chicago & St. Louis Rd., the Pittsburg & Lake Erie Rd., and the Toledo & Ohio Central Rd., under the provisions of the New York Central Lines Trust of 1913.

**Timiskaming & Northern Ontario Ry.** Passenger receipts for March, \$51,403.97; freight receipts, \$214,884.14; total revenue, \$266,288.11, against \$47,554.71 passenger receipts; \$127,641.23 freight receipts; \$175,195.94 total revenue for Mar., 1917. Aggregate total revenue for three months ended Mar. 31, \$575,182.39, against \$459,515.98 for same period 1917.

**United States & Canada Ry.**—Following are the officers and directors for this year:—President, H. G. Kelley; Vice President, U. E. Gillen; Secretary-Treasurer, F. Scott; other directors: J. E. Dalrymple, W. T. Ardley, J. A. Yates, F. J. Watson, G. E. Britton, W. J. Snarh. This is a G.T.R. subsidiary, owning the line from Massena Springs, N.Y., to the International Boundary at Fort Covington, about 21 miles.

**White Pass & Yukon Route.**—Earnings for February, \$8,256, against \$18,441 for Feb., 1917. Aggregate earnings for two months to Feb. 28, \$19,161, against \$39,207 for same period 1917.

**Locomotive Headlight Regulations.**—General order 199, passed by the Board of Railway Commissioners July 24, 1917, and published in Canadian Railway and Marine World for Sept., 1917, required each railway company to equip its locomotives used in road service, between sunset and sunrise, with headlights which will enable persons with normal vision, in the cab of a locomotives, under normal weather conditions, to see a dark object the size of a man for 1,000 ft. or more ahead of the locomotive, such headlight to be maintained in good condition. By general order 225, passed April 4, 1918, general order 199 has been amended by substituting 800 ft. for 1,000 ft.



# Mainly About Railway People Throughout Canada.

**E. W. Williams**, Travelling Inspector, G.T.R., London, Ont., returned to duty during May, after an absence through illness.

**Ashmore Kennedy**, C.P.R. locomotive man, Winnipeg, has been re-elected Assistant Grand Chief of the Brotherhood of Locomotive Engineers for six years.

**Hon. J. D. Reid**, Minister of Railways and Canals, and **Hon. F. B. Carvell**, Minister of Public Works, left Ottawa on May 25 for a fishing trip up the Gatineau River.

**Lord Shaughnessy**, K.C.V.O., has been given the degree of Doctor of Laws by McGill University, Montreal, for his distinguished services to Canada and the Empire.

**T. Duff Smith**, Fuel Agent, Grand Trunk Pacific Ry., addressed the Canadian Society of Civil Engineers, Manitoba Branch, at Winnipeg, recently, on the subject of coal.

**C. N. Monsarrat**, M.Can.Soc.C.E., Chairman of Quebec Bridge Commission, has also been appointed Consulting Engineer of the Dominion Government, with office in Ottawa.

**W. A. Mather**, Assistant General Superintendent, British Columbia District, C.P.R., Vancouver, who has been suffering from neuritis, was reported during May to be improving rapidly.

**Sir Edmund B. Osler**, President, Dominion Bank, and a director of the C.P.R., has been elected a director of Imperial Oil, Ltd., in place of the late T. H. Smallman, Vice President, London, St. Ry.

**Hon. F. Cochrane**, M.P., formerly Minister of Railways and Canals, received word, May 23, that his brother, **James Cochrane**, who farmed at Clarenceville, Que., had been killed in a motor accident near Milton, Vt.

**A. McL. Campbell**, of the C.P.R. accounting staff at Montreal, was presented with a club bag by his associates, May 15, on leaving to take up his duties as general accountant, Lake Erie & Northern Ry. and Grand River Ry., at Galt, Ont.

**Col. F. Firebrace**, of Crawley Down, Sussex, Eng., who died recently, was Chairman of the Great Indian Peninsula Ry., and a director of the Grand Trunk Ry. for 22 years. He left an estate of £24,297 gross value.

**C. Graham Drinkwater**, B.Sc., Vice President, Canadian Fairbanks-Morse Co., Montreal, has been elected by McGill University graduates, as a representative fellow in the applied science faculty, for three years from Sept. 1 next.

**J. J. Cunningham**, who died at Brantford, Ont., May 19, was formerly in the G.T.R. Freight Department in Montreal, retiring several years ago. He came to Canada in 1872, prior to which he had spent some years in railway service in Ireland.

**V. R. Hawthorne**, who has latterly been engaged in work for the American Railway Association, has been appointed Secretary of the American Railway Master Mechanics' Association and the Master Car Builders' Association, vice **J. W. Taylor**, deceased. He was formerly in the Pennsylvania Rd. service.

**Howard P. Creighton**, who has been appointed Bridge and Building Master, C.P.R., Schreiber Division, Algoma District, Schreiber, Ont., was born at Bristol, Que., Mar. 16, 1888, and entered C.P.R. service

in May, 1908, since when he has been, to Apr., 1910, bridge man, Ottawa, Ont.; May, 1910, to Aug., 1912, bridge man, Chisleau, Ont.; Aug., 1912, to May, 1918, bridge foreman, Chisleau, Ont.

**Brigadier-General H. N. Ruttan**, M.Can. Soc.C.E., of the Canadian Militia, and formerly general officer commanding military district 10, at Winnipeg, has retired from the militia service, and has been granted six months leave with full pay and allowances. He has been connected with the militia since early life, and was for 30 years City Engineer at Winnipeg, retiring a few years ago with a pension.

**James Boyd**, Assistant Engineer, Hamilton Division, G.T.R., who died at Hamilton, Ont., May 20, aged 41, was born at Airdrie, Scotland. After graduating from Glasgow University, he spent 10 years in North British Ry. service there, and came to Canada in May, 1910, when he entered G.T.R. service as Assistant to Resident Engineer, Middle and Southern Divisions. He was appointed Assistant Engineer, Hamilton Division, Feb., 1913. He was a member of the Engineers Club of Toronto, of the American Railway Association, and also of the 13th Regiment of Hamilton.

**Henry K. York**, who has been appointed Car Foreman, C.P.R., Alyth, Alta., was born at Victoria Corner, Carleton County, N.B., Mar. 20, 1881, and entered C.P.R. service, Dec. 3, 1903, since when he has been, to June 30, 1904, car repairing, Fort William, Ont.; June 30, 1904, to Feb. 28, 1905, air brake tester, Fort William, Ont.; Feb. 28, 1905, to May 20, 1906, car inspector, Fort William, Ont.; May 20, 1906, to May 1, 1908, Assistant Car Foreman, Fort William, Ont.; May 1, 1908, to June 30, 1910, Car Foreman, Ignace, Ont.; June 30, 1910, to Apr. 27, 1914, Car Foreman, Kenora, Ont.; Apr. 27, 1914, to Nov. 30, 1917, Car Foreman, Transcona, Man.; Nov. 30, 1917, to Mar. 31, 1918, Car Foreman, Swift Current, Sask.

**Jos. W. Taylor**, Secretary, American Railway Master Mechanics' Association and Master Car Builders' Association, and also Secretary of the Western Railway Club, died suddenly at Chicago, Ill., Apr. 24, from organic heart disease. He was born at Saltsburg, Pa., Mar. 9, 1862, and entered railway service with the Erie Rd. as locomotive fireman. He was subsequently in Westinghouse Air Brake Co.'s service at Chicago, and about 19 years ago he gave up his position to devote his time to the secretarial work of the mechanical associations named. A great deal of credit is due to him for the successful organization of the work of the associations, which has increased in volume and importance each year, with the growth of membership.

**J. B. Blair**, whose appointment as Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, Que., was announced in our last issue, was born at Whitby, Ont., Nov. 17, 1876, and educated at the Dufferin and Normal Schools, Toronto. He entered railway service in May, 1894, since when he has been, to June, 1914, consecutively in various capacities in train service, with the New York, Ontario & Western Ry., Norwich, N.Y.; Chicago & North Western Ry., Chicago, Milwaukee & St. Paul Ry., and Southern Ry.; June, 1914, to Jan., 1916, General Yardmaster, C.P.R., Windsor, Ont.; Jan. to Feb., 1916, Assistant Superintendent, C.P.R., London, Ont.; Feb., 1916, to Apr.,

1918, Assistant Superintendent, Montreal Terminals Division, Quebec District, C.P.R., Montreal.

**William Tansley**, who has been appointed Car Service Agent, New Brunswick District, C.P.R., St. John, N.B., was born at Shelburne, Ont., Dec. 27, 1872, and entered C.P.R. service in Sept., 1889, since when he has been, to 1900, operator and agent at various points on the Ontario Division; 1901 to 1907, dispatcher, Toronto; 1907 to 1912, Chief Dispatcher, Toronto; 1912 to 1914, Assistant Superintendent, Havelock, Ont.; 1914 to 1915, Assistant Superintendent, Toronto; May 18 to July, 1915, Assistant Superintendent, Smiths Falls, Ont.; July to Dec., 1915, acting Superintendent of Car Service, Eastern Lines, Montreal; Dec., 1915, to Feb., 1916, Assistant Superintendent, Montreal Terminals; Feb., 1916, to Jan., 1917, Assistant Superintendent, London, Ont.; Jan. to Apr., 1917, acting Superintendent, London, Ont.; Apr., 1917, to Apr., 1918, Superintendent, Laurentian Division, Quebec District, Montreal.

**E. L. Lancelot**, who has been elected a member of the Canadian Society of Civil Engineers, was born at Port Arthur, Ont., Jan. 14, 1883, and entered railway service in 1898, as rodman on location and construction, Restigouche & Western Ry. in New Brunswick. In 1901 he was clerk to the first field engineer, Dominion Iron & Steel Co., Sydney, N.S.; 1902 to 1903, draftsman and instrument man, Bangor & Aroostook Ry., Houlton, Me.; 1903 to 1904, instrument man, Chicago, Indianapolis & St. Louis Ry., Mattoon, Ill.; 1904 to 1905, Resident Engineer on construction, Toronto-Sudbury line, C.P.R., French River, Ont.; 1905 to 1906, chief draftsman, Construction Department, C.P.R., Toronto; 1906 to 1908, Assistant Division Engineer, Toronto-Sudbury line and Muskoka yards; 1909 to 1910, Resident Engineer on waterworks construction, Wetaskiwin, Alta.; 1910 to 1915, with The John Galt Engineering Co., Calgary, Alta., for the latter portion, as Vice President and Secretary; 1915, topographer, Dominion Government survey of Milk River, Alta.; and from 1916, Special Inspector, Irrigation Branch, Interior Department, Calgary, Alta.

**John M. Rapelje**, whose appointment as acting Vice President in charge of operation of lines east of St. Paul, Minn., Northern Pacific Ry., was announced in our last issue, was born at Chippewa, Ont., Jan. 22, 1857, and entered railway service in Aug., 1879, since when he has been, to May, 1882, consecutively, brakeman, G.T.R., and fireman, Atchison, Topeka & Santa Fe Ry.; May, 1882, to Nov., 1887, conductor, C.P.R.; Jan., 1888, to June, 1898, conductor, Yellowstone Division, Northern Pacific Ry.; June, 1898, to June, 1902, Trainmaster, and again conductor, same division; June, 1902, to Apr., 1905, Trainmaster, same division; Apr., 1905, to July, 1908, Superintendent, same division, Glendive, Mont.; July, 1908, to May, 1910, Superintendent, Rocky Mountain Division, same road, Missoula, Mont.; May, 1910, to Apr., 1912, Superintendent, Idaho Division, same road, Spokane, Wash.; Apr., 1912, to May, 1914, General Superintendent, Mandan, N.D., to Paradise, Mont., same road, Livingston, Mont.; May to Oct., 1914, Assistant General Manager, same road, St. Paul, Minn.; Oct., 1914, to Apr., 1918, General Manager, lines east of Paradise, Mont., same road.



## Freight and Passenger Traffic Notes.

The Greater Winnipeg Water District Board has fixed the rates on its railway on the same basis as the other railways centering on Winnipeg.

The Canadian Northern Ry., according to a Vancouver dispatch, will not increase the number of trains in and out of that city over the summer schedule from 1917.

A Vancouver, B.C., press report states that it is likely that the train which was run from St. Paul, Minn., to Vancouver during last summer will not be operated this year.

The Marsh Navigation Co. is operating a passenger and freight steamboat service on Lake Timagami, connecting with the Timiskaming & Northern Ontario Ry. at Timagami, Ont.

The Edmonton, Dunvegan & British Columbia Ry. train leaves Edmonton at 4.50 p.m. Mondays and Thursdays for the Grande Prairie and Spirit River, returning at 7.15 p.m. on Wednesdays and Saturdays.

The Quebec & Saguenay Ry. is reported to have started a daily train service from Quebec to the St. Francis River, Que., and expects to put on a freight service as far as Baie St. Paul, Que., 16 miles beyond the St. Francis River, at an early date.

The C.P.R. has resumed running observation cars on trains 1 and 2 between Montreal and Vancouver, and on trains 3 and 4 between Toronto and Vancouver. These cars were taken off during the winter as a part of the fuel conservation plans.

The car ferry service schedule between Borden, P.E.I., and Tormentine, N.B., for the summer season commenced May 1, leaving Borden daily at 8.55, reaching Tormentine an hour later, and returning leaving Tormentine at 3.30 p.m., reaching Borden at 4.30 p.m.

The Canadian Government Railways on May 1, cancelled all fares and arrangements for the granting of Saturday to Monday excursion tickets on Intercolonial and Transcontinental Divisions, except so far as Quebec, Levis and eastern points, to be found in tariff 136, are concerned.

The White Pass and Yukon Route summer service from Skagway to Dawson City, Yukon, and points in Alaska, by train and boat, shows no change from previous years. A daily train service is given during the season, while up to May 1, the service was twice a week by train and stage.

The Moncton & Buctouche Ry. resumed operations recently, one train a day, except Sundays, in each direction having been put on by arrangement with the Railways Department, as follows: Leave Buctouche, N.B., 8 a.m., arrive Moncton 10.30 a.m.; leave Moncton 3.35 p.m., arrive Buctouche 6.05 p.m.

The C.P.R. is carrying on an advertising campaign in connection with its Rocky Mountain tourist district. In addition to an attractive series of booklets, and several moving picture films taken last year, a new moving picture film of the route from Swift Current into the heart of the Rockies, will, it is reported, be taken this year.

The Lacombe & Blindman Valley Electric Ry. is operating a train service from apposite the C.P.R. station at Lacombe to Bentley, Alta., leaving at 9 a.m. Mondays, Tuesdays, Thursdays and Saturdays, and at 2 p.m. Wednesdays and Fridays, re-

turning at 3 p.m. and 5 p.m. respectively. Although called an electric railway, it is not one.

The G.T.R. has been ordered by the Board of Railway Commissioners to make connection between its eastbound passenger trains due to leave Cornwall, Ont., at 4.15 and 4.45, and arriving at Coteau Jct., Que., 5.18 and 5.30 p.m., respectively, and train due to leave Montreal at 5 p.m., due at Coteau Jct. at 6 p.m., and arriving at Ottawa at 8.45 p.m.

The C.P.R. has been ordered by the Board of Railway Commissioners to restore its train service between Moose Jaw and North Portal, Sask., covering train 315, leaving Moose Jaw at 8 a.m. and arriving at North Portal at 1.55 p.m., and train 316, leaving North Portal at 4.30 p.m. and arriving at Moose Jaw at 10.30 p.m., daily except Sundays.

The Edmonton, Dunvegan & British Columbia Ry., started recently running its trains from its own terminal, which is five miles outside Edmonton, Alta., over the Grand Trunk Pacific Ry. tracks to 121st St., where passengers are transferred to the Edmonton Radial Ry. A round trip gas car service is being given between 121st St. and Westlock, 52.2 miles, on Mondays, Wednesdays and Fridays.

The C.P.R. will on June 2, resume its seven day a week service between Montreal and Winnipeg and Toronto and Winnipeg, continuing through to Vancouver. Observation cars of the Mount class, consisting each of one drawing room, three compartments, buffet, lounge room and observation platform, will be run on these trains. The seven day a week service between St. Paul, Minn., and Vancouver will also be resumed on the same date.

The G.T.R. has been ordered by the Board of Railway Commissioners to operate its trains 389 and 390 between Lindsay and Haliburton, Ont., three times a week, viz., on Tuesdays, Thursdays and Saturdays, leaving Lindsay at 11 a.m. and arriving at Haliburton at 2.05 p.m., and leaving Haliburton at 3 p.m. and arriving at Lindsay at 6 p.m. The present schedule between Lindsay and Kinmount Jct. on Mondays, Wednesdays and Fridays is to be maintained, and connection made at Kinmount Jct. with the C.P.R. train.

The Canadian Railway Club's annual meeting was held at Montreal, May 14, the report for the past year showing considerable progress, both in membership and finances. The officers, etc., for the current year were elected as follows:—President, C. W. VanBuren, General Master Car Builder, C.P.R.; Vice Presidents, T. C. Hudson, Master Mechanic, Canadian Northern Ry., Joliette, Que., and J. Hendry, Master Car Builder, G.T.R.; Treasurer, E. E. Lloyd, Auditor of Disbursements, C.P.R.; Secretary, Jas. Powell, Chief Draftsman, G.T.R. The executive committee is as follows:—W. H. Winterrowd, Chief Mechanical Engineer, C.P.R.; C. H. N. Connell, Division Engineer, C.N.R.; A. Crumpton, Assistant Valuation Engineer, G.T.R.; E. A. Nix, Assistant Works Manager, C.P.R.; W. H. Sample, Superintendent of Motive Power, G.T.R.; B. F. Shortley, Terminal Agent, Canadian Government Railways; audit committee: D. R. Arnold, Sales Manager, Canadian Car & Foundry Co.; G. Whiteley, Assistant Superintendent of Motive Power, C.P.R.; G. M. Wilson, Master Mechanic, G.T.R.

## Grand Trunk Railway Annual Report and Meeting.

The report for 1917 which was presented at the recent annual meeting in London, Eng., shows an increase in gross receipts of £905,742, or 9.22%, the largest traffic carried in the company's history, although train mileage decreased by 3,051,932 miles, or 13.34%. There was, however, a large increase in operating expenses, totalling £1,774,807.

The passenger revenue decreased £121,482, the decrease in passengers carried being 999,727, the average fare being 1.28d higher. Mails increased £21,130, and freight and live stock £952,400, and other receipts £53,694. The average rate per ton mile on the entire freight business was 0.76c, compared with 0.67c in 1916.

Of the additional working expenses, £326,764 was for maintenance of way and structures, £421,487 for maintenance of equipment, £4,924 in traffic expenses, £994,220 in conducting transportation, £731 in miscellaneous operations, £4,199 in general expenses and £24,542 in taxes. The total expenditure of £9,002,894 was an increase of £1,774,867, representing 83.94% of the gross receipts, against 73.60% in 1916. The train mile cost was 108.95d, against 75.80d in the previous year. The surplus for 1917 was £26,279, against £802,081 in 1916. Adding the balance at credit of the net revenue account at Dec. 31, 1916, or £20,027, there is a balance of £46,307 carried forward to the current year.

The total charges on capital account were £444,856, of which £42,329 was for the acquisition of securities of the Lachine, Jacques Cartier & Maisonneuve Ry. and the Montreal & Southern Counties Ry. (electric). The expenditure on capital account for new works, machinery and tools, increased weight of rails, new rolling stock and land purchased, was £402,527.

During the year, E. J. Chamberlin, who was appointed President, May 24, 1912, for five years, and continued in office to Sept. 1, retired, but he continues with the company as a director. H. G. Kelley, then Vice President, was elected President, Sept. 1. The directors reported the death of Col. F. Firebrace, R.E., one of the directors for 22 years, and also the resignation of S. Baldwin, M.P., owing to his having accepted office under the British Government. H. G. Kelley, President, was elected one of the directors.

**Alberta Workmen's Compensation Act.** The act passed by the Alberta Legislature for the provision of compensation to workmen who are injured in the course of their work, does not come into operation until Jan. 1, 1919, so far as the following trades or occupations, among others, are concerned: engineering, transportation, operation of electric power lines and power plants, waterworks and other public utilities, navigation, operation of boats, ships, tugs and dredges, operation of grain elevators and warehouses, telegraph systems. The act does not apply to railway companies, except so far as their employees are engaged in any employment specifically mentioned in schedule A, which is now in operation, or in schedule B, which comes into operation in 1919.

**Port Huron Car Shops.** G.T.R.—The construction of these shops having been completed, they have been taken over by J. Coleman, Superintendent Car Department, and a large working force, which it is said will eventually number about 600, is being installed.



## Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, to Jan. 31, contributed \$21,709.72 to the Red Cross; \$25,767.23 to the Canadian Patriotic Association, all from employees, and in addition, \$11,666.65 to the Red Cross; \$13,333.35 to the Canadian Patriotic Association, and \$13,765.16 to enlisted employees, from the Commission.

### Canadian Railway Troops in Action.

The following is a dispatch from Roland Hill, at the war correspondents' headquarters in France, to the Dominion Government, which was given out at Ottawa, May 9:—

"In the defence of Marcelcave, and the Nesle-Amiens railway line, one battalion of Canadian Railway Troops, from York County, Ont., went into the battle line like veterans, and helped to stave off the German advance for five days. From Mar. 27, in spite of the fact that they had long marches and hard work in saving their construction equipment from the Huns in the Ham neighborhood, this battalion fought with the gallant 61st Division. Although they had many men who were trained in machine gun work, they were not, of course, equipped with this armament when they started for the support line. The Colonel foraged in Villers-Bretonneux and discovered a sympathetic Canadian who was quartermaster for an Imperial unit. Sixteen machine guns and two lorries filled with ammunition were obtained from him. Then the Canadians swung down the main road and into position, singing lustily, cheering up the tired British troops whom they joined.

"The spell in the line is best told in one of their Major's own words: 'All through our retirement the feeling of the men was keen to do something better than merely save equipment. We wanted to do something to help to stop the German advance, and now the opportunity had come. I never saw a happier crowd on their way to the trenches. After outfitting with machine guns we took up our position in support in a small wood about a quarter of a mile northwest of Marcelcave about five in the morning. Things were fairly quiet until 10, when a counter-attack by the 61st Division took place. About 1,200 men took part, and went doggedly at the Huns, but they were worn out by days and nights of continuous fighting, and the attack petered out just after 11 o'clock. The enemy immediately attacked again and captured Warfusee, on the left, and got a footing in Marcelcave, on our right.

"We were then left in an advanced position in the wood and Hun guns began a terrific shelling of the place. No reserves could be spared, and as the holding of the wood began to be costly, we established scattered machine gun posts in it and our main body fell back to support lines they built themselves astride the railway. The men carried out this movement in extended order and as coolly as if they were on parade, in spite of heavy shelling from the Huns. In some mysterious way the men had obtained shovels

and it was here that we demonstrated what a wonderful tool the shovel is in the hands of a C.R.T. sapper when he is under fire. The rapidity with which they dug cover was a marvel to all who saw those trenches dug. That night it started to rain and we salvaged tarpaulins from an abandoned aerodrome and made ourselves fairly comfortable. Our patrols kept well forward, but the Germans never continued the attack that night, although there was very heavy fighting to the north.

"In the morning the enemy was actively preparing for an attack in the direction of Marcelcave. He came out on the roads freely and began digging positions, and we let him—for a little while. When he was in sufficient strength, we opened up on him with every gun and rifle we had. We killed scores of Huns, and he gave up his idea of attacking, thinking we were in greater force than we were. All that day the boys had fine sport with the machine guns. That night was again quiet, except where Fritz put up flares and we plastered him with bullets.

"In the morning the Germans attacked in dense masses, and in spite of the fight the Gloucesters and Warwicks on our right put up they were forced back. The Boche followed up, and for over an hour all our machine guns poured into them, doing great execution. We fired all the ammunition we had and all we could carry up. It was a great day's sport, and we did tremendous damage to old Fritz. As soon as he finished his work on the right he turned his guns on us. A young Toronto captain and some volunteers with machine guns held the trenches whilst we retired again. But Fritz had had enough for the day, and never molested us that night. He seemed to be very nervous of the chances of a possible counter-attack. It was easy fighting then until we were relieved.

"Our transport men were splendid all through and each night, and sometimes, when possible, in the day time, they ran their lorries up the roads close to our trenches and delivered hot meals to the men."

"That is the modest account of what this York County battalion did."

### PERSONAL NOTES.

G. McL. Brown, European Manager, C. P.R., London, Eng., who has been acting as Assistant Director of Movements, has been appointed Assistant Director General of Movements and Railways at the War Office, with the rank of colonel.

Flight-Lieut. Gordon Burchard, an instructor in the Royal Air Force, was killed at Camp Borden, Ont., May 23, owing to a cadet who he had taken up having fainted at the wheel, allowing the plane to crash to the ground. Before enlisting, he was on the Pullman Co.'s staff at Toronto.

Lieut. A. J. Cameron of the Canadian Railway Troops, has been awarded the Military Cross, for conspicuous gallantry and devotion to duty when in charge of a party repairing damage to a light railway by shell fire. When a dugout was hit, and the occupants buried, he called for volunteers, went through the enemy barrage and rescued five wounded and recovered five bodies.

Capt. Lloyd Fleming, who has been awarded the Military Cross, and promoted from lieutenant, is a son of R. J. Fleming, General Manager, Toronto Ry.,

and allied companies. He joined the Army Service Corps in Toronto, in Jan., 1916, as lieutenant, and later transferred to the Mechanical Transport Corps, and acted for some time at Ottawa as assistant instructor. In order to get overseas more quickly, he joined the Royal Flying Corps, and went to England in Nov., 1916, and to France after completing his flying course. He was subsequently sent to the far east, where he has since served with the Egyptian forces. In January, he accounted for five enemy planes in two weeks.

Major Chas. Flint, of the 4th Battalion, Canadian Railway Troops, who has been awarded the Croix de Guerre, is a B.A.Sc. of Toronto University. When he enlisted as a lieutenant he was in the C.P.R. engineering service at Winnipeg.

Sergt. J. Goulding of the Canadian Railway Troops, has been awarded the Distinguished Conduct Medal. On one occasion, although he and his party were three times shelled off the work, by his courage and skill he completed it under heavy fire, thereby enabling a navy gun to be put into the required position.

Capt. F. Harcourt, who is reported to have been appointed Assistant Commander of Labor Units in France, was formerly Harbor Engineer at Port Arthur, Ont.

Major D. Hillman, of Canada, has been gazetted as a lieutenant-colonel while employed as a railway construction engineer at the front.

Lieut. W. Johnston, Royal Naval Air Service, who was reported recently to have been killed whilst engaged in bombing the German warship Goeben in the Dardanelles, had, before enlisting, completed his final year at McGill University, under one of the C.P.R. engineering scholarships.

Major T. R. Loudon, A.M.Can.Soc.C.E., lecturer of Faculty of Applied Science, University of Toronto, and one of the partners in James, Loudon & Hertzberg, civil engineers, Toronto, has returned to Canada from France, on leave. He was invalided to England in January, and had been mentioned in dispatches. He joined the 1st Railway Construction Battalion as a lieutenant, and was promoted to captain, and to major, while in France.

General D. S. MacInnes, whose death by accident in France, was reported May 24, was brother of W. R. MacInnes, Freight Traffic Manager, C.P.R., Montreal, and a son of the late Senator MacInnes, who was a C.P.R. director for many years. No details of the accident have been given, but from the latest information, he was acting as Inspector of Mines on the British Headquarters Staff, and it is presumed that the accident occurred in the course of his duties. He commenced his military career in 1891 as second lieutenant, Royal Engineers, and in 1895 and 1896 served in the Ashanti expedition, during which he was mentioned in dispatches. From 1899 to 1902 he was in the South African war, and commanded the Royal Engineers through the defence of Kimberley. For services rendered in the Orange Free State and the Orange River Colony, he was mentioned in dispatches, and received the Queen's and King's medals. He served subsequently under the Dominion Government, and in 1905-07 was Deputy Assistant Quartermaster General, and in 1907, Chief Staff Officer of the Maritime Provinces, and occupied that position until his transfer to England to the General Staff.



Lieut. H. W. Morris, who was killed in action recently, was, prior to enlistment, travelling electrician in the Car Department, G.T.R., Montreal. He went overseas with the 3rd Canadian Field Artillery in Sept., 1914, and later won a commission and was attached to an infantry battalion. During an attack on strong enemy positions, his devotion to duty led to his being recommended for the Military Cross. However, he was killed in a subsequent engagement, the cross being sent to Canada and presented to his widow at Montreal.

Lieut. E. G. O'Brien, who was reported, Apr. 12, to have been slightly wounded in France, was, before enlisting, a C.P.R. car inspector at Montreal.

Lieut.-Col. J. V. P. O'Donahoe, D.S.O., whose death following wounds received from shrapnel at Passchendaele in April, was reported May 8, was born at Brockville, Ont., in 1881, and was, for some years, engaged in transportation service. Prior to 1905, he was in the Audit Department, Canada Atlantic Ry., now part of the G.T.R., and in 1905 was appointed private secretary to C. J. Smith, then General Manager, Richelieu & Ontario Navigation Co., Montreal, and from 1906 to Mar. 1, 1913, when Jas. Playfair and associates secured control, he was Manager's Assistant of that company. He subsequently became Assistant to the Vice President and General Manager, and Purchasing Agent, of the North Ry. project, and in Jan., 1915, was appointed to the military headquarters staff at Montreal. He went overseas in May, 1915, as junior Major of the 60th Battalion, and went to France with the rank of captain, and later obtained promotion as major and finally lieutenant-colonel. He was mentioned in dispatches several times, and was awarded the D.S.O. for gallantry on the Somme.

Sergt. C. H. Olson of the Canadian Railway Troops, has been awarded the Distinguished Conduct Medal for conspicuous gallantry and devotion to duty at all times. He has invariably displayed the greatest courage and coolness under direct and heavy shell fire, and his fine example has been of invaluable service in encouraging all ranks with him.

Lieut. R. S. Richardson, No. 13 Light Railway Operating Co., R.E., British Expeditionary Force, formerly Superintendent, Canadian Government Railways, Fort William, Ont., in writing from the front early in April said: "We made a nice retirement, getting out our equipment, and all of our men, but when we thought we were quite clear, on the seventh day, after running the gauntlet through many hot shelling and bombing districts, we lost 24 killed and 18 wounded. The poor, brave boys never grumbled, although badly cut up. We moved eight times in the 10 days and buried our dead."

E. J. Shea, formerly a clerk in the Superintendent's office, Canadian Ex. Co., Winnipeg, was reported recently to have been killed in action on Apr. 3. He went overseas about two years ago with Canadian cavalry.

Capt. Paul F. Sise, Vice President and Managing Director, Northern Electric Co., who went overseas with the 148th Battalion, and has for some time past been in the United States on special service, returned to Montreal early in May, to undertake the recruiting of young men, for the Hebrew Battalion now being raised in Canada and the U.S., for service with the British Expeditionary Force in Palestine.

E. A. Stewart, Chief Accountant, Montreal Tramways Co., was presented with a

purse of money, May 3, on leaving the company's service to enlist with the McGill College section of the tank battalion.

Major J. J. Sullivan, of the Canadian Railway Troops, who has served a considerable time in France, and whose portrait was published in our April issue, has returned to Winnipeg, and will probably shortly resume his duties as a construction engineer and roadmaster, C.P.R.

W. Tourigny, formerly of the Maintenance of Way Department, C.P.R., is reported to have been wounded. He is a son of H. B. Tourigny, District Engineer, Public Works Department, Three Rivers, Que.

Lieut. R. P. Williams of the Canadian Railway Troops, was awarded the Military Cross recently for conspicuous gallantry and devotion to duty, in directing the work of repairing a light railway track during a heavy barrage. Owing to his efforts the line was kept open, and he volunteered for the work in the most forward area.

### Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
Dec.	3,273,200	3,207,900	65,300	758,500
Jan.	2,715,300	3,290,300	x575,000	1,057,100
Feb.	2,691,000	3,171,400	x480,400	588,600
Mar.	3,436,300	3,225,900	210,400	407,700
	\$30,699,400	\$28,209,300	\$2,490,100	\$5,014,400
Incr.	\$ 603,400	\$ 5,617,900		
Decr.			\$5,014,400	
	x Deficit.			

Approximate earnings for April, \$3,949,100, against \$3,313,500, and for three weeks ended May 21, \$2,531,100, against \$2,476,900 for same periods 1917.

### Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, compared with those of 1917, from Jan. 1, 1918:

	Gross Earnings	Expenses	Net Earnings	Decrease
Jan.	\$10,789,818	\$9,621,824	\$1,167,993	\$1,263,485
Feb.	9,574,302	8,983,404	590,898	1,396,151
Mar.	12,427,915	9,435,134	2,992,781	944,536
	\$32,792,035	\$28,040,362	\$4,751,673	\$3,603,172
Incr.	\$1,702,907	\$5,306,079		
Decr.			\$ 3,603,172	

Approximate earnings for April, \$13,007,000, against \$12,036,000 for April, 1917, and for three weeks ended May 21, \$8,989,000, against \$9,262,000 for same period 1917.

### Grand Trunk Railway Earnings.

Aggregate from Jan. 1 to Apr. 30:—

	1918	1917	Increase	Decrease
G.T.R.	\$15,296,909	\$14,617,203	\$679,706	
G.T.W.R.	2,806,523	2,807,321		\$ 798
D.G.H. & M.R.	912,536	1,045,457		93,397

\$19,015,968 \$18,430,457 \$585,511 .....  
Approximate earnings for April, \$6,118,935, against \$4,885,211 for Apr., 1917, and for three weeks ended May 21, \$4,492,138, against \$3,917,291 for same period 1917.

### Grand Trunk Pacific Ry. Earnings.

Approximate receipts for April, \$505,316, against \$454,011 for Apr., 1917; aggregate receipts from Jan. 1 to Apr. 30, \$2,010,341, against \$1,485,326 for same period 1917.

Liquor on a Locomotive.—Jno. Reading, locomotive man, and W. C. Tretheway, locomotive fireman, were each fined \$250 and costs at Windsor, Ont., May 22, for having a bottle of intoxicating liquor on a C.P.R. locomotive.

### Traffic Orders by the Board of Railway Commissioners.

#### Minimum Weight of Tan Bark.

General order 232. May 14. Re application of Canadian Manufacturers' Association for an order disallowing the increased carload minimum weights of tan bark, published in Supplement 8 to C.P.R. Tariff C.P.C. no. E-3225, and Supplement 1 to G.T.R. Tariff C.R.C. no. E-3477: It is ordered that the minimum carload weights of tan bark, when carried in box or stock cars under special commodity tariffs, be as follows:—For cars not over 30½ ft. long, inside measurement, 21,000 lb.; for cars over 30½ ft. and not over 34½ ft. long, inside measurement, 23,000 lb.; for cars over 34½ ft. and not over 36½ ft. long, inside measurement, 28,000 lb. And it is further ordered that general order 221 made herein be rescinded.

#### Protection of Old Rates on Grain.

General order 234. May 22. Re applications of United Grain Growers, Ltd., Northwestern Grain Dealers Association, Campbell Flour Mills Co., Quaker Oats Co., Cambridge Roller Mills, Northern Grain Co., et al, for a ruling in the matter of protection of the old rates on grain shipped prior to Mar. 15, 1918, to interior mills and elevators, with published transit privileges, and reshipped after the new rates came into effect; and re general order 212, Jan. 15, 1918, and orders in council pertaining thereto: Upon reading the applications and what was alleged in support thereof and the written argument filed by C.P.R. counsel, it is ordered as follows, with respect to carriers whose tariffs provide for the milling, malting, storage or cleaning of western grain in transit:—

1. That with respect to all grain originally shipped prior to Mar. 15, 1918, the said grain or the produce thereof reshipped within six months, from the stop over point, shall be entitled to the balance of the through rate existing at the time of the original shipment of the grain under the transit tariffs applicable.

2. That with respect to all wheat originally shipped on and after Mar. 15, 1918; the said wheat or the product thereof, reshipped from the stop over point west of Fort William, before June 1, 1918, to destinations west of and including Port Arthur and Armstrong, Ont., shall be entitled to the balance of the through rate to the said destinations existing at the time of the original shipment of the wheat under the transit tariffs applicable.

3. That with respect to all grain other than wheat, as referred to in sec. 3 hereof, originally shipped on and after Mar. 15, 1918, under the transit tariffs applicable thereto, which, or the product whereof, is reshipped from the stop over point within six months; the rate to be applied on the said reshipped grain or product may be the balance of the through rate existing from the original point of shipment of the grain to the final destination thereof, or of the products at the time of the reshipment from the stop over point.

4. That the charge for the terminal service at the stop over point, also the charge for the haul, if any, out of the direct line of transit, in accordance with the tariffs applicable, shall be additional in each case.

#### Increases in Electric Railway Freight and Passenger Rates.

Orders passed by the board, authorizing increases in freight and passenger rates on certain electric railways, are



given in the electric railway department of this issue on page 254.

#### Joint Rates On Canned Goods.

27160. April 26. Re complaint of Dominion Cannery, Limited, Hamilton, Ont., and Board of Trade, Picton, Ont., regarding joint rates on canned goods, and re proposed Joint Class Freight Tariff of Canadian Pacific and Grand Trunk Railways. The matter having been heard at Ottawa, April 16, and upon its appearing that the parties will not be able to agree prior to April 30, it is ordered that, pending a hearing and until further order, the proposed Joint Freight Tariff of class rates, Canadian Pacific Ry. C.R.C. B-2459

and Grand Trunk Ry. C.R.C. B-3542, be suspended.

#### Specific Commodity Rates from Burritts, Ont.

27204. May 9. Re application of Provincial Stone & Supply Company, Toronto, for an order directing the C.P.R. to publish specific commodity rates from Burritts, Ont., to various points. Upon hearing the application at Toronto, Feb. 15, 1918, in the presence of counsel for the applicant company and the railway company, and upon the report and recommendation of the board's Traffic Officer, it is ordered that the application be dismissed.

#### Pacific Coast Terminal Rates.

27220. May 18. Re complaint of Nanaimo Board of Trade against withdrawal of Pacific coast terminal rates to Nanaimo and the substitution of an arbitrary over the Vancouver rates; and re order 24808, Mar. 10, 1916, dismissing the complaint: Upon rehearing the matter at Vancouver, June 26, 1916, the complainant and the C.P.R. being represented, and upon reading the further written submissions filed, it is ordered that the complaint be dismissed, with leave to the applicants to move for further consideration of the application as and when future traffic conditions may warrant.

## The Prime Minister's Explanation of the Dominion Government's Railway Policy.

The Premier, Sir Robert Borden, made a general statement in the House of Commons May 15, with regard to the whole railway situation in Canada. He reviewed the history of railway development since 1903, at which time the Canadian Northern Ry., which had attained considerable development in the prairie provinces, began to expand easterly and westerly. Since then, not only had the C.N.R. expanded into a complete transcontinental system, but the Grand Trunk Pacific Ry. had been built from Winnipeg to Prince Rupert, and the National Transcontinental Ry. from Moncton to Winnipeg. Having explained the financial legislation which parliament had passed with a view of aiding the construction of these lines, and of safeguarding the country's interests in them, as well as the legislation passed in 1917, with respect to the Canadian Northern Ry., under which arbitration proceedings are being carried on to fix the value of the non-government owned shares of that system—which price is not to exceed \$10,000,000—the Premier outlined the general future policy of the government with respect to the Canadian Northern, the Grand Trunk Pacific, and the Grand Trunk, suggesting the amalgamation of the whole, together with the National Transcontinental Ry., the Intercolonial Ry. and the Prince Edward Island Ry. as one state owned system under independent corporate management.

Pending the completion of the arbitration as to the value of the Canadian Northern stock—the time for making the award having been extended to June 1—the management of the line has not been disturbed, except that the government has had appointed three directors. This gives the government access to all the company's documents and records, and such being the case, there is no reason why the actual management should be changed in the meantime. In connection with a reconstituted board, it is not intended that either Sir William Mackenzie or Sir Donald Mann will be members; both had expressed their desire to be relieved from further responsibility after the government assumes full control, but Sir William Mackenzie has offered to make his services available in any way the board might determine, without remuneration or recompense. As to the immediate future, it is not intended to operate the Canadian Northern system directly under a government department, but through the corporate machinery by which it has been operated in the past. There will be a reconstituted board of directors, to which the best men obtainable will be appointed, and the government will not interfere with that board. Every means will be used by the govern-

ment, and extra powers will be obtained, if necessary, in order that anything like political influence, patronage or interference shall be absolutely eliminated from the administration of the line.

The government has had under consideration the question as to whether it might not be possible in the immediate future to bring the National Transcontinental Ry., the Intercolonial Ry. and the Prince Edward Island Ry. under the same corporate ownership as the Canadian Northern. The matter has not yet received the mature consideration necessary, but it may be possible and desirable to bring these lines under the ownership of the corporation which will control the C.N.R. system. That suggestion is before the government, and so far as he has been able to give it consideration, it commends itself to his judgment.

With respect to the Grand Trunk Pacific Ry., he regards it as inevitable that, for many reasons, it should be taken over by the Dominion Government. It is a national enterprise to which the credit of the Canadian people had been committed, and it is expedient to sustain it and not permit it to go into liquidation. It is intimately connected with the Grand Trunk Ry. in the east; branches of the C.N.R. system in the west in many cases could be utilized as feeders without any great expenditure, but it is not self-sustaining. The G.T.P. Ry. could not be successfully operated without suitable arrangements with the C.N.R. and with the G.T.R. The G.T.P.R. cannot pay its interest charges, and it is utterly impossible for the G.T.R. to meet the obligations it has undertaken in respect to the G.T.P.R. It is, therefore, inevitable that the G.T.P.R. be acquired. As to the method of its acquisition, he has no doubt that the G.T.R. would be willing to hand it over if the Dominion Government would relieve the G.T.R. of the obligations it had incurred. There were several conditions to be taken into account before such a proposal could be entertained, and the government is discussing the whole situation with the G.T.R. management.

If the government took over the G.T.P.R., it would practically involve taking over the G.T.R. as well. He is of this opinion because the G.T.P.R. and the C.N.R. would lack the adequate eastern connections which the G.T.R. would give, and because even if relieved from its obligations as to the G.T.P.R., the G.T.R. has no very bright future prospects. It is very easy to say that the Dominion should acquire the G.T.R., but when the practical problem of how it is to be acquired is faced, it is not quite so simple. While it might be possible to force the acquisition of the G.T.R., it must be remembered that Canada for many years to come will be

a borrowing country, and that if the government were to lay itself open to the charge of acting unfairly or unjustly towards those who have invested their capital in the country, it would lose in the end more than it would gain by any such injustice. So the government will have to act reasonably with the G.T.R., and further, it must be remembered that the G.T.R. has lines and terminals in the United States which are vested in U.S. companies, of which the G.T.R. controls the stock. So the acquisition of the G.T.R. must depend upon negotiations, and the government is conducting such negotiations. For the present they are confidential. The government has made what it considers to be a reasonable offer, somewhat along the lines suggested in the Drayton-Acworth report, but rather more favorable to the G.T.R. That company replied by making a counter offer, which the government could not ask parliament to accept. The government then suggested to the G.T.R. that, failing an agreement, the question of the annual payment be left to arbitration, without any limit being fixed. Whatever sum might be fixed to be paid by the government for a lease of the G.T.R. should be distributed among the holders of the various stocks by the directors of the G.T.R. themselves.

A sub-committee of the government has been dealing with the general railway problems of the country during the past six months, and two of the members of that committee will be in England during the summer. He has some reasonable hope that when parliament is again summoned the government will be in a position to place before it proposals which will involve the constitution into one state-owned system, all the chief railways of Canada, except the Canadian Pacific Ry. It might be possible, indeed he thought it probable, that at some later date, all the land transportation facilities of Canada in the shape of railways might, so far as operation is concerned, be amalgamated into one system and carried on under one management.

The Ministers of the Interior and of Immigration, Messrs. Meighen and Calder, will carry on negotiations in England during the summer in connection with the proposal to acquire the G.T. Pacific Ry. and the G.T.R.

**Western Grain Unloading at Head of Lakes.**—The Board of Grain Commissioners has ordered that all wheat shipped from country points after May 10, must be unloaded into terminal elevators at Fort William and Port Arthur, by the various railways, unless permits are granted by the board, to allow unloading at other destinations.



## Arbitrators Value 600,000 Shares Canadian Northern Railway Stock at \$10,800,000.

After sitting on 50 days in March, April and May, taking over 1,500,000 words of evidence, and filing 211 exhibits, the three arbitrators, Sir Wm. Meredith, Chief Justice of Ontario, representing the Dominion Government; Wallace Nesbitt, K.C., of Toronto, representing Mackenzie, Mann & Co., and Chief Justice Harris, of Nova Scotia, selected as the third, gave the following unanimous award on May 25:—

"That the value of the 600,000 shares of the Canadian Northern Ry.'s capital stock, as of the date of the agreement entered into on Nov. 15, 1917, between the King, Mackenzie, Mann & Co., Ltd., and the Canadian Bank of Commerce, was \$10,000,000; that the parties shall respectively pay and bear their own costs of the arbitration, except that the Dominion Government shall pay the expenses of taking and transcribing the evidence, the remuneration of the secretary and messenger employed by us and the incidental expenses incurred by the secretary.

"The question to be determined by us was one of great difficulty, and one which, of necessity, admitted of great diversity of opinion. We heard much testimony and had the benefit of assistance of experienced and able counsel on both sides, and carefully investigated every matter which seemed to throw any light upon the question to be determined. As to whether or not there was a surplus of assets over liabilities, was naturally a subject which engaged much time and consideration. It is, of course, not a conclusive test as to the value of the stock, but it is an element which cannot be ignored. Its importance was perhaps emphasized by the fact that a Royal commission had reported the company's assets and liabilities to be about equal. This report, which was made in a proceeding to which the company and its shareholders were not parties, was admittedly based on a misconception of some of the facts, and there were omissions of both assets and liabilities. It should also be pointed out that the work of the Royal commission had reference to a date anterior to Oct. 1, 1917, and there were changes in the interval.

"In arriving at the surplus of assets over liabilities, the report of Prof. Swain as to the reproduction cost now of the physical property, based on pre-war prices, and also his estimate of the depreciation, has been adopted and after a careful examination we found the surplus of assets over liabilities of the company on Oct. 1, 1917, on a conservative basis, to be not less than \$25,000,000, after deducting the full amount of depreciation found by Prof. Swain and making such reduction in the value of the land grants and other assets as seemed reasonable. It is to be pointed out that a valuation of the physical property of a railway company by the reproduction new method, less depreciation, is not to be regarded as an ascertainment of the actual value. It is only a means to that end, but as it was the best, and in fact the only estimate available, it has been adopted as a basis for the foregoing calculations.

"While the surplus of assets over liabilities is an element for consideration, as has been already pointed out, it is not conclusive as to the value of the company's stock. Its prospective earning power is perhaps more important than any other element in ascertaining such

value, and in arriving at a conclusion, we have given careful consideration to the past history of the company, its earnings and expenditures, the present financial position of the company, the location of its lines and their construction, the other railways already existing in competition, the rate of interest on the company's funded and other debts, the probable future growth of the population and business of the country, and all other factors which seemed to us to have any bearing upon the question. It is apparent that there was great room for difference of opinion in a matter involving so many elements of uncertainty and speculation, but after taking into consideration all the circumstances which appeared to us to be entitled to weight in determining so difficult a question, we came to the conclusion we have mentioned."

### Terms of Agreement.

The agreement, under which the arbitration was held, was entered into Oct. 1, 1917, between the King, represented by the Ministers of Finance and of Railways and Canals, Mackenzie, Mann & Co., Ltd., and the Canadian Bank of Commerce. Under authority of the act passed at the Dominion Parliament's 1917 session providing for the acquisition of the C.N.R.'s capital stock, the arbitrators were to determine the value of the 600,000 shares as at Oct. 1, 1917, and might consider the reproduction cost of the C.N.R. system, but should not include therein any increase in value, due to the war, of labor, material, or of property. Should the value of the 600,000 shares be determined as \$10,000,000 or more, the price to be paid therefor was fixed at \$10,000,000, but if the value determined should be less than \$10,000,000, the value so determined is to be the price to be paid. The arbitrators' decision is to be final, if unanimous, but if not unanimous, is to be subject to appeal as provided in the act. The price determined is to be paid by the government within three months from the receipt of the award, less its proportionate share of the amount of any liabilities ascertained by the government to be outstanding against the C.N.R. system or any of its constituent companies, and undisclosed to, or in excess of the liabilities disclosed to, the arbitrators, apart from liabilities which will be properly chargeable to capital account, unless the corresponding value produced thereby has been taken into consideration as an asset of the company.

The agreement provided that immediately after its execution, at least five-sixths of the 600,000 shares be transferred to the Finance Minister, free of all encumbrances. Sixteen thousand shares, par value \$1,000,000, deposited with the British Columbia Government as security for contracts made by the Canadian Northern Pacific Ry. with that government were to be transferred to the Finance Minister on an order from the owners. Unless the whole 600,000 shares are transferred to the Finance Minister, the Governor in council may declare any shares not transferred to be so transferred, and until all the shares are transferred the Dominion Government may retain, out of the purchase price decided by the arbitrators, the pro rata value of such shares, to be paid over as they are transferred.

During the debate on the Canadian Northern bill in the House of Commons

recently, it was announced that Mackenzie, Mann & Co., had transferred to the government \$51,000,000 of common stock, making with the \$40,000,000 acquired by the government previously, \$91,000,000 out of a total of \$100,000,000.

The \$10,800,000 award places a value on the 600,000 shares of \$18 each, but as the amount to be paid is limited by the agreement to \$10,000,000, it will be at the rate of \$16.66 a share. Mackenzie, Mann & Co. are said to have 510,000 shares prior to transferring them to the government, a portion at least of which was pledged to the Canadian Bank of Commerce, and the other 90,000 were distributed among various holders.

It is said that the arbitration cost approximately \$500,000.

### Joint Traffic Arrangement at St. Leonards, N.B.

The Dominion Parliament was asked at its recent session to confirm an agreement, dated Mar. 8, between the Dominion Government and the Van Buren Bridge Co. The company owns a railway bridge across the St. John River, giving connection between a branch of the Bangor & Aroostook Ry. in the State of Maine, and the Province of New Brunswick, and a short piece of line connecting the bridge with St. Leonards, N.B. The Dominion Government holds, under an agreement to purchase, the International Ry. of New Brunswick, which connects with this piece of railway at St. Leonards, and also owns the National Transcontinental Ry., which passes through St. Leonards, but does not connect with the International Ry. or the Van Buren Bridge Co.'s line. The Dominion Government is thus maintaining two stations and staffs. The agreement provides for the leasing by the Van Buren Bridge Co. to the Dominion Government of certain lands lying between the International Ry. and the National Transcontinental Ry., together with all the railway tracks thereon, or crossing the C.P.R. or the N.T.R., from May 1 to Aug. 1, 1934, at a rental of \$1,200 a year, in addition to the entire cost of maintenance and operation, and the cost of any additional tracks and interlocking plants that may be required. The agreement contains other sections as to interchange of traffic, etc.

The Minister of Railways, in the course of the discussion on the bill, stated that the object of the agreement was that International Ry. trains would pass over the two miles of track leased to the National Transcontinental station at St. Leonards, which would serve as a union station for both lines, thus effecting a saving in cost of operation. At present passengers going in on the N.T.R. have to drive or walk over to the International Ry. if they are going on to Levis or Moncton. Two miles of the present International Ry. would be taken up, and the present station abandoned, and all the International Ry. traffic would be taken to the N.T.R. station. Opposition to the agreement was made on behalf of people of St. Leonards, who claimed that they would be deprived of the present station in the village, and would have to go some distance to the proposed union station. The measure was, however, passed.

Canadian Car & Foundry Co., Ltd., has deposited plans with the Public Works Department at Ottawa, of a dock and ship launching track, to be built in the Kaministiquia River, Fort William, Ont.



## Transportation Appointments Throughout Canada.

**Canada Steamship Lines, Ltd.**—JOHN V. FOY, heretofore General Passenger and Freight Agent, Kingston and west to the Detroit and Port Huron frontier, has been appointed General Passenger Agent, same territory; all communications dealing with passenger traffic matters are addressed to him. Office, Toronto.

L. J. BURNS, heretofore chief clerk to Assistant Traffic Manager, Toronto, has been appointed Division Freight Agent in charge of territory Kingston and west to the Detroit and Port Huron frontier. All communications dealing with freight traffic matters are addressed to him. Office, Toronto.

**Canadian Government Railways.**—R. Z. WALKER, heretofore agent, Fredericton, N.B., has been appointed Assistant Superintendent, District 2, Eastern Lines, vice M. M. McLearn, whose appointment as acting Assistant Superintendent, was announced in our last issue, and who has resumed his previous position as Chief Dispatcher at Truro, N.S. Office, Fredericton, N.B.

L. A. STEVENS, heretofore acting Locomotive Foreman, Fitzpatrick, Que., has been appointed Locomotive Foreman there.

A. E. BRYANT, heretofore Erecting Foreman, Canadian Northern Ry. Shops, Limouli, Que., has been appointed Locomotive Foreman, C.G.R., Parent, Que., vice G. Wells, transferred.

L. SENTERRE has been appointed acting Locomotive Foreman, Doucet, Que., vice G. W. Bacheldor, transferred.

H. LOWTHIN, heretofore acting Locomotive Foreman, O'Brien, Que., has been appointed Locomotive Foreman there.

JAMES HALL has been appointed Locomotive Foreman, Armstrong, Ont., vice S. Jocelyn, acting Locomotive Foreman, transferred.

**Canadian Pacific Ry.**—C. GRIBBIN, heretofore Master Mechanic, Algoma District, North Bay, Ont., has been appointed Master Mechanic, New Brunswick District, vice C. Kyle, transferred. Office, St. John, N.B.

W. TANSLEY, heretofore Superintendent, Laurentian Division, Quebec District, Montreal, has been appointed Car Service Agent, New Brunswick District, vice W. Brown, transferred. Office, St. John, N.B.

J. H. BOYLE, heretofore Superintendent, Farnham Division, Quebec District, Farnham, has been appointed Superintendent, Brownville Division, New Brunswick District, vice H. J. Humphrey, transferred. Office, Brownville Jct., Me.

W. WELLS, heretofore Master Mechanic, Schreiber Division, Algoma District, Schreiber, Ont., has been appointed Master Mechanic, Farnham Division, Quebec District, vice J. Craig, who has resumed his former position as locomotive man. Office, Farnham, Que.

C. KYLE, heretofore Master Mechanic, New Brunswick District, St. John, has been appointed Supervisor of Apprentices, Angus shops, Montreal.

T. HAMBLEY, heretofore Master Mechanic, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Master Mechanic, Algoma District, vice C. Gribbin, transferred. Office, North Bay, Ont.

J. S. ALLEN, heretofore Locomotive Foreman, North Bay, Ont., has been appointed General Foreman, Locomotive Erecting Shop, North Bay, Ont.

W. J. McDIARMID has been appointed

Locomotive Foreman, North Bay, Ont., vice J. S. Allen, transferred.

C. A. WHEELER, heretofore Locomotive Foreman, North Bay, Ont., has been appointed Master Mechanic, Sudbury Division, Algoma District, vice T. Hambley, promoted. Office, Sudbury, Ont.

H. P. CREIGHTON, heretofore bridge foreman, Chappleau, Ont., has been appointed Bridge and Building Master, Schreiber Division, Algoma District, vice E. T. Draper, transferred. Office, Schreiber, Ont.

T. V. BEARDMORE, heretofore Assistant Foreman, locomotive repair shops, Chappleau, Ont., has been appointed Locomotive Foreman, Schreiber, Ont., vice R. Gardiner, resigned.

J. MARSHALL, heretofore Assistant Car Foreman, Transcona, Man., has been appointed Car Foreman, Fort William, Ont., vice H. Dibley, transferred.

J. RAMSBOTTOM, heretofore in the passenger car yard at Winnipeg, has been appointed Assistant Car Foreman, Transcona, Man., vice J. Marshall, promoted.

P. F. WEISBROD, heretofore Superintendent, Calgary Division, Alberta District, Calgary, and who has been on leave of absence for some time, has been appointed station master, Winnipeg Terminals.

A. E. DALES, heretofore Master Mechanic, Calgary Division, Alberta District, Calgary, has resumed his former position as locomotive man, running out of Winnipeg.

H. DIBLEY, heretofore Car Foreman, Fort William, Ont., has been appointed Car Foreman, Swift Current, Sask., vice H. K. York, transferred.

H. K. YORK, heretofore Car Foreman, Swift Current, Sask., has been appointed Car Foreman, Alyth, Alta. This is a new position.

E. THACKER, heretofore in the passenger car yard, Winnipeg, has been appointed Car Foreman, Field, B.C.

**Grand Trunk Ry.**—H. G. KELLEY, President, G.T.R. and Grand Trunk Pacific Ry., has been elected a director of the G.T.R.

JOHN BOYD, heretofore Weighing Inspector, has been appointed Superintendent Weighing Department, Toronto, and his former position has been abolished.

J. S. LILLIE, heretofore Land Accountant, has been appointed Assistant Land and Tax Commissioner, Western Lines, Detroit, Mich.

**Northern Navigation Co., Ltd.**—R. V. ROBINSON, heretofore General Freight Agent, Sarnia, Ont., whose appointment as Freight Claims Agent, Canada Steamship Lines, Ltd., Montreal, was announced in our last issue, has also been appointed General Claim Agent, Northern Navigation Co., covering freight, marine and fire claims. Office, Montreal. The Freight Traffic Department is now under the Manager's jurisdiction.

**Grand Trunk Pacific Ry. Hotels.**—A press report from Winnipeg stated recently that the Fort Garry Hotel in Winnipeg, and the Macdonald Hotel in Edmonton were to be closed, it being stated that each was run at a loss of about \$40,000 last year. We are officially advised that it is not the company's intention to close the hotels.

**The Canadian Car & Foundry Co.'s** plant at Fort William, Ont., was damaged by fire, May 23, the oil and paint store being destroyed, and the damage being estimated at \$15,000.

## Duplicate Pacific Coast Trains Abolished in the United States.

The Director General of U.S. Railroads has approved the recommendation of Regional Director Aishton for a reduction in the mileage of transcontinental passenger trains starting from Chicago aggregating 11,728,000 miles, the revised schedules to take effect on June 2.

This economy has been accomplished by abandoning duplicate service between Chicago and the Pacific coast cities and assigning to the short and direct routes to each city the fastest through service. Under this plan the Atchison, Topeka & Santa Fe Ry. will be the preferred route to Los Angeles; Chicago & North Western, Union Pacific and Southern Pacific to San Francisco; Burlington and Northern Pacific to Portland; and the Chicago, Milwaukee & St. Paul to Seattle. The fast trains will make the run in 72 hours to each city. There will be a secondary train carrying all classes of equipment scheduled in 72 hours. The other transcontinental roads will operate such service as may be necessary to accommodate their intermediate travel on reasonable schedules.

On the same date the mail schedules will be adjusted so that there will be a parity of mail service between Chicago and each of the rival commercial centers on the Pacific coast. The fast mail trains will cover the distance between Chicago and Pacific coast terminals in 65 hours.

The public will be adequately served under the new arrangement, although it is probable that more upper berths will be sold in the future than in the past.

The passenger committee for the western district has now started working on the rearrangement of the schedules to the southwest, where important economies can also be effected with out affecting public convenience.

## Compensation of Railways for Carrying Mails.

On May 3, the Board of Railway Commissioners gave notice of its intention to hear in Ottawa, on May 16, the application of the C.P.R. and G.T.R., on behalf of themselves and other railways carrying mails, asking that fair and reasonable rates be fixed for such carriage, pursuant to the reference of the matter to the board by order in council of Mar. 7, 1917, for the determination as to the accuracy or inaccuracy of the claim made by the railways that the present rates are inadequate, and if it is found that they are inadequate, then to determine, as the result of evidence to be submitted by the Post Office Department and by the railways, what would be a fair rate of payment for service.

On May 14, notice was sent by the board to parties interested, that at the request of W. D. Hogg, K.C., and by consent of the C.P.R. and the G.T.R. counsel, the application would be heard on May 16. The notice added:—"Should the matter be set down for hearing at a subsequent date, due notice thereof will be given."

Canadian Railway and Marine World understands that the application for the abandonment of the hearing fixed for May 16 was made by the acting Postmaster General's request. The application has not been withdrawn and will probably be heard in the near future.

The Canadian Northern Ex. Co.'s service has been put in operation over the C.N.R., between Capreol and North Bay.



## Canadian Government Railways Operating Results.

The Canadian Government Railways, as operated at Mar. 31, 1917, had a total length of 4,063.84 miles, extending from the Maritime Provinces in the east to Winnipeg in the west. The lines making up the system are the original government lines, the Intercolonial Ry., 1,518.39 miles; the Prince Edward Island Ry., 275.20 miles; acquired branches of the Intercolonial Ry., the New Brunswick & Prince Edward Island Ry., 36.05 miles; the International Ry. of New Brunswick, 111.30 miles, and the St. John & Quebec Ry., owned by the Province of New Brunswick and operated by the C.G.R., 119.87 miles; the National Transcontinental Ry., 1,811.28 miles, with the Lake Superior branch, 191.75 miles, which branch is leased from the Grand Trunk Pacific Ry.

### Earnings.

Intercolonial .....	\$16,767,386.89
Prince Edward Island .....	630,045.63
International Ry. of N.B. ....	116,678.67
St. John & Quebec .....	70,759.62
New Brunswick & P.E.I. ....	38,336.75
National Transcontinental Ry. and Lake Superior Branch .....	5,916,550.99

Total .....

### Working Expenses.

Intercolonial .....	\$15,653,357.78
Prince Edward Island .....	833,853.02
International Ry. of N.B. ....	165,107.26
St. John & Quebec .....	98,300.42
New Brunswick & P.E.I. ....	72,357.80
National Transcontinental Ry. and Lake Superior Branch .....	7,206,922.20

Total .....

Net percentage on operation.....

vote for construction and betterments, including equipment, for the Canadian Government Railways, gave information as to the receipts and expenditure for the year ended Mar. 31, 1918, the figures for the last two months being estimated. The total mileage operated by the C.G.R. was 4,130.84. He said that during the past financial year, Canadian railways have been working at full capacity and the government railways have received their fair share of business. But though the earnings during that period reached high water mark, the actual net results were not such as he would have liked to report. The reason for this was that the costs of operation and maintenance had so largely increased. Fuel had almost doubled in price, living conditions, owing to the war, had necessitated very large increases of wages to all classes of labor; supplies of all kinds had very greatly advanced; equipment had at least doubled in price; but, taking everything into consideration, the results achieved had been equal to those of other railways. The total working expenses on all the government railways were \$32,298,947.60, against \$24,627,271.48 for the year ended Mar. 31, 1917, and \$17,797,061.11 for the year ended Mar. 31, 1916. The earnings for the year ended Mar. 31, 1918 were \$27,004,666.61, against \$23,468,998.99 for the year ended Mar. 31, 1917, and \$18,373,143.45 for the year ended Mar. 31, 1916. Although there was an increase of nearly \$4,000,000 in the earnings for the year, the deficit was \$5,294,280.99, compared

### Traffic Statistics.

	Intercolonial.	P.E.I. Ry.	New Brunswick & P.E.I. Ry.	International	National Transcontinental	St. John & Quebec
Loco. mileage .....	11,178,943	458,376	65,611	86,516	3,942,535	77,597
Train mileage .....	8,557,782	368,495	40,101	78,894	3,367,485	72,531
Car mileage .....	131,874,021	2,143,610	238,604	683,821	69,429,569	396,623
Ratio of earnings to gross earnings...%	98.82	67.45	100	100	100	100
Ratio of expenses to gross earnings...%	93.35	132.35	188.74	141.51	121.81	138.92
Expenses per train mile cents .....	181.45	159.46	180.44	209.40	214.01	135.53
Expenses per mile of line .....	\$10,226.75	\$2,135.15	\$2,007.15	\$1,483.44	\$3,598.01	\$820.06
Passengers carried ....	4,537,454	401,636	14,434	33,508	728,426	43,924
Total mileage .....	326,836,728	9,931,236	285,083	1,387,821	49,321,113	1,157,018
Total freight—tons.....	6,770,224	150,101	67,533	125,044	3,161,260	53,496
Freight mileage .....	1,809,471,327	5,740,617	1,437,952	6,364,955	1,185,789,413	2,118,153

The excess of earnings over working expenses on the Intercolonial of \$1,114,029.11 was partly absorbed by the payment of \$1,200 rental of the Vale Ry. at New Glasgow, N.S.; \$1,070,334.64 credited to the rail, fire and equipment renewal accounts as provided by the act of 1912, and the payment of \$4,000 as compassionate allowances under special votes of parliament. The total operating deficiencies on the other lines were \$1,604,168.98, to which is added \$90,000 paid as interest on the purchase price of the International Ry. of N.B., \$5,673.42 interest on the purchase price of the New Brunswick & P.E.I. Ry., pending payment, and \$600,000 paid to the Grand Trunk Pacific Ry. for rental of the Lake Superior branch, making a total deficiency on operation of \$2,299,842.40. The country is also called upon to find the interest on the public debt created by the issue of bonds to meet the construction cost of the Intercolonial Ry., the Prince Edward Island Ry. and the National Transcontinental Ry.

Following are statistics of the steamship traffic between Prince Edward Island and the mainland:—Passengers, 48,712; mileage, 1,903,929; freight tons, 75,314; mileage, 3,340,617.

Results for Year Ended Mar. 31, 1918.

The Minister of Railways in the House of Commons on May 17, in dealing with a

with a deficit of \$1,158,272.49 for the year ended Mar. 31, 1917, and a surplus of \$576,082.34 for the year ended Mar. 31, 1916.

The deficit on the Prince Edward Island Ry. for the year ended Mar. 31, 1918, was \$488,172, the largest in the history of the line. It had never been possible to make this railway pay.

## A Railway Manager's Poem.

G. E. Graham, General Manager, Dominion Atlantic Ry., is the author of the following verses, which were sung at a public meeting recently at Kentville, N.S., where he is located.

Johnny get your hoe, get your hoe, get your hoe.  
Make your garden grow, make it grow, make it grow.  
Plant your seeds from sea to sea,  
Let them work for liberty.  
Hurry right away, don't delay, start today.  
Forward to the land with a right willing hand.  
So we'll help defeat the Hun,  
Now we've got him on the run.

Over there, over there, over there,  
Send the food, send the food, over there,  
For our brave boys need it, our brave boys need it.  
The calls are coming everywhere.  
So observe and preserve  
Preserve the food, save the food, and conserve.  
So we'll help win the cause of freedom.  
And we'll plant, save and send, till it's over, over there.

## Acquisition of Maritime Province Railways by Dominion Government.

The supplementary estimates submitted to the House of Commons, May 20, provided \$518,000 for the purchase of local lines in the Maritime Provinces, under the terms of the act relating to the taking over of lines built under corporate ownership. Following is the provision in the estimates:—

To provide for the purchase of the following railways at amounts not exceeding those set out in each case:—

Caraquet & Gulf Shore Ry. ....	\$200,000
Elgin & Havelock Ry. ....	30,000
Kent Northern Ry. ....	60,000
Moncton & Buctouche Ry. ....	70,000
St. Martin's Ry. ....	65,000
Salisbury & Albert Ry. ....	75,000
York & Carleton County Ry. ....	18,000

We are officially advised that the Government has bought the Elgin & Havelock, Moncton & Buctouche, St. Martin's, Salisbury & Albert, and York & Carleton Railways. Amounts have also been provided to buy the Caraquet & Gulf Shore and Kent Northern Railways, and if the owners do not wish to sell at the amounts named, the government will not buy the lines.

When the items were under discussion in the Commons on May 23, the Minister of Railways said:—"The lines covered by these items have been operating for years at a loss, and it is really now impossible for them to operate on account of the loss they are making. We are now taking them over, and not at a price that any one would feel is exorbitant. For instance, in the case of the Elgin & Havelock, they have agreed to sell their line for \$30,000. The rails alone on that line, if we were to sell them for scrap, are worth about \$80,000. We are getting five of the railways mentioned at about one-third the value of the rails. For the Kent Northern, I have put in \$60,000. They have not agreed to accept it. Neither have the Caraquet & Gulf Shore people agreed to accept the \$200,000. To those two lines we have made these offers, which are on about the same basis as the others mentioned before. If they do not accept, we will not pay any higher price, and the amounts will not be paid. But I am placing them in the estimates to give the owners the opportunity, and to allow us to take over the lines, and thus close out the small lines which are so unsatisfactory in New Brunswick."

In reference to the Caraquet & Gulf Shore, the Minister of Public Works said: "We have offered them \$200,000 for the railway. They cannot make 200,000 cents out of it for the next 10 years. We will not arbitrate. We will not pay any more. We think they will take it."

The supplementary estimates also provided \$200,000 to bring the lines mentioned up to the Canadian Government Railways branch lines standard, in connection with which the Minister of Railways said:—"If we do not get the Caraquet & Gulf Shore or the Kent Northern, we will only need probably a third of the amount."

The Pullman Co.'s carrier business has been taken over by the U.S. Government, and placed under the U.S. Railroad Administration. It is stated that the company will be paid a rental based on the average of three years earnings prior to June 30, 1917, and that the manufacturing part of the business will not be interfered with.



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## Halifax Ocean Terminals Canadian Government Railways.

The Minister of Railways stated in the House of Commons, May 17, that it is expected to have the Halifax ocean terminals practically completed during this year. During the past year use was made of such portions of the terminals as were available, and had the works not been undertaken, it would not have been possible to handle the traffic which has developed at the port during the war. The present status of the works is as follows: Grading is practically completed; overhead bridges carrying streets across the railway are all practically completed. Sufficient trackage has been installed to serve the two temporary sheds built last year, and two large temporary sheds on pier A, which were rushed to completion after the explosion of Dec. 6, 1917, and which are now in use, together with a 100 car train track yard for serving the north end of the city. The placing of concrete blocks for quay walls is practically completed, and there remains only a small quantity of concrete work and granite facing in order to finish the quay walls. The filling has been proceeded with, but there still remains over 500,000 yards of filling to be placed behind the quay walls. Arrangements are being made for the erection of a temporary station and the construction of passenger car yard with car cleaning and repair facilities for the handling of the passenger traffic business of the city, as North St. station and facilities are not suitable for the carrying on of this work since the explosion. The North St. station was so badly damaged that business must be removed from it at the earliest possible moment. The contractor had stated that the new station would be ready for occupation by September.

## Preventable Accidents to Railway Employees.

The Board of Railway Commissioners has issued a circular stating that it notes from its reports that a considerable number of accidents result from employees attempting to get on or off moving cars or locomotives, or attempting to crawl under moving cars, or to get through moving cars between or over couplers. The following detail shows the situation for 1916 and 1917, as disclosed in the board's reports:—

	1916.		1917.	
	K.	I.	K.	I.
Jumping off train in motion....	5	14	1	28
Attempting to board train.....	2	14	2	26
Adjusting couplers, coupling and uncoupling . . . . .	5	39	5	53
Crawling under cars .....	—	1	—	1
Crawling through cars over cou- plers . . . . .	1	—	—	7
Caught while passing through cars between couplers .....	3	4	—	—
Riding on pilot of engine .....	2	2	1	3
	18	74	9	118

The employees killed in 1916 from the classes of accidents above set out amount to 15% of the total employees killed, while for 1917 the figures are 5.7%. Those injured represent, for 1916, 9.5%, and for 1917, 10%. This represents a preventable injury; and the board desires each railway to bring this matter, by bulletin or other publication, properly before the attention of its employees, so as to prevent in so far as possible the occurrence of such accidents.

The board has also issued a circular stating that the following rule has been adopted by some railways for the protection of employees, viz.: "Where two main

tracks parallel each other and are less than 20 ft. from center to center, whether such tracks are for double or single track operations, employees in every instance, when stepping out of the way of approaching trains, must move to the right of way and not to the other track. Foremen will be personally responsible for educating their men accordingly."

The board desires to be informed by all railways whether they have such a rule in effect, and if not, what, if any, objection they would urge against the rule in question being applied generally.

## Consolidation of Railway Ticket Offices in the United States.

The Director General of U.S. Railroads announced, early in May, that arrangements have been made for the consolidation of city ticket offices in the following cities in the eastern region: New York, N.Y.; Boston, Mass.; Philadelphia, Pa.; Baltimore, Md.; Wilmington, Del.; Pittsburgh, Pa.; Atlantic City, N. J.; Buffalo, Syracuse, Rochester, N.Y.; Reading, Pa.; Williamsport, Pa.; Newark, N.J.; Cincinnati, Ohio; Columbus, Ohio; Detroit, Mich.; Dayton, Ohio; Cleveland, Ohio; Indianapolis, Ind.; Toledo, Ohio.

There will be five offices in Greater New York—four on Manhattan Island—located as follows: 66 Broadway; Stewart Building, on Chambers St., facing City Hall Park; somewhere in the lower 30's in the hotel district in that section; 114 West Forty-second St.; and one office in Brooklyn on Fulton St., present offices of the Pennsylvania Rd. and New York Central Rd.

Rental of the offices vacated in these cities is approximately \$1,070,000 a year. The rental of the consolidated offices will be \$213,200 a year.

Arrangements are also being made to consolidate the offices in Chicago, St. Louis, and Louisville. These are borderline points and require joint action on the part of the eastern and western districts. Similar consolidations will be made in the western and southern districts, and will be announced later.

**Pacific Great Eastern Ry. Settlement.**  
The British Columbia Legislature ratified the agreement made between the Province and Foley, Welch & Stewart, F. Wilson, D'Arcy Tate and E. F. White, respecting this railway, which was summarized in Canadian Railway and Marine World for April. The act authorizes the taking over of the company's charter by the province, and the appointment of future directors by the government, with such powers as may be delegated to them. There are to be three directors of the P.G.E. Ry., and three for the P.G.E. Development Co. The formal transfer of the stock, etc., to the government was made at a meeting of the original directors and the representatives of the government, April 24.

**Canadian Government Railways Suspense Account.**—Early in the Dominion Parliament's recent session the Minister of Railways introduced a resolution to provide that the working expenses of the Canadian Government Railways and of any railway under the charge and management or direction of the Minister of Railways and Canals shall be paid out of the receipts and revenues of the said railways, etc. Considerable opposition was shown by several members of the Commons and, after being on the order paper for some weeks, the notice of motion was withdrawn.



## Railway Wages and Rates Raised in the United States.

The Director General of U.S. Railroads announced on May 26 pay increases for nearly 2,000,000 railway employees, effective June 1, and retroactive to Jan. 1 last, carrying out substantially recommendations of the Railroad Wage Commission. The aggregate of the increases probably will be more than \$300,000,000 a year, half of which will be distributed within a few weeks as back pay in lump sums ranging from about \$100 to nearly \$200 each.

The Director General departed from the Wage Commission's recommendations in the following particulars: "The principle of the basic eight-hour day is recognized, but owing to exigencies of the war situation, hours of employment are not actually reduced and overtime is to be paid pro rata; future adjustments of pay are to be on the basis of eight hours. In addition to the ordinary scale of increase, day laborers employed mainly on track work are to get at least  $2\frac{1}{2}c$  an hour more than they received Dec. 21, 1917. A minimum of  $55c$  an hour is established for the shop trades, including machinists, boilermakers and blacksmiths, and women are to receive the same pay for the same class of work. Negroes are to get the same pay as white men get for similar employment."

### Increases in Freight and Passenger Rates.

To meet wage increases announced above and higher cost of coal and other supplies this year, the Director General has ordered railway freight rates raised 25%, and passenger fares increased to  $3c$  a mile from the present basis of about  $2\frac{1}{2}c$ . It is estimated that this will bring between \$800,000,000 and \$900,000,000 more revenue to the railways within the next year. It represents by far the biggest rate increase in the history of railways. The new freight charges, which cover both class and commodity rates, become effective June 25, and the passenger increase will go into effect June 10.

Issued under authority granted by the Railroad Act to President Wilson, acting through the Director General, the order wipes out all intra-state lower rates effective on either freight or passenger traffic. Travellers in standard sleeping and parlor cars are required to pay  $3\frac{1}{2}c$  a mile in addition to sleeping and parlor car fares, and in tourist sleeping cars,  $3\frac{1}{4}c$ . Sleeping and parlor car rates remain the same.

Commutation and other suburban rates on railways are increased 10c. Fares on electric interurban lines are not affected. Special excursion, mileage, convention and tourist rates, with a few exceptions, are discontinued; privileges, such as stop-overs and free side trips, are abolished, and excess baggage charges are increased.

Both freight and passenger rates on boat lines operated on the lakes, rivers and coastwise by railways are to be raised proportionately with the general increases. Export and import freight rates are ordered cancelled, and the higher domestic rates will apply to and from ports. A number of flat increases, instead of percentage additions, are ordered for coal, coke, lumber, ore, stone, grain, cotton, live stock, meats, sugar, bullion and other commodities.

A. H. Magee, formerly local manager, Great North Western Telegraph Co., Port Arthur, Ont., died at Moncton, N.B., May 16, aged 26.

## Daylight Saving to End October 27.

The Board of Railway Commissioners passed general order 233, May 11, as follows:—Re general order 227, April 12, as amended by general order 228, April 16, directing all railway companies, including government railways, in Canada to advance by one hour the standard time used by them in the different zones in which they operate; the said change to become effective on the respective railways and in the said different zones not before 12 o'clock Saturday evening, April 13, and not later than 2 o'clock Sunday morning, April 14, and to remain in force until 2 o'clock on Thursday morning, Oct. 31, 1918: Whereas the Governor in Council by order in council dated May 7, has amended order in council 898, dated April 12, so that the prescribed time during which the Daylight Saving Act, 1918, shall be in force shall be until 2 o'clock on the morning of Sunday, Oct. 27, the day fixed in the United States for returning to the usual time, it is ordered that the general order 227 be amended to provide that the prescribed time during which the Daylight Saving Act, 1918, shall be in force shall be until 2 o'clock on the morning of Sunday, Oct. 27.

## Delaware & Hudson Co's Report.

The Delaware & Hudson Co. operates 909.38 miles of main track mileage, of which 805.20 miles represents railways owned, the latter including the Quebec, Montreal & Southern Ry., and the Napierville Junction Ry. in Quebec. The directors report for the year ended June 30, 1917, says, under the heading of "Allied Steam Railways": "The Quebec, Montreal & Southern Ry. had an increase in its operating revenues of \$132,361; its operating expenses increased \$123,454; its income from hire of equipment increased \$65,636, and its net income, not making any deduction for interest due to your company, was \$282,411, an increase over 1916 of \$91,565. The Napierville Junction Ry. had an increase in operating revenue of \$66,452; operating expenses increased \$49,886, and net income was \$52,684, an increase of \$2,152 over 1916. A dividend on the capital stock, at the rate of 6%, for the year ended Dec. 31, 1917, was declared."

The stocks owned by the D. & H. Co. include 10,000 shares of the Quebec, Montreal & Southern Ry., of the par value of \$1,000,000, and 12,000 shares of the Napierville Junction Ry., of the par value of \$600,000.

**Toronto Union Station.**—While work is going on all the time upon the new union station in Toronto, from the outside point of view very little progress is seen. Sir George Bury, and other officers of the company, made an inspection of the building recently and expressed themselves as being satisfied with the progress made. The contractors expect to have the work completed by the end of the year, but Sir George Bury is said to have expressed the opinion that with a little hustling the station would be ready for occupation by September. The question of the entrance of the trains is, however, one that may stand in the way of the immediate use of the station, as the city may desire to have the viaduct project carried out in connection. The railway companies will probably make application for the temporary use of the station, with the tracks on the present low level. (Dec., 1917, pg. 471.)

## Miscellaneous Marine Items.

**The International Mercantile Marine Co.** is reported, from New York, to have practically completed arrangements for the transfer of its steamships, which at present run under the British flag, to British interests.

**Dominion Government Steamship Montmagny.**—The Marine Department has accepted a tender from C. C. Chauveau, of Quebec, and Horace Dussault, of Levis, for the purchase and removal of the s.s. Montmagny, which foundered in the St. Lawrence a few months ago.

**Vessel Classification for Customs Drawback.**—An order in council has been passed at Ottawa providing that the classification of the American Bureau of Shipping may be accepted for drawback purposes in respect of ships and vessels built in Canada since Nov. 1, 1916.

**Fort William-Georgian Bay Freight Rates.**—Cleveland, Ohio, press dispatch, May 7:—A small steamship was placed today to load wheat at Fort William at  $3\frac{1}{2}c$  to Georgian Bay and  $4c$  to Buffalo, and indications are that vessels of that class will take care of the grain movement for some weeks to come.

**British Columbia and Alaska Freight Rates.**—Washington, D.C., press dispatch, May 7:—The Interstate Commerce Commission has tentatively approved the Pacific & Arctic Railway and Navigation Co.'s application for increased class and commodity transportation rates between Seattle and other Pacific ports of call and points in Alaska and British Columbia.

**Electrically Propelled Ship.**—London, Eng., press dispatch:—The first electrically propelled merchantship built in England, and the largest electric vessel in the world, is undergoing its finishing touches at a British shipyard, and will soon start on its first voyage. The vessel is designed on a system in which a combination of steam and electricity is employed.

**Crews for Canadian Built Wooden Steamships.**—It is announced from Victoria, B.C., that owing to a lack of white seamen on the Pacific coast, the British authorities, for whom the Imperial Munitions Board has been superintending the building of wooden steamships in British Columbia, have been compelled to engage Chinese for deck and engine room work. The first lot arrived on this side from Hong Kong recently, for service on the s.s. War Yukon.

**The Montreal, Ottawa & Georgian Bay Canal Co.** has been granted an extension of time for the commencement and completion of the works authorized by its act of incorporation, to May 1, 1921, for the commencement, and to May 1, 1927, for the completion. It is provided that \$50,000 must be expended on actual construction by the first mentioned date, and that the Dominion Government's rights under the existing acts respecting the projected work, are not impaired.

**St. Lawrence Canal Proposal.**—In a discussion on the estimates in the House of Commons, May 19, a statement was read, dealing with the navigation problem, and suggesting the construction of a canal from Cardinal, Ont., on the St. Lawrence River, to Ottawa, so as to avoid the St. Lawrence Rapids. This project was estimated to cost \$50,000,000, and was considered preferable to the Georgian Bay canal scheme, which was estimated to cost \$150,000,000. It was stated that under the former scheme vessels would be able to go from the Great Lakes to Cardinal, through the canal to the Ottawa River and on to Montreal.



# Electric Railway Department

## The Winnipeg Electric Railway's Agreement with the City.

The Winnipeg City Council passed a bylaw April 29, confirming an agreement made between the city and the Winnipeg Electric Ry. The preamble sets forth that there has been developed and is being carried on in the city in competition with the company's street railway, another method of transportation of passengers for hire at cheap rates, commonly called jitneys, and that the city has agreed to use all its powers to eliminate such competition. It is agreed that in consideration of the council passing a bylaw to eliminate the jitney competition, that the company will carry out certain betterments and give an improved service, the agreement to run to Jan. 31, 1927. The following are the bylaw's principal provisions:—

The company undertakes to furnish adequate transportation for the city by means of its street railway, supplemented by motor busses. It will at once proceed to remodel its present rolling stock, making the cars modern in every respect. The improvements are to include folding steps, proper front exits, latest type of lighting, and the removal of running boards on all cars without center aisles. Six of the remodelled cars at least per month are to be provided until the whole of the cars are renewed.

A sufficient number of modern trailer cars, with central entrances, are to be provided, to be used in connection with extra cars, so as to secure adequate service during the rush hour periods.

The company will operate motor busses to provide a service on Westminster Ave., and on such other streets as the council may order, where, under bylaw 543, the company is under obligation to extend its street railway system. These busses are to be operated as part of the street railway system, with the same fares and transfers, and they are to be operated until the railway lines are extended to serve the Westminster Ave. or other districts. The company shall not have the right to operate a system of motor busses, except on Westminster Ave., without the consent of the council, and then only upon such streets as may be prescribed. Such motor bus services to be supplemental to the electric railway service, and as a means of giving the public adequate facilities, but shall in no sense be exclusive. Nothing in the agreement is to extend or restrict the rights or liberties of the city or company as expressed or implied in sec. 24 of bylaw 543.

The company agrees to forthwith extend and operate its Sargent Ave. line 2,200 ft. from the present western terminus, in accordance with the terms of bylaw 543.

Several sections deal with the question of electrolysis, which has been a source of controversy and legal action between the city and the company for several years. The company agrees to instal by Mar. 31, 1921, a system of insulated return feeders to eliminate electrolysis, in accordance with Professor Ganz' recommendations; consents to a judgment being entered in favor of the city in connection with a suit now pending in the courts, for damages to city water mains due to electrolysis, a reference being made to a referee for the assessment of damages, which shall be paid by the company forthwith after the finding of the

referee; agrees to carry out order 105 of the Manitoba Public Utilities Commission as to the grounding of secondaries; consents to the making of an order by the Manitoba Government embodying the provisions of schedule A, chap. 24, of the statutes of 1918, the obtaining of which order will not preclude the city from applying to the government for additional rules and regulations; and finally it agrees to pay the city the reasonable cost and replacement of any underground structures belonging to the city found to be damaged by electrolysis, until the company has complied with the regulations of schedule A, chap. 24, statutes of 1918, and for five years from the date of this agreement. As chap. 24 of the statutes of 1918 takes the place of order 261 of the Manitoba Public Utilities Commission, the company agrees to abandon its appeal to the Imperial Privy Council, and the city agrees to have the order rescinded, each party to defray its own costs.

The company agrees to remove from the streets at its own expense all poles which have been abandoned; in the business section of the city to transfer its open wires from poles to suitable buildings where there are such, the use of which can be obtained at reasonable rates; and in the business area to replace worn out wooden poles with steel poles. The City Engineer to decide all questions under these sections.

Wherever high potential wires cross the streets, double cross arms shall be placed at each side of each street, and each of the 20,000 volt transmission line conductors running from no. 5 substation to the south city limits shall be dead ended upon suitable strain insulators attached to the cross arms, and the conductors for bridging the gap at the crossing shall be made up and supported in a similar manner, the necessary "jumpers" joining the two sets of conductors being carried over the cross arms and insulated by top-pin insulators supported by the cross arms. All pole lines at street intersections are to be of such a height and strength as to provide proper clearances.

The company agrees that it will at once proceed with the betterments and improvements agreed upon, spending or incurring capital obligations of not less than \$25,000 therefor, averaged over each year for three years, and will give a bond of \$100,000 for the due performance of this contract. The City Engineer is to be the arbitrator in matters where differences arise, but an appeal may be made to the city council. Under certain conditions the City Engineer may grant extensions of time for the carrying out of the various works.

The point upon which there was the greatest difference of opinion was as to passenger fares, and it is agreed that nothing in the agreement or in the negotiations leading up to it, throughout all the stages, shall be construed as a consent by the council that the company is at any time to make an application for an increase of fares, or as an indication that such increase should be granted, the intention being that the company and the city shall be in the same position with reference to fares as if the present agreement had not been made, and as though there had been no negotiations, resolu-

tions or expressions of opinion upon the matter.

The company abandons all claims for damages against the city on the ground that the city allowed the operation of jitneys in contravention of the company's charter, particularly referred to in a letter of April 4, 1917, and it is agreed that the company is not to have any greater privileges or rights than given to it in bylaw 543, except as they are supplemented in this agreement.

The city agrees on its part to pass all further bylaws, or to amend any bylaws as may be necessary to prevent the jitney competition, or to apply to the legislature for any further powers that may be required.

The jitney bylaw, which is attached to the other bylaw, provides as follows:—No person or association of persons, firm or corporation, shall hereafter be allowed to operate for hire any jitney car, automobile or bus along any of the Winnipeg streets. It shall be unlawful to carry for hire or engage in the transportation of any persons for compensation on any Winnipeg streets with any jitney; taxicabs licensed or to be licensed under sec. 9570, or any amendment thereto, to charge 25c or more per passenger, are exempted from the operation of this bylaw. Other sections, four and five, deal with personal solicitation and the use of signs suggesting that passengers may be carried; and declare that no license shall in the future be issued for the operation of a jitney. Another section repeals sec. 2 of bylaw 9539, and another provides that the penalties provided by bylaw 1630 shall be imposed for any breaches of this bylaw.

## The Toronto Railway and City Finances.

In a recent report to the Toronto Board of Control by the city's Commissioner of Finance, it was stated that for the repair and reconstruction of track allowance, there has been appropriated for 1918, \$250,000. In previous years, money for this purpose was raised by the sale of debentures, but as the date for the expiry of the Toronto Ry.'s franchise, Sept., 1921, is fast approaching, this plan has been abandoned. The outstanding loans in this connection, total \$4,231,734, with a debt charge of \$776,814.

The Commissioner also reported as follows:—"From the commencement of the franchise of the company in 1891, up to the close of 1917, the city received on account of mileage, \$2,026,767, and in addition \$10,326,595 on account of percentage, or, in all, \$12,353,362. During the same period, the city expended on repair and reconstruction of track allowance, \$5,944,258, or \$6,409,104 less than the amount received from the company. It is greatly to be regretted that the surplus was not accumulated, instead of being thrown into current revenue from year to year. If such had been done, a very substantial fund would have been available for the acquisition of the railway in 1921."

Raymond Beaudry has been appointed Secretary, Montreal Tramways Commission.



## Increases in Electric Railway Freight and Passenger Rates.

Canadian Railway and Marine World for May gave in full the Board of Railway Commissioners judgment authorizing the London & Port Stanley Ry. to advance its freight and passenger rates, also particulars of orders passed authorizing the Lake Erie & Northern Ry., the London & Lake Erie Ry. & Transportation Co. and the Oshawa Ry. to advance rates. The board has also passed the following orders:—

**British Columbia Electric Ry.**—27,159, April 26. Authorizing British Columbia Electric Ry. to increase freight rates of Vancouver & Lulu Island Ry., and Vancouver & Fraser Valley Ry., to conform with increases granted, under the board's judgment of Dec. 26, 1917, to steam railways operating in Pacific territory, viz., an increase of 10% in freight rates, and an increase in coal freight rates of 15c a ton, the increased rates to become effective within 15 days from date of order.

**British Columbia Electric Ry.**—27,184, May 10. Approving standard freight tariff of maximum mileage tolls, C.R.C. 107, to become effective May 20 on Vancouver & Lulu Island Ry., and Vancouver, Fraser Valley & Southern Ry., the tariff having been filed on the basis permitted by the board in order 27159, April 26, 1918.

**Quebec Railway, Light, Heat & Power Co.**—27208, May 7. Authorizing Quebec Ry., Light, Heat & Power Co. to publish and file tariffs increasing its passenger tolls 15% to a maximum of 2.875c a mile, the tariffs to be made effective after the company's compliance with sec. 331 of the Railway Act. This applies to the company's Montmorency Division only, which consists of suburban lines, and not to the city division. See additional information below.

**Quebec Ry., Light & Power Co.**—27226, May 21. Approving Q.R.L. & P. Co.'s standard passenger tariff of maximum mileage tolls, C.R.C. 34, to become effective June 2, the tariff having been filed on the basis permitted by the board, in order 27208, May 7.

Following are particulars of other applications, changes, etc.:—

**The Brantford & Hamilton Electric Ry.** has applied to the Board of Railway Commissioners for an order permitting it to file tariffs providing for a general advance of 15% in its freight rates.

**Edmonton Radial Ry.**—Particulars of increases of passenger fares on this municipally owned railway are given on another page of this issue.

**The Chatham, Wallaceburg & Lake Erie Ry.** has applied to the Board of Railway Commissioners for authority to advance its freight and passenger rates to the same rate as the steam railways have been authorized to charge.

**The Cornwall St. Ry., Light & Power Co.** has put in force a new tariff of freight switching charges, viz., 1c per 100 lb., minimum \$3 a car, maximum \$8. The former rate, which was \$2.50 a car of 40,000 lb., and ½c per 100 lb. over 40,000 lb., was found to be entirely inadequate and less than the service cost. The company handles carload freight only, between the C.P.R., G.T.R. and New York & Ottawa Ry. and the various manufacturing plants. In this connection it may be stated that there is nothing in the Ontario Railway Act, under which the Cornwall Company operates, to prevent a company

increasing its freight rates, provided proper notice is given and that such rates do not exceed the standard or maximum toll approved by the Ontario Railway and Municipal Board.

**The Grand River Ry.** has applied to the Ontario Railway and Municipal Board for authority to advance its freight and passenger rates 15%.

**The Hamilton Radial Electric Ry.,** on April 5, applied to the Board of Railway Commissioners for authority to file tariffs providing for a general advance in freight and passenger tolls to the same extent as was permitted by the board's order 213, Dec. 26, 1917. On April 9 the company amended its application by asking to be allowed to file the same rates that the board may allow in the case of other electric railways. On April 24 it withdrew the previous applications and substituted another, asking to be allowed to advance its passenger rates to 2½c a mile and its freight rates by 15%.

**The Hull Electric Co.** applied to the Board of Railway Commissioners recently for authority to file tariffs providing for a general increase in freight and passenger rates. The case was set down for hearing in Ottawa on May 21, when it was adjourned for 10 days to allow the Town of Aylmer to prepare an argument.

**The London St. Ry.'s** application to the London City Council for permission to increase its passenger fares was given in Canadian Railway and Marine World for March, pg. 113, and the council's practical refusal to entertain it was given in our May issue, pg. 211.

**The Montreal & Southern Counties Ry.** has applied to the Board of Railway Commissioners for authority to file tariffs providing for a general advance in freight and passenger rates to the same extent as the board has permitted in the case of steam railways.

**New Brunswick Power Co.**—Canadian Railway and Marine World for May contained a copy of a bill introduced in the New Brunswick Legislature, to authorize the New Brunswick Power Co. to advance its electric railway fares and its rates for gas and electric current. The bill was defeated in the legislature, owing to opposition by St. John citizens and newspapers, and a bill introduced at the city's instance was passed, providing for an investigation of all the company's property, franchise rates, etc., but with the proviso that the commission to be appointed under it may grant temporary relief, upon being satisfied that the same is necessary.

**The Quebec Ry., Light & Power Co.,** which, as stated above, has been authorized by the Board of Railway Commissioners to advance freight and passenger rates on its Montmorency (suburban) Division, applied in March to the Quebec City Council for permission to increase its street railway fares and gas rates in the city. The application is still before the council. Full particulars of it were given in Canadian Railway and Marine World for April, pg. 161.

**The Toronto & York Radial Ry.,** on April 13, notified the Ontario Railway and Municipal Board that on April 22, the sale of the following tickets would be discontinued on its Mimico Division:—

(a) 6 for 25c, good between Woodbine, East Toronto and West Hill.

(b) 4 for 15c, combination ticket, good between Woodbine, East Toronto and Beech Ave.

(c) 4 for 10c, combination ticket, good between Woodbine, East Toronto and Beech Ave.

(d) 4 for 25c, good between Woodbine and stop 26.

(e) 8 for \$1, combination ticket, good between Woodbine and West Hill.

(f) All return tickets.

The tickets referred to in clauses (b) and (c) were combination tickets, two of which were good for passage on the Toronto Ry. between Woodbine terminal and Beech Ave., the other two tickets being good for passage on the Toronto & York Radial between Woodbine and East Toronto. The franchise covering the issue of these tickets having expired, the company felt justified in withdrawing the rates.

The tickets referred to in sections (a) and (d) were issued under an agreement, which has expired.

The tickets referred to in sections (e) and (f) were voluntarily issued by the company and were subject to cancellation at any time.

The company's new fare is 5c for 3 miles or less, and over 3 miles, 2c a mile or fraction thereof, as allowed by the Ontario Railway Act. The company will take action at an early date to advance fares on its Mimico and Metropolitan Divisions.

**The Windsor, Essex & Lake Shore Rapid Ry.** has applied to the Board of Railway Commissioners for authority to file tariffs providing for a general advance in freight rates to the same extent as the board has permitted in the case of steam railways.

## Toronto Civic Railway Finances.

In a recent report on the city's finances, the Commissioner of Finance pointed out that the cost of operation of the civic railways for 1918, is estimated at \$325,879, and the annual debt charges on \$2,378,737 of outstanding debentures at \$171,064, a total of \$496,943. The revenue for the year is estimated at \$300,000, thus showing an anticipated deficit of \$196,943, apart from taxes and proper depreciation.

In this connection he said:—"It had been earnestly hoped that the recommendation to increase fares on the civic car lines (which was published in Canadian Railway and Marine World for April) would have been adopted, and that, as a consequence, the repeated yearly deficits, which bear so heavily on taxpayers generally, would have been eliminated, and the system placed upon an improved financial basis. There is no greater detriment to the advancement of public ownership than the continued administration of a municipal enterprise upon such a false and artificial basis as that upon which this system is operated. It has always appeared unjust and unfair to settle upon the general body of ratepayers, the cost of special services which are being enjoyed by a certain section of the community. The small increase in fares suggested could not possibly have constituted any hardship upon those who are being benefitted, and it is still hoped that council may see its way clear to adopt the recommendation made, which, if it did, would effect a reduction of one-third of a mill in this year's tax rate."

**London St. Ry. Wages.**—On the company's employees' application, a board of conciliation has been appointed, F. H. McGuigan, of Toronto, representing the company, Charles Ferguson, Secretary, Liberal Association, London, representing the men.



## Dominion Power and Transmission Co's Wages.

The board of conciliation which was appointed to consider the Hamilton St. Ry.'s conductors' and motormen's wages, and which consisted of Judge Livingstone, Chairman; S. F. Washington, K.C., of Hamilton, representing the company, and W. D. Robbins, of Toronto, representing the men, reported to the Minister of Labor on April 24, unanimously recommending an increase from April 1, the same to be in effect for 2 years. Following is a comparison of the old and new rates per hour:—

	New rate	Old rate
1st year .....	30c	24c
2nd year .....	34c	26c
3rd year .....	37c	30c

On April 1 the company made an agreement with the men, putting the new rates in force for 2 years from April 1. The agreement also provides that Sunday work shall be paid for at 4c an hour extra, and that time and a half shall be paid for overtime. Five cents an hour extra is to be paid for work on snow ploughs, sweepers and sand cars, and overalls are to be supplied for such work. For training students, 25c a day, or part of day, is to be paid. Extra conductors and motormen reporting at car barn and for relief changes are to be paid a minimum wage of \$8 a week, on condition that they report regularly.

New rates have also been put in force voluntarily on the company's interurban lines, viz., Brantford & Hamilton, Hamilton & Dundas, Hamilton, Grimsby & Beamsville, and Hamilton Radial, as follows:—

	New rate	Old rate
First 6 months .....	25c	22c
Second 6 months .....	30c	24c
Second year .....	34c	25c
Third and fourth years .....	34c	26c
Fifth year and thereafter .....	37c	30c

## Sandwich, Windsor and Amherstburg Railway Wages.

Following the board of conciliation report, the S.W. & A. Ry. entered into an agreement with its conductors and motormen on April 20, putting a new scale of wages into effect from April 1 for one year. Following is a comparison of the old and new rates:—

	New rate	Old rate
First 6 months .....	35c	29c
Second 6 months .....	37c	30c
Second year .....	38c	31c
Third year and after .....	40c	33c

One cent an hour extra will be paid in lieu of uniforms, the company supplying caps and badges.

Under instructions from the Minister of Labor, the board did not deal with the case of a conductor who had been dismissed for alleged ticket stealing.

**London St. Ry. Passenger Fares.**—In Canadian Railway and Marine World for May, in connection with the negotiations between the London St. Ry. and the London City Council, in regard to the company's application for an increase in passenger fares, the company's present average fare was stated as 4c, this being taken from a press report. We have been advised that the average fare received by the company during 1917 was 3.63c.

**The Toronto Civic Transportation Commission** has appointed Finance Commissioner Bradshaw, Works Commissioner Harris and E. L. Cousins, Manager and Chief Engineer, Toronto Harbor Commission, as a committee to make arrangements for taking over the Toronto Ry. by the city in 1921.

## Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**—Work on repairing and improving the line from New Westminster to Chilliwack, B.C., was expected to be completed by May 31. It was badly damaged by storms and floods in the winter. (Feb., pg. 77.)

**Sandwich, Windsor & Amherstburg Ry.**—As a result of the recent arbitration proceedings, the company has to provide signal arms at derailler approaches near Amherstburg, Ont., and lights at the loop at Sandwich, as additional safety appliances.

We are officially advised that the company proposes to divert about three miles of its line through the Canada Steel Co.'s property near Ojibway, Ont., by moving the line back about half a mile. It is also intended to lay a second track on a portion of this diverted line during the summer. (Feb., pg. 77.)

**Winnipeg Electric Ry.**—A press report states that plans are being made for starting operations in connection with the prevention of electrolysis, which the company is to carry out under the terms of its agreement with the city. (May, pg. 211.)

**Vancouver Jitneys' Elimination.**—By an act amending the Vancouver Incorporation Act, the British Columbia Legislature has authorized the Vancouver City Council to pass a bylaw prohibiting jitney or other motor transportation competition with the British Columbia Electric Ry. The section was passed after a lengthened discussion, in the course of which proposals to permit jitney traffic on streets other than those on which the electric railway operates were defeated. A new city bylaw is under consideration, under which the jitney traffic will be prohibited after June 30. The new bylaw will permit the operation of jitneys for hire at fixed rates, and the hiring of autos by the hour. There are one or two urban jitney lines serving routes where the B.C. E. Ry. is not operating which may be continued. This action is the result of Adam Shortt's report on the transportation question, following the strike of British Columbia Electric Ry. employees in June, 1917.

**New Cars for London St. Ry.**—The company has received recently the five single truck cars which it ordered in the U.S. in June, 1917, and it is installing their electrical equipment in its own shops. These cars are of the single end, p.a.y.e. type, 20 ft. 8 in. long on the body; 32 ft. 4 in. long over all; 8 ft. 2 in. wide over sheathing. They are of the same type as those put into service by the company early in 1914, being arranged with cross seats on one side, and a longitudinal seat on the other. The seats are padded, no springs being used, and are upholstered in rattan. The cars were fully described and illustrated in Canadian Railway and Marine World for Dec., 1913, Jan., 1914, and July, 1917.

**Hull Electric Co.'s Wages.**—As stated in Canadian Railway and Marine World for March, the company's employees asked for an increase of wages and other concessions. We have since been advised that the increase asked for was about 60%, also shorter hours, time and a half for overtime, and other minor items. A board of conciliation having been ordered, the company selected G. D. Kelly, barrister, Ottawa, as its representative, and the men selected Fred Bancroft of Toronto. Judge Gunn was appointed subsequently as chairman.

## The Toronto Ry. Appeals Against the Penalty of Car Shortage.

Canadian Railway and Marine World for May gave particulars of the Ontario Railway and Municipal Board's judgment fining the Toronto Ry. \$24,000 up to April 19, which was at the rate of \$1,000 a day, from Mar. 27, for not having provided additional cars, as ordered by the board. The company has appealed to the Appellate Division of the Supreme Court of Ontario on the following grounds:—

That the order is not one which the Ontario Railway and Municipal Board could make on its own motion. That the board had no jurisdiction to make the order, whether on its own motion or on an application for that purpose. That the order was not made for the purpose of enforcing compliance of any order heretofore made by the board. That under the powers contained in the Ontario Railway Act and amendments thereto, the board cannot direct a penalty to be paid for any neglect of the company prior to the date of such order.

The evidence shows that the Toronto Ry. did comply and use its best efforts to comply with the board's order, which directed the purchase of 100 new cars, and that it was impossible at the date of the order, owing to war and other commercial conditions existing, to obtain the cars ordered, although every effort was made to do so. The company should not have been ordered to furnish such cars, and the board's order of Feb. 27, 1917, was improperly made and without jurisdiction.

The company substantially complied with every order of the board, and the board should not therefore, have ordered the company to pay any fine or penalty. The order is against the evidence and the weight of evidence and contrary to law and the weight of evidence. Evidence was wrongfully rejected.

The Ontario Legislative Assembly had no jurisdiction to enact the Ontario Railway and Municipal Board Act, Revised Statutes of Ontario, and amendments thereto, and the Ontario Railway Act, chap. 185 of Revised Statutes of Ontario, and any amendments thereto, and D. N. McIntyre and A. B. Ingram have not been validly appointed as commissioners under such acts for the purpose of making such order, and have not jurisdiction to make the order complained of, upon the ground that the appointment of the said commissioners is not within Ontario's legislative authority. The company also appeals upon other grounds sufficient in law to support the appeal.

**Coal Saving in Montreal.**—The Montreal Tramways Co.'s additional contract for hydro electric power, particulars of which were given in Canadian Railway and Marine World for May, will probably enable it to save about 40,000 tons of coal during the 18 months covered by the contract. In this connection one of our subscribers writes:—"The conservation of about 40,000 tons of coal at, say, \$10 a ton on the power house floor, means far more than the mere money saving. It means that some 5 ships of 8,000 tons each would thus be relieved of one journey from the mines to Montreal—if ships were available. About 8,000 families, using 5 tons of coal each, will get coal easier than if this great quantity went up in smoke. Canada should give every encouragement possible to water power development, so that coal consumption for power production can be reduced."



## Valuation of London and Lake Erie Ry. and Transportation Co's Property.

The question of the purchase of the London & Lake Erie Ry. & Transportation Co.'s electric railway, by the London, Ont., City Council, has been under consideration as a definite proposition since Mar. 20, when the company's directors passed a resolution offering to sell to the city for \$420,000, a price which, it was stated, was equal to 50c on the dollar of the bond issue. The city, before taking any action, proposed that a valuation of the company's property and other assets should be made by the Hydro Electric Power Commission of Ontario, which had at an earlier date been considering the value of the L. & L. E. Ry. At a meeting of the city's board of control, May 10, a letter was read from Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario, and was subsequently referred for consideration to the finance committee. The letter was as follows:—

"In further reference to your favor of Mar. 9, in which you ask the Hydro-Electric Power Commission to furnish the board of control with an estimate of the value of the London & Lake Erie Ry. & Transportation Co.'s properties, I may say that, after deducting the cost of removing and disposing of the lands, buildings, materials, equipment and rolling stock, the engineers and land valuers of the commission estimate the value of the lands, buildings, materials, equipment and rolling stock of the company as of April 30, at \$262,164.

"In reply to your question and to enable the City of London to consider the advisability of purchasing and operating the company's properties in conjunction with the London & Port Stanley Ry., the commission's engineers, after a thorough investigation of the whole situation and the acquisition of detailed information from the company, report on the reconstruction and remodelling of the L. & L. E. Ry.'s properties between London and St. Thomas to enable it to operate in conjunction with the L. & P. S. Ry., including an extension of the company's lines to connect with the L. & P. S. Ry. terminals in London; also including the purchase of two new cars suitable for operation on either lines to replace those disposed of. The engineers also report that the value of the lands, materials, equipment and properties through and south of St. Thomas to a point north of Port Stanley, disposed of in connection with the line, would be sufficient to pay for the cost of reconstructing and remodelling the lines above referred to, leaving a balance of approximately \$20,000, which can be applied in the acquiring of the railway.

"The net revenue obtainable from the operation of the remodelled line of the company between London and St. Thomas accruing to the L. & P. S. Ry. between London and Port Stanley is estimated at \$16,425.00, taking into consideration the increased rates now in force and that will be in force, and making no allowance in the operating expenses for depreciation or taxes on the property. The above net revenue capitalized with sinking fund at 1.8%, based on 30-year bonds, would be sufficient to pay interest: 1.—At 5% on \$241,541.00 of bonds; 2.—At 6% on \$210,500.00 of bonds, with no allowance for depreciation and taxes in the operating expenses."

At a meeting of the London Board of Control, May 17, it was decided to take

up with the London Railway Commission the question of the purchase of the London & Lake Erie Ry. & Transportation Co.'s line between London and Port Stanley, Ont., the idea being that all the municipalities through which it runs should join in the purchase. The L. & L. E. Ry. & T. Co. has a connection with the St. Thomas Ry., operated by the city of St. Thomas, and a suggestion has been made that this line also be taken over and operated in connection with the London & Port Stanley Ry., the London Ry. Commission being reconstituted so that all the municipalities be represented on it.

A London press dispatch of May 23 said the L. & L. E. Ry. & T. Co. had made another offer to the city, viz., to sell the portion of its line from London to Stanley St., St. Thomas, for \$300,000, this not to include the car barns or any equipment in St. Thomas.

## The Toronto Railway and Women Conductors.

The company announced early in May, that it was willing to engage women conductors, if they were willing to undertake the work, and that a number of applications had been received. In order to deal with them, it was stated that special quarters would be allocated for their use, in charge of a matron, and that the hours of working and pay would be on the same basis as now applies to the men. It would be required that they first train for two weeks, after which they would be paid 30c an hour for the first six months, 32c for the second six months, 35c for the next 12 months, and 37c an hour afterwards. A press report stated recently that this matter was before the Ontario Railway and Municipal Board for its approval, on the granting of which, the company would proceed with the changing of its cars to the p.a.y.e. type. The question of the employment of women is not before the board, and is not connected with any proposed change in the construction of the company's cars, but is purely a domestic matter, with which the board has no concern. At a meeting of the company's employees, May 11, the following resolution was passed:—

"That it is the opinion of the members of the Toronto St. Ry. Employees' Union that it would be an injustice to women to have them train for two weeks without remuneration for conductors on the street cars, only to realize, after a short period that, owing to the system of operation, hours of labor and the conditions under which the work is performed, they were unable to stand the strain. We are also of the opinion that it would not be conducive to either the health or the moral standing of women to have them collect fares in crowded cars such as are found on the system. We note that in an interview with the press the Manager stated that it is the intention to remodel the cars into the p.a.y.e. type, and that the conductors will virtually become cashiers. We are of the opinion that if this is done returned soldiers should be engaged to fill vacancies as they occur, since men in broken health, or those who have lost a leg, could fill the position, and we feel that we would be remiss in our duty and show a lack of appreciation of what these men have done and suffered, if we did not appeal to the women of this country not to deprive those men of this opportunity of earning a living. Therefore, be it resolved that, if the company insist on employing women, we will refuse to instruct or operate a car on which women are placed for the reasons set forth. And any

attempt on the part of the company to discipline or discharge motormen or conductors for so doing will meet with prompt action by members of the union."

Towards the end of May it was stated that the Toronto Ry.'s General Manager had expressed his willingness to refer the question of the employment of women as conductors to a conciliation board, and the business agent of the Toronto Ry. Employees Union was also stated to be in favor of this.

## Increased Fares on Edmonton Radial Railway.

The Edmonton Radial Ry. put a new schedule of fares in operation on May 1, as follows:—Adults, single cash fares 7c; after 11 p.m., 10c. Tickets may be purchased on the cars at 4 for 25c, or at special places throughout the city at 5 for 25c. Two tickets are required for night fares; no workmen's tickets are issued. Juveniles—Under 6 years, free; 6 to 15 years, or high school students with certificates, 10 tickets for 25c, or half fare; after 11 p.m., 2 tickets or 5c cash. Transfers as usual. Tickets bought before May 1, will be honored after that date. Between 5 and 6.30 p.m., baby carriages and large parcels will be charged for at 5c each.

The Mayor has issued the following appeal to the citizens:—"Owing to the city's general financial condition and the urgent necessity of providing means which may tend to enlarge the street railway revenue, it has been found necessary to institute a new schedule whereby fares have been increased. This change has only been made by reason of the necessity of the situation, and I ask the citizens that they will recognize the action of council in that light. Although there must be some hardship, yet I appeal to the citizens to realize that the step has been taken in their interest, and ask them to rally to the support of the city and the street railway system, in a united effort to raise it to a more profitable basis."

Superintendent Moir reported May 2 that the new fares were proving generally acceptable to the people, and that, while a good deal of explaining had to be done by the conductors, the change from the old rates had been made in a satisfactory manner.

The following figures have been given out, showing the number of passengers carried, and the revenue earned during the first five days of May as compared with the corresponding five days of April. It is claimed that the increase of fares which came into operation at the beginning of May is responsible for the decreases reported.

Day.	Receipts.		Passengers carried.	
	May.	April.	May.	April.
1st .....	\$1,429.80	\$1,591.15	27,595	34,018
2nd .....	1,330.85	1,876.16	25,887	39,587
3rd .....	1,332.36	1,844.35	26,047	39,324
4th .....	1,540.21	1,903.15	30,409	40,522
5th .....	821.90	1,836.05	15,356	39,292

It is to be noted that while May 1 was a Wednesday, April 1 was a Monday.

**Hamilton & Dundas St. Ry. and Toronto, Hamilton & Buffalo Ry.**—The Dominion Parliament has confirmed an agreement made with the Hamilton & Dundas St. Ry., June 17, 1897, under which the Toronto, Hamilton & Buffalo Ry. obtains an entrance over its line into the town of Dundas, Ont. The agreement was made for 50 years, and was approved by the Ontario Legislature in 1898. When application was made to the Dominion Parliament in 1917, such opposition was offered by the town of Dundas, that the bill was withdrawn.



## Pre-payment Cars Proposed for Toronto Railway.

The Toronto Ry. has arranged one of its existing double truck cars on a pre-payment plan, and submitted it to the Ontario Railway and Municipal Board for approval. If it is approved, it is probable that a number of the cars will be so arranged and placed in service.

The changes made, are confined to the rear end, where the bulkhead has been removed, and the main floor of the car projected into the vestibule, in order to accommodate a seat for the conductor, and a stationary fare box. By this arrangement the seating capacity of the car is not interfered with, and there is ample room on either side of the conductor for entrance and exit of passengers. The rear vestibule is fitted with folding doors and folding step, and these are operated by a small pneumatic engine located above the door, and connected with a light signal to the motorman, to indicate immediately the doors are closed, without which signal, he should not start the car.

The space occupied by the conductor projects about 3 ft. into the vestibule, and is 2 ft. wide, the vestibule measuring 6½ ft. from the original car floor line. On entering the car, passengers would pass in front and to the right of the conductor, place fare in the box and pass into the car. Exit would be made either from the front, or back of the car, in the latter case, passing on the conductor's left. When the car is full, the conductor would move the handle in front of him, to start the door mechanism, thus closing the doors and raising the folding step in one operation, and at the same time, automatically giving the light signal to the motorman to start the car.

The door opening is 5 ft. wide, and the folding step, when down to allow passengers to enter the car, is 15 in. from the street level, the next step is 12½ in. to the vestibule floor, which is 9½ in. below the main car floor. The car carries signs on the front, and at the side rear end, requesting passengers to have the exact fare ready, and some improvements have been made in the arrangement of the route signs, which are of the illuminated type.

## The Montreal Tramways Co's Wages and Fares.

The City Commissioners of Montreal wrote, on May 16, to the mayors of the other five municipalities in which the Montreal Tramways Co. operates its electric cars, as follows:—

The Montreal Tramways Co.'s employees are asking for an increase of wages representing a total of about \$1,000,000. After several conferences with the Tramways Co. without any practical solution, the company's employees laid their request before the administrative commission of the City of Montreal, in order to obtain its opinion on the question at issue.

"In virtue of the contract entered into on Jan. 28, 1918, between the city and the Tramways Commission, and ratified by the legislature, the tariff for the transportation of passengers varies according to the amount of operating expenses, of the cost of maintenance, and so forth, of the system. The salary of the employees is included in such expenses. It follows that the increase of the salaries of employees as well as the increase of the price of materials required for operating the

company's system, materially affects the tariff for the transportation of passengers. This tariff must be fixed by the Tramways Commission, not only within the limits of the City of Montreal, but also in the other municipalities in which tramway lines have been established by the company.

"As the citizens of your town will be called upon, as those of Montreal, to pay any increase of rates, your council is interested for the benefit of such of your citizens as are using the tramways, in controlling the company's expenses so that the said rates may not be too high. Your council is therefore directly interested in the question now submitted to the administration commission of the City of Montreal. For the above reason our commission has deemed it advisable to call a meeting, at which the different interested municipalities would be represented, at the City Hall, Montreal, on May 22. Will you kindly call at once a meeting of your council in order that it may appoint one or more representatives, vested with the authority required to reach a decision on this question."

The demand of the employees, who number about 3,600, is for a very considerable increase of wages. Their present rate of pay is 25c an hour for the 1st and 2nd year, 26c for the 3rd and 4th year, and 29c for the 5th and following years. They have asked the company to start at 30c an hour, and increase to 32c after a year service, 35c after two years service, and 40c after three years service, maintaining that the high cost of living makes such an increase necessary, and pointing out that Toronto pays its electric railway conductors and motormen from 30c to 37c an hour.

Some of the company's officials had a conference with officials of the employees' union on May 23 upon the wages question. The union's secretary states that the men are asking for increases running from 25 to 40%, the average being 33 1/3%, while the company offers a minimum of 36c an hour for conductors and motormen. The present scale is 25c for 1st and 2nd year, 26c for 3rd and 4th year, and 29c for 5th year and thereafter. It is reported that the men will accept the company's proposal if an increase of wages is also given to shop men. There are also points in the agreement on which discussion is to take place.

## Calgary Municipal Ry. Finances.

The Calgary, Alta., city auditors' report on the city finances for 1917 contains the following references to the Calgary Municipal Ry.:—"The satisfactory result shown by the street railway is almost entirely accounted for by the large amount of bank interest earned on its depreciation fund, and on the substantial balance owed to the street railway by the general fund. There is also a remarkable rise in the value of inventory of material, which was certified to by the Assistant Superintendent in the absence of the Superintendent. Some three years ago it was decided by the city to reduce the charge to street railway revenue for depreciation until such time as traffic conditions became normal. We have looked into the comparative figures of the car earnings, which are: 1913, \$735,459.79; 1914, \$680,197.71; 1917, \$556,374.33, from which it is evident that the time has not yet arrived for a return to previous rates of depreciation under the ruling then made."

The auditors state that the non-payment of taxes is responsible to a large

extent for the shortage on sinking fund. The total amount at the credit of the sinking fund for the municipal railway should have been, at Dec. 31, 1917, \$302,236.51, whereas it was only \$258,914.86.

The municipal railway showed a profit from operation during 1917 of \$21,492.52.

Following are comparative statistics for the three months ended Mar. 31, 1918, and 1917:—

	1918.	1917.
Miles operated .....	728,983	631,394
Hours operated .....	74,386	64,428
Passengers carried .....	3,919,649	3,264,424
Revenue per car mile .....	21.734c	20.999c
Operating expenses per car mile ..	14.341c	15.255c
Operating expenses per car hour ..	\$1.405	\$1.492
Cost of power per car mile ..	3.371c	3.816c
Average fare per passenger ..	3.967c	3.969c
Average daily receipts .....	\$1,760.42	\$1,473.17
Average daily operating expenses ..	1,161.56	1,068.12
Average daily operating expenses, including fixed charges ..	1,738.81	1,639.55
Percentage, operating expenses to revenue .....	65.9%	72.5%

The balance of revenue over expenses for the three months was \$53,897.48, against \$36,454.50 in the same period of 1917. After paying all fixed charges, there was a surplus for the three months of \$1,945.41, against a deficit of \$14,974.57 in the same period of 1917.

## Sandwich, Windsor and Amherstburg Railway Improvements.

A letter written by Jas. Anderson, Vice President, S.W. & A. Ry., to the Ontario Railway and Municipal Board and to the Mayor of Windsor, Ont., was made public May 15. It states that the company is prepared to spend \$76,954.98 for double tracking on London St., and \$32,043.02 for extending double track on Ouellette Ave. from Park, to a little piece beyond Wyandotte, and putting in double curve at the corner of Ouellette and Wyandotte for the belt line cars, thus obviating the necessity of running the cars on the wrong side of the street along Ouellette Ave., as at present.

The letter also says:—"We are willing to carry out the extension in proposition no. 1, although we cannot undertake the whole work in 1918. We will construct the Ferry Ave. loop, the material for which is on hand and has been for four years; this to be the first work completed. We will double track London St. from Jeanette Ave. to the M.C.R., provided we are not asked to pay for laying the second track over the new C.P.R. bridge. If so, we will commence the double track on the west side of the bridge and complete to M.C.R., which will shorten the double track 600 ft. This will provide, if necessary, a 6 minute service along London St. and a 15 minute service along Sandwich St. in both directions, as requested by the city. The double curves at the corner of Sandwich St. and Ouellette Ave., and the extension of double track on Ouellette Ave. to Wyandotte St. will be taken up the following year."

It is stated that although the letter was sent to the Mayor on Jan. 22, it was not laid before the City Council, hence the company's publication of it.

Guelph Radial Ry. Wages.—It was reported, May 22, that the management of this municipally owned line had decided not to grant the employees' demands for a flat rate of 30c an hour, but felt that some increase in wages was required, and announced that it was prepared to pay 27c to first year men, and 28c after that period. The old scale was 25½c, 26½c and 27½c an hour.



## Electric Railway Notes Throughout Canada.

The Levis County Ry. put in operation on May 6 its new rates of passenger fares, full particulars of which were given in Canadian Railway and Marine World for April, pg. 160.

The British Columbia Electric Ry. put in operation on May 5 an early Sunday morning car service in Victoria, for the convenience of those desiring to spend the day outside the city.

British Columbia Electric Ry. employees at a meeting held May 11, decided to ask the company for a 20% increase of pay, to date from July 1, the present agreement expiring June 30.

Brantford Municipal Ry. employees sent an application to the railway commission of Brantford, Ont., recently for increases in wages. The chairman announced that the matter was under consideration.

The Montreal Tramways Co. resumed, on May 20, its service on Dorchester Ave., Montreal, which was diverted from the street during the construction of the Canadian Northern Ry. station approaches.

The Calgary Municipal Ry. has added a sight-seeing car to its equipment. The car was given its first run May 1, when a party of returning soldiers, on their way to Vancouver, were given a run round the city.

The Calgary, Alta., City Council discussed, on May 16, a proposal for raising extra revenue by increased charges for public utilities, including the street railway, but it was defeated by a considerable majority.

It is said that the increased wage schedule for the Sandwich, Windsor & Amherstburg Ry., which has been made effective, following the recent arbitration, makes that company's men the highest paid electric railway employees in Ontario.

The Grand River Ry. has, owing to the demands upon the Hydro Electric Power Commission of Ontario for power for munition plants in Galt, Ont., re-started its steam generating plant, for the operation of its lines. 211.)

The British Columbia Electric Ry.'s franchise in Vancouver, expires in Feb., 1919, and unless the city council gives notice of its intention to take over the lines not later than Aug. 11, it will become automatically renewed for a further five years.

Winnipeg Electric Ry. employees struck on May 22, in sympathy with a large number of other union men who went on a sympathetic strike to back up civic employees. The company made no effort to operate the cars. A press dispatch of May 25 said the men had resumed work.

Ottawa Electric Ry. employees decided May 16, to apply for an increase of wages, to start from July 1, when the schedule now in force expires. The present schedule is as follows per hour:—1st year 26c, 2nd year 27c, 3rd year and after 30c, with 4c an hour extra for Sundays and legal holidays.

At a meeting of the St. Thomas, Ont., City Council, April 30, when the question of power conservation was under consideration, a suggestion was made that in the event of any further curtailment being necessary, the operation of the electric railway, which is owned by the city, be suspended.

The Calgary Municipal Ry. has made a combination freight and passenger car,

out of a car which was damaged by fire some time ago and is running it three trips a day between the city car barns and Bowness, Sarcee and Ogden, respectively. The minimum charge for parcels is 10c, with an additional charge of 10c to 25c per 100 lb.

The Winnipeg Electric Ry. put four motor busses in operation on May 1 from Westminster Ave. and Sherbrooke St. to Portage Ave. and return, and a few days later four trailer cars were put in service on extra cars during rush hour traffic. These are the first steps taken to relieve the congestion of traffic under the terms of the new agreement.

The Regina Municipal Ry. has placed the following notice in its car vestibules: "Please deposit your own fare. When you give the conductor a larger coin than 5c, be sure that he gives you the exact change and all of the change. Then drop the exact fare in the box yourself. Don't hand it to the conductor to put in the box. Do it yourself. Please count the change."

Representatives of the five border municipalities met at Windsor, Ont., May 7, and passed a resolution requesting the Hydro Electric Power Commission of Ontario to make a survey of the Sandwich, Windsor & Amherstburg Ry., with a view to municipalities taking over the lines on the expiration of the franchise in 1922. It was stated that the commission had already collected considerable data, and that it was expected to have a report ready in June.

### Electric Railway Finance, Meetings, Etc.

Calgary Municipal Ry.—Net revenue for three months ended Mar. 31, \$10,659.55, against a deficit of \$14,974.55 for the corresponding three months of 1917. The above net revenue will be reduced by some \$6,000, owing to the increased wage schedule adopted recently, which has been made retroactive, to Jan. 1.

#### Regina Municipal Railway.—

Receipts for April .....	\$18,020.70
Receipts for April, 1917 .....	18,072.45
Passengers carried, April, 1918 .....	379,641
Passengers carried, April, 1917 .....	425,177

Toronto Civic Ry.—Passenger receipts for April, \$26,085; passengers carried, 1,541,937, against \$21,791 passenger receipts, and 1,284,185 passengers carried in April, 1917.

Winnipeg Electric Ry.—On May 1, the company paid the City Treasurer \$105,000, the percentage due for 1917. It was understood that this would be done immediately on the signing of the agreement for the elimination of jitney competition.

### Mainly About Electric Railway People.

F. H. Williams has been appointed in charge of the Winnipeg Electric Ry. Publicity Department.

S. Wilkins, heretofore Engineer, Winnipeg Electric Ry., has been appointed Maintenance Engineer.

H. C. Young, heretofore Superintendent of Bridges and Buildings, International Ry., Buffalo, N.Y., has been appointed Purchasing Agent, succeeding J. C. Sheldon, deceased.

C. Bibby has been appointed Assistant

Superintendent and Secretary, Sudbury-Copper Cliff Suburban Electric Ry., succeeding M. J. Powell, who had the title of Secretary.

W. E. Massie, heretofore Master Mechanic, Sudbury-Copper Cliff Suburban Electric Ry., has been appointed General Superintendent, succeeding L. O'Connor, who had the title of General Manager and Treasurer.

Hugh Mackay, Montreal, and H. H. Pitts, Ottawa, have been elected directors, Toronto Ry. Co., thus increasing the board by two, in accordance with the resolution passed at the recent special meeting of shareholders.

C. Loop, formerly Road Master, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont., who left that company's service in Dec., 1917, to take charge of track construction on the Essex Terminal Ry., has returned to his former position.

W. R. Robertson, Superintendent, Niagara, St. Catharines & Toronto Ry., has been appointed registrar, for the County of Lincoln, Ont., for the Dominion registration of man and woman power in June. He is secretary of the soldiers aid local branch.

F. L. Butler, heretofore Transportation Engineer, Winnipeg Electric Ry., has been appointed General Superintendent, succeeding Wilson Phillips. Prior to going to Winnipeg, he was General Manager of the Chicago & West Towns Ry. and the Suburban Rd., Chicago, Ill.

T. H. McCauley, Superintendent, Calgary Municipal Ry., has been given an increase of salary to \$4,000. At January, 1913, his salary was increased to \$4,200, but was reduced 20% Jan. 1, 1915, on account of the war. The city council's committee recommended recently an increase to \$3,500, but upon consideration, the council made it \$4,000.

Jno. Murphy, M.Can.Soc.C.E., Electrical Engineer, Railways Department, and Board of Railway Commissioners, Ottawa, has also been appointed by the Fuel Controller, as agent, to promote the substitution of hydro electric power for steam power, for the purpose of conserving coal. Mr. Murphy completed recently a very strenuous winter's campaign in connection with the Niagara power shortage.

George A. Mills, Electrical Engineer, Winnipeg Electric Ry., now has charge of the Electrical Department, the position of Power Superintendent, heretofore held by R. H. Long, having been abolished. Before going to Winnipeg, he was for six years Electrical Engineer for the Waterloo, Cedar Falls & Northern Ry. in Iowa, and in that capacity, installed a system dealing with electrolysis; and prior to that service, he was instructor in electrical engineering at Pennsylvania University. He is a member of the American Institute of Electrical Engineers.

Montreal & Southern Counties Ry.—The Administrative Commission and the Tramways Commission of Montreal, on May 16, granted the company a 10 years' extension of its contract with the city from June 18, when the present contract expires. W. B. Powell, General Manager, laid before the commissions, plans of the station which the company proposes to erect after the war, to face Youville St., and asked permission to lay a curved connection between the company's lines on Youville St. and the Montreal Tramway Co.'s lines on McGill St., and some other connecting lines. The line to McGill St. was approved, but the commissions refused the others.



## The Grand River Railway.

The Grand River Ry. is the title under which the Galt, Preston & Hespeler St. Ry. is being operated, the railway being an electric subsidiary of the C.P.R. The new name has only been assumed recently, although authority to use it was granted by the Dominion Parliament in 1914.

The history of the companies involved in the amalgamation may be briefly summarized as follows:—The Galt & Preston St. Ry. was incorporated under the Ontario law by letters patent on Nov. 20, 1890, to build an electric railway between Galt and Preston. The title was changed to the Galt, Preston & Hespeler St. Ry. by subsequent letters patent, April 10, 1895, when the extension to Hespeler was built, and the line was subsequently operated as the Galt, Preston & Hespeler St. Ry. The Preston & Berlin Ry. is a later Ontario incorporation.

The Berlin, Waterloo, Wellesley & Lake Huron Ry. was incorporated by the Dominion Parliament in 1903, to build a railway from Berlin to Waterloo, Wellesley, Glen Allen, Listowel and Goderich, Ont. In the following year parliament gave the company power to build an additional line from Wellesley to Stratford, St. Marys, Clinton and Bayfield on Lake Huron, and authorized it to enter into agreements under the provisions of the Railway Act, with the Galt, Preston & Hespeler St. Ry., and with the Preston & Berlin Ry. At a later period the Guelph & Goderich Ry., incorporated by the Dominion Parliament to build not only a line from Guelph to Goderich, but also branch lines in somewhat the same territory, became active, and there were many surveys made by one or both companies, under C.P.R. auspices, for a line from the G. & G. Ry., through Listowel and Stratford to St. Marys, to make a connection with another local C.P.R. subsidiary, the St. Marys & Western Ry. Beyond the building of the line from Guelph to Goderich, nothing was done until 1914, when the Dominion Parliament authorized the B.W.W. & L.H. Ry. to change its title to that of the Grand River Ry. Whatever agreements were made between the B.W.W. & L.H. Ry., the G.P. & H. Ry. and the P. & B. Ry., under the act of 1904, these two lines continued to be operated under the same management, and to retain for public purposes their own independence. A change became apparent upon the publication of the Dominion statistics of electric railways for the year ended June 30, 1915, in May, 1916, when the G.P. & H. Ry. and the P. & B. Ry. disappeared from the reports and their mileage of 17.81 was given as the Berlin, Waterloo, Wellesley & Lake Huron Ry. The old titles still continued to be used for operating purposes, and it is only quite recently that the title Grand River Ry. has been made use of.

In connection with the transfer of the Galt, Preston & Hespeler St. Ry. Co.'s property to the Grand River Ry. Co., several changes have been made in the officials, who are now as follows: President, Sir George Bury, Vice President, C.P.R.; Vice President, M. M. Todd, heretofore President, G.P. & H. St. Ry.; Secretary, H. C. Oswald, Assistant Secretary, C.P.R.; Treasurer, W. H. Lutz, heretofore Secretary-Treasurer, G.P. & H. St. Ry.; General Accountant, A. McL. Campbell, heretofore of C.P.R. Audit Department, Montreal. The following officials have been given the same positions in the Grand River Ry. service as they had heretofore with the G.P. & H. St. Ry., viz.: M. W. Kirkwood, General Manager; C.

J. Whitney, General Freight and Passenger Agent; F. H. Midgley, Resident Engineer; F. Darnley, Purchasing Agent; J. Deans, Roadmaster.

## United States President Authorized to Take Over Electric Railways.

The United States Congress passed an act April 22, providing as follows:—

Sec. 1 of the emergency shipping fund provisions of the urgent deficiency appropriation act of June 15, 1917, is hereby amended by adding a new provision reading as follows:

"(f) To take possession of, lease or assume control of, any street railroad, interurban railroad, or part thereof wherever operated, and all cars, appurtenances, and franchises or parts thereof commonly used in connection with the operation thereof necessary for the transfer and transportation of employees of shipyards or plants engaged or that may hereafter be engaged in the construction of ships or equipment thereof for the United States."

Sec. 2. That paragraph (b) of sec. 1 of said act is hereby amended by adding, after the word "material," in the third line of said paragraph, the following words, "or take possession, lease or assume control of, any street railroad, interurban railroad, or part thereof, cars and other equipment necessary to operation."

Sec. 3. That upon taking possession of such property, or leasing or assuming control thereof, just compensation shall be made therefor, to be determined by the President, and if the amount thereof so determined by the President is unsatisfactory to the person entitled to receive the same, such person shall be paid 75% of the amount so determined by the President and shall be entitled to sue the United States of America to recover such further sums as added to 75% will make up such amount as will be just compensation therefor, in the manner provided for by section 24, paragraph 20, section 145 of the Judicial Code.

The President may exercise the power and authority hereby vested in him through the several departments of the government, and through such agency or agencies as he shall determine from time to time.

## Calgary Municipal Railway Wages.

The Calgary, Alta., City Council has approved of the following new schedule of wages retroactive to June 1, 1918, viz.:

Conductors and motormen—1st year, 40c; 3rd 6 months, 41c; 4th 6 months, 42c; 5th 6 months, 43c.

Motor-conductors—1st year, 45c; 3rd 6 months, 46c; 4th 6 months, 47c; 5th 6 months, 48c.

From July 1, 1918, the following rates will be in force:

Conductors and motormen—6th 6 months, 44c; 7th 6 months and after, 45c.

Motor-conductors—6th 6 months, 49c; 7th 6 months and after, 50c.

The entire system has been operated with one-man cars since Mar. 6, 1917, a motor car seating 78 passengers, and a trailer car seating 84 passengers being operated by two men, or one man on each car. Conductors on trailer cars are classed as conductors. Forty-three regular cars, and from 25 to 35 extra rush hour cars, or trippers, are operated.

Following are the wages per hour of shop and line men:

Shop foreman and general repairs .....55c

Leading hand blacksmith and general repairs..52c  
Leading hand carpenter and general repairs..52c  
Leading armature winder and general repairs..52c  
Leading motor and controller trouble .....47c  
Leading foreman, night repairs.....45c  
Leading brakes and truck repairs.....47c  
2nd blacksmith and general repairs.....45c  
Carpenter, 1st class .....48c to 52c  
Babbiter, fitter and air brake .....50c  
Cash box repairer and locksmith .....48c  
Repairing sanders, fenders and fittings.....48c  
General car repairs, 1st year 38c, 2nd year 42c, 3rd year and after .....46c  
Foreman painter .....\$118 a month  
Brush hands .....45c to 47c  
Cleaners, washers and assistant car repairs: Head car cleaner 42c, 1st year service 37c, 2nd year service 38c.

Leading hands are allowed 3c an hour extra when so acting.

## Increased Electric Railway Fares in the United States.

The Missouri Public Service Commission has ordered a 6c car fare in St. Louis, to go into effect June 1. The new schedule will be effective for a year, at the end of which time the commission reserves the right to reduce it should it so desire. Increased cost of operation, including the necessity of paying adequate wages, is given as the cause of the advance. With the addition of St. Louis, the list of 6c far cities is a long one and is constantly growing. Six cent fares will be in force in the following cities on June 1:—St. Louis, Pittsburg, Portland (Oregon), New Haven, Fall River, Lowell, Bridgeport, Hartford, Reading, New Bedford, Lynn, Lawrence, Waterbury, Wilkes Barre, Erie, Brockton, Haverhill, New Britain, Salem, Lexington (Ky.), Meriden, Nashua, Norwalk, Middletown (Conn.), Pottsville, Rutland, Dover, Meadville.

In addition to these cities in which a 6c unit fare is either in effect, or authorized, several cities have had fares increased by the introduction of the zone system, which establishes a central zone within which a 5c fare is charged, while an extra fare is charged for rides that extend beyond this zone. Cities in which fares have been increased in this manner are:—Providence, Springfield, Pawtucket, Woonsocket, Norwich, New London.

That municipally owned roads face the same crisis in their affairs as do the privately owned systems, is shown by the case of the line owned by the City of Tacoma. This line is 3½ miles long and the city has increased its far from 5c to 10c.

Two recent incidents, show that the business community is coming to recognize the necessity of giving electric railways sufficient revenue to enable them to supply the service, which the needs of business, increased by the nation's war programme, demands. The first is a petition directed to the mayor of Rochester, N.Y., and signed by practically every important manufacturer in the city, asking that the New York Railways be permitted to charge a 6c fare. The second is the action of the Merchants' Association of New York, the most representative business body of the city, by which it directly favors the increase of fares on the subway and elevated lines of the city from 5c to 6c.

Port Arthur Civic Railway Wages.—A press report says that the Port Arthur, Ont., Public Utilities Commission has advanced conductors and motormen's wages to the following figures: First 6 months, 30c a year; next 18 months, 33c; after two years, 36c.

C. A. Lee, a member of the British Columbia Electric Ry. staff at Vancouver, B.C., has joined the U.S. Navy Civil Engineering Corps, as a lieutenant.



## Fare Increases on Electric Railways in New York State.

The New York State Court of Appeals has decided that public service commissions have not the power to increase electric railway fares when franchise agreements or municipal charter provisions limit the rate to be charged. This decision upholds the City of Rochester in its fight against 6c fares.

In this connection, J. K. Choate, chairman of the committee representing the electric railways of New York State, which have been endeavoring to secure increases in rates for some 33 railways, has issued the following statement:—

"The decision of the Court of Appeals denying the right of the state's public service commissions to increase fares above those fixed in franchises or contracts between communities and their street railways, is a matter of as grave concern to the U.S. Government and to the communities themselves as it is to the electric railways. It means, unless the condition thus produced is immediately corrected, that the transportation utilities of the state cannot render that assistance to the nation's war programme which recent pronouncements of President Wilson, Secretary McAdoo and Comptroller Williams declares to be urgent and necessary. It means that these utilities will no longer be able to furnish to the public the kind and extent of service, needed to further the growth and prosperity of the communities in which they operate nor to properly provide for the convenience and comfort of their patrons. It will mean decided interference with the plans of the National Government, under which the War Finance Corporation was to provide means to enable railways to secure the absolutely necessary new capital for refunding maturing obligations, since the co-operation of the states and communities in securing to the borrowing companies a rate of return which would give stability to the securities pledged with the War Finance Corporation was a fundamental of the plan.

"The problem of providing sufficient revenue to enable electric railways to furnish the service necessary is not a concern of the railways alone. It is a very grave concern of the public authorities and of the public. The Governor of Massachusetts has thought it of sufficient moment to direct a special message to the legislature recommending that the law be amended so as to provide emergency relief. The New Jersey Public Utilities Commission has announced that it will disregard precedents in the consideration of rate cases and will view applications only in the light of the necessity of providing sufficient revenue to enable the utilities to respond to the demands made upon them. The New Hampshire Commission has announced a similar policy, as have the regulatory authorities in other states. Within the last few months, increased fares have been granted to more than 100 companies in 25 states, outside of New York.

"In New York State it was the belief of at least one of the commissions and of the companies represented by this committee that the public service commissions were empowered to grant relief. The Court of Appeals has ruled otherwise. The situation, as far as it affects the public and the companies, is not changed. The need of relief is as imminent and pressing as ever. The Court of Appeals decision simply means that the theory of state regulation as applied in this state has broken down in an emergency and

that some other method must be adopted to meet conditions which threaten to hamper the usefulness of transportation utilities at a time when their increased efficiency is vital to the nation and to the public. It is inconceivable that New York State shall not quickly and effectively meet the issue. It needs no argument to prove that at a time when the cost of material, of labor and of money has increased and is increasing by leaps and bounds, provision must be made whereby utilities as well as other industries may advance the price of their product to meet the contingency."

## One-Man Car Results on Calgary Municipal Railway.

T. H. McCauley, Superintendent, has favored us with the following information:—In 1917 all cars on the Calgary Municipal Ry. were converted over to one-man operation, requiring about half the original staff and paying operators 5c an hour more wages. The cars operated were increased to 42 regular, and 32 extra rush hour cars, or a total of 74 cars operated. The cost of converting the cars was paid out of revenue and the following results are from the auditors report from the calendar year 1917:

Miles operated .....	2,739,923
Passengers carried .....	13,606,663
Revenue (with interest) .....	\$582,553.97
Operating expenses, including fixed charges .....	561,061.45
Surplus profit .....	21,492.52

The financial position at Dec. 31, 1917, being:

All debenture interest paid.	
In sinking fund account .....	\$302,236.51
In depreciation account .....	374,897.15
In contingent reserve account .....	94,711.36
Total .....	\$797,168.85

## Lethbridge Municipal Railway Operating Results.

Commissioner Freeman in his report on the public utilities of Lethbridge, Alta., for 1917, refers to the Lethbridge Municipal Ry. as follows:—"I am pleased to say that the street railway department has done slightly better than had been anticipated, in spite of the ever increasing cost of labor and materials. The cost of operation has been kept as low as possible and the improved patronage has increased the earnings. Earnings for the year were \$52,203, compared with \$49,639, an increase of \$2,564, while operating costs increased from \$41,535 to \$48,821. The profit of the system over operating expenses was \$8,382, an increase of \$277. It had been estimated that the deficit caused by the fixed charges would amount to \$30,178, while in reality the railway came through with a deficit of only \$28,878."

Following are the figures for the calendar year 1917, subject to auditor's report:

Earnings .....	\$52,203.88
Operating expenses .....	43,821.46
Operating profit .....	\$ 8,382.42
Fire insurance, taxes, sinking fund, debenture interest and bank commission on debenture payments .....	\$37,260.44
Deficit .....	\$28,878.02

The Toronto, Hamilton & Buffalo Ry. took a party of business men from Hamilton, Brantford and Dunnville on a trip to Port Maitland, Ont., May 18, to show the terminal facilities there, and the working of the car ferry steamship, Maitland.

## Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has reopened its offices at Beaumaris, Cardinal Canal and Tottenham, Ont., and has closed its offices at Chapeau, Kiskisink and Ste. Anne de la Perade, Que., and Beamsville Camp, and Dunnville, Ont.

A press report from Dawson, Yukon, states that the Dominion Government contemplates the temporary abandonment of the commercial telegraph line connecting Dawson with Ashcroft, B.C., and that no change could be made in the estimates, then before Parliament. The estimates for telegraph lines given in this issue, include an item of \$250,000 for the Ashcroft-Dawson line.

## Among the Express Companies.

The Board of Railway Commissioners has extended the express delivery and collection limits at Walkerville, Ont.

D. W. McNabb, of the Bureau of Explosives, delivered an address, illustrated with lantern slides, at Regina, Sask., recently in the interests of the Express Traffic Association of Canada, on the handling and packing of dangerous packages for express companies.

Unification of the express companies is being considered by the U.S. Railroad Administration. It is stated that the merger plan of four principal express companies operating in the eastern district, will probably be approved shortly. It is suggested that the companies shall amalgamate under the name of the Federal Express Co., with a capital of \$50,000,000, four-fifths of which would represent property, the balance being working capital.

The U.S. Director General of Railroads is reported from Washington, D.C., to be conferring with express companies' representatives, on the terms of a tentative contract under which all the express companies will be merged, with a capital of \$34,000,000, to act as government agent in the express business, but without direct government control. The railways would take a little more than 50% of the express receipts, or approximately the same proportion as at present, and it is considered that the balance would be sufficient to allow the company to pay about 6% on the capital stock. It is suggested that the company be named the Federal Express Co.

Canadian Westinghouse Co.—Alfred R. Miller, Treasurer, died at Hamilton, Ont., April 28, aged 43. He was born in England and removed to Canada with his parents at an early age. His whole business life was virtually spent with the Westinghouse interests in Canada, he having entered the employment about 20 years ago, and having progressed with the company until at the time of his death he occupied the responsible position of Treasurer.

Railway Lands Patented.—Letters patent were issued during April, for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acre.
Alberta & Great Waterways Ry.....	65.77
Canadian Northern Ry. ....	1,959.32
Central Canada Ry. ....	30.91
Edmonton, Dunvegan & British Columbia Ry. ....	157.29
Grand Trunk Pacific Branch Lines Co.....	43.45
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. ....	322.00
Total .....	2,578.74



# Marine Department

## Steamship Building in Canada for British Government.

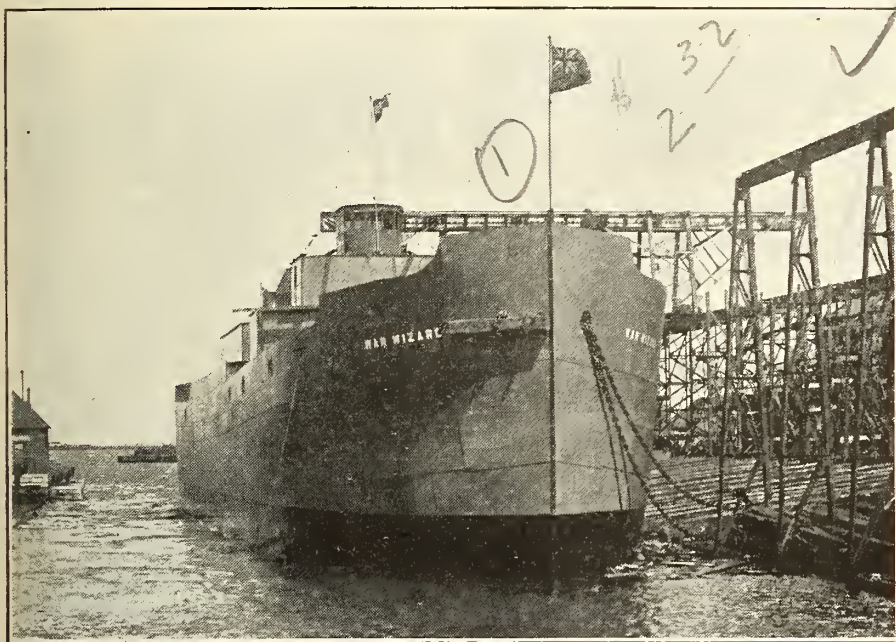
The Collingwood Shipbuilding Co., Collingwood, Ont., launched on May 8, the ocean going steamship War Wizard, the first of two vessels ordered by the Imperial Munitions Board. The War Wizard is of the poop, bridge and forecastle type,

The engine is of the triple expansion type, the cylinders being 18, 30 and 50 in. x 36 stroke, taking steam from 2 Scotch boilers, 14 ft. diameter by 10 3/4 ft. long, working at 180 lb. pressure, with forced draught. The auxiliary machinery and

ond of the 9 steel cargo steamships ordered from the company by the Imperial Munitions Board, and the third vessel to be built by the company, the first, the s.s. Alaska, having been originally intended for Norwegian registry, and being taken over by the British Government while on the ways.

**J. Coughlan & Sons, Vancouver, B.C.—**  
A serious fire occurred at this yard, May 15, the damage being estimated at \$1,500,000. The company has an order from the Imperial Munitions Board for 9 steel steamships, one of which, the s.s. War Camp, has been launched, and with the s.s. Alaska, built for Norwegian register, but taken over by the British Government, was at the fitting out wharf. The engines of the Alaska, which were in the boiler shop, are reported destroyed. Two vessels, the War Charger and War Chariot, were on the ways, the first being considerably damaged by heat, and the second becoming a total loss when the supporting piles were burned away, allowing the hull to settle down in the mud, and break her back. Two keels were laid on the remaining ways, and these are intact. The work of clearing the yards was taken in hand at once, so that as little delay as possible will take place in the execution of the contracts under way.

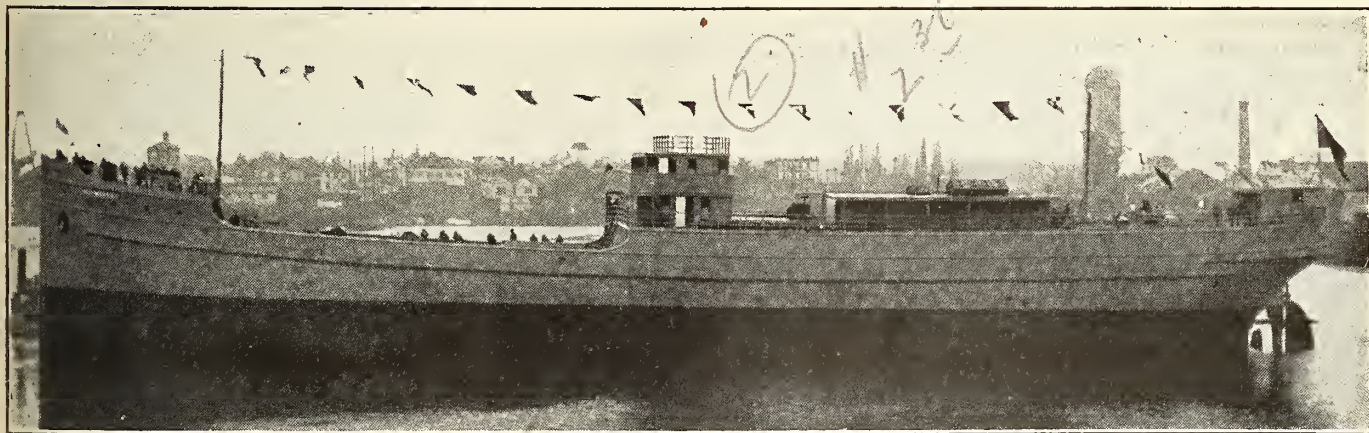
**Foundation Co., Victoria, B.C.—**Reference to the panoramic view of four vessels under construction on the following two pages shows the hull of the s.s. War Massett, which was launched Apr. 11, as mentioned in our last issue, and three other hulls in various stages. Hulls 3 and 4 have all the deck work and house work completed and the bulkheads are being finished up. Work on hull 5 is progressing favorably, the ceiling being completed, and the planking for about three strakes above the main deck. All main deck beams and stanchions are in place, and preparations are being made for laying the main deck. All joiner



Cargo steamship, War Wizard, just after launching at Collingwood, Ont., May 8, 1918.

with engines amidships. Her dimensions are: 261 ft. overall, 251 ft. between perpendiculars, 43 1/2 ft. beam, 20 ft. depth moulded, to carry approximately 2,900 tons deadweight. The vessel and her equipment have been constructed to the highest classification of the British Corporation Registry. She has 2 large holds and 4 large hatchways. The cargo gear

equipment is of the latest and most complete kind for ocean service. The vessel was launched with the machinery and boilers on board, and will be ready for sea in a very short time. She will be operated under the management of E. C. Downing of Cardiff, Wales. A second vessel, War Witch, is on the stocks for the British Government.



Launching of the s.s. War Massett, for the British Government at Victoria, B.C., April 11, 1918.

is of the most modern type and arranged for quick handling. Accommodation for the officers and engineers is provided for in a large steel deckhouse on the bridge deck. The petty officers' accommodation is under the forecastle, and the crew has commodious accommodation aft. Like all other vessels of this type, provision is made for mounting a gun on the poop.

**J. Coughlan & Sons, Vancouver, B.C.**  
It was announced early in May by J. J. Coughlin, that the launching of the s.s. War Charger, which was scheduled for May 9, had to be postponed, owing to the non-arrival of the turbine engines. It was, however, expected that the launching would take place before the end of the month. The War Charger is the sec-

work, decks and all deck machinery and fittings are completed while the hulls are on the ways, so that when they are launched, they are ready for receiving the propelling machinery. At the time we were advised, no date could be set for launching hulls 3 and 4, as delivery of the rudders, propellers, etc., had not then been made, this resting with the Imperial



Munitions Board. The names chosen for the vessels are: Hull 3, War Babine; hull 4, War Camchin; hull 5, War Nanoose. When these are completed, the company's contract with the Imperial Munitions Board will be finished.

Wm. Lyall Shipbuilding Co., Vancouver, B.C.—The third wooden hull to be built by this company under order from the Imperial Munitions Board, was launched Apr. 27, and named War Cayuse. The fourth of the order for six, was expected to be ready for launching during May.

New Westminster Construction & Engineering Co., New Westminster, B.C.—The launching of the second of the four wooden hulls being built by this company under orders from the Imperial Munitions Board, was expected to take place during May. It is announced that it will be named War Kitimat. It is stated that the machinery will be installed by the company in its own yards, instead of tak-

tions, only six vessels can be handled at the Ogden Point assembly plant at the one time. It is reported that hulls will be placed with the British Columbia Marine Railway, Vancouver; Wallace Shipyards, Ltd., North Vancouver; Victoria Machinery Depot, Victoria, and Yarrows, Ltd., Esquimalt.

**Launchings of Steamships.**—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to May 14, giving in each case the date of the launching, the name of the steamship, the name of the builder and the deadweight tonnage:—

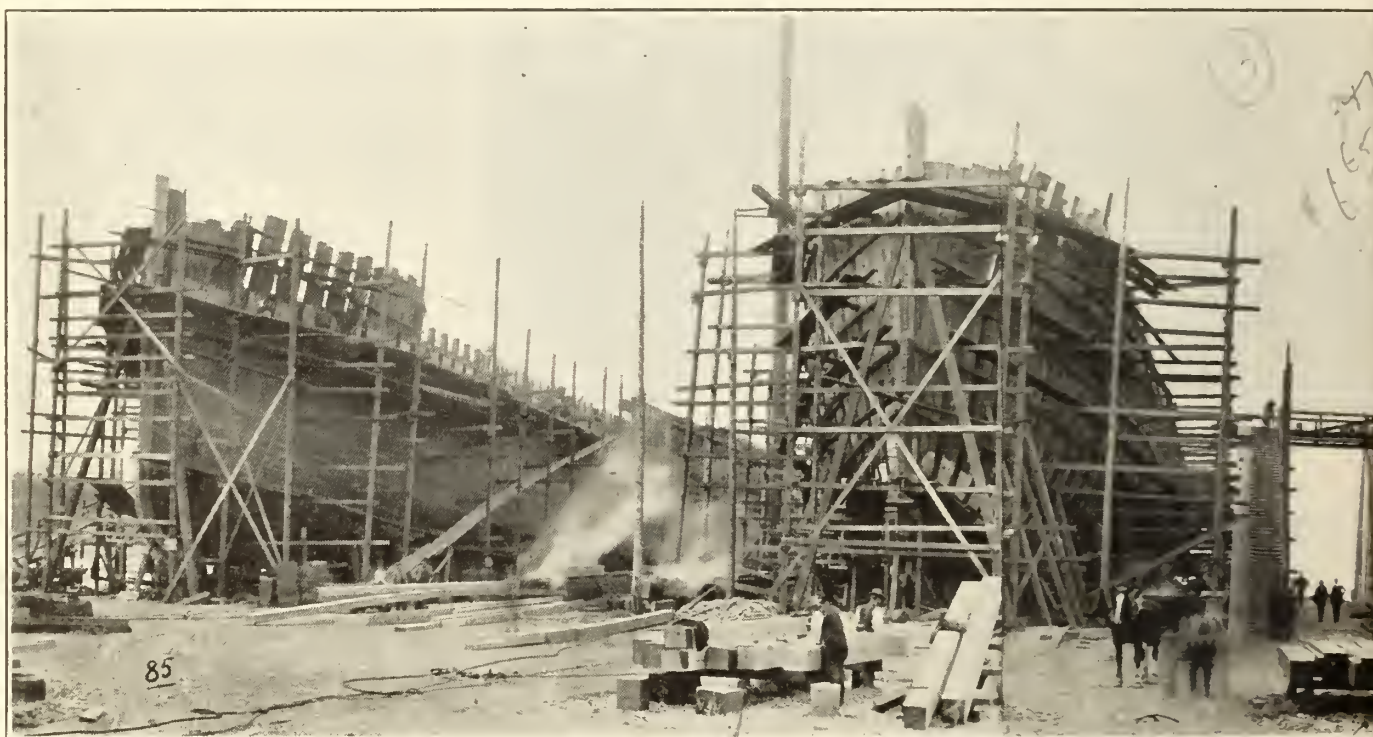
Steel Steamships.		Tonnage.
May 18, 1917—	War Dog, Wallace Shipyards, North Vancouver, B.C.	4,500
July 9, 1917—	War Wasp, Nova Scotia Steel & Coal Co., New Glasgow, N.S.	1,800
Aug. 19, 1917—	War Fish, Port Arthur Shipbuilding Co., Port Arthur, Ont.	4,300

Apr. 13, 1918—	War Tyee, Pacific Construction Co., Coquitlam, B.C.	3,080
Apr. 25, 1918—	War Haida, Cameron-Genoa Mills, Victoria, B.C.	3,080
Apr. 27, 1918—	War Cayuse, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
May 11, 1918—	War Mohawk, Quinlan & Robertson, Ltd., Quebec, Que.	3,080
May 11, 1918—	War Sioux, Great Lakes Dredging Co., Port Arthur, Ont.	3,080

Total 13 wooden steamships ..... 40,040

Total dead weight tonnage of 8 steel and 13 wooden steamships launched, 73,700.

**Strike in British Columbia.**—Vancouver press dispatch May 23:—"In obedience to the order of the Metal Trades' Council, issued last night, the shipyard workers, said by union officials to number nearly 10,000, quit work in British Columbia shipyards tonight. The purpose of the strike, the union officials announced, is to compel the Imperial Munitions Board to grant a scale of wages equal to that in



Four hulls of wooden cargo steamships for the British Government, in the Foundation Co.'s yard at Victoria, B.C., Apr. 11, 1918. See also opposite page.

ing the hull to the Ogden Point assembly plant. The machinery was received at the Poplar Island plant early in May.

Quinlan & Robertson, Ltd., Quebec, Que., is reported to be fitting out machine shops, etc., at the Louise docks, for the installation of machinery in the wooden hulls which it is building for the British Government under order from the Imperial Munitions Board. Four standard wooden steamships are under order, the first one being launched recently.

Wallace Shipyards, Ltd., North Vancouver, B.C.—The keel for a steel cargo steamship, ordered by the Imperial Munitions Board, was laid at this plant towards the end of May. It is stated that the company has plans for arranging an additional berth near Lonsdale Ave.

**Machinery Installation.**—It is reported from Victoria, B.C., that the Imperial Munitions Board has decided, owing to the rapidity with which the wooden hulls are now being launched, and the necessity for speeding up the actual completion of the vessels for service, to allot several of them to private firms for the installation of the machinery. Under present condi-

Nov. 3, 1918—	War Dance, Port Arthur Shipbuilding Co., Port Arthur, Ont.	3,400
Mar. 16, 1918—	War Camp, J. Coughlan & Sons, Vancouver, B.C.	8,800
Mar. 23, 1918—	War Power, Wallace Shipyards, North Vancouver, B.C.	4,600
Apr. 3, 1918—	War Isis, Port Arthur Shipbuilding Co., Port Arthur, Ont.	3,400
May 8, 1918—	War Wizard, Collingwood Shipbuilding Co., Collingwood, Ont.	2,900
Total steel steamships .....		33,700

Wooden Steamships.		
Dec. 28, 1917—	War Songhee, Foundation Co., Victoria, B.C.	3,080
Jan. 4, 1918—	War Nootka, Western Canada Shipyards, Vancouver, B.C.	3,080
Jan. 24, 1918—	War Yukon, Cameron-Genoa Mills, Victoria, B.C.	3,080
Feb. 16, 1918—	War Puget, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
Mar. 6, 1918—	War Selkirk, Western Canada Shipyards, Vancouver, B.C.	3,080
Apr. 10, 1918—	War Caribou, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
Apr. 11, 1918—	War Comox, New Westminster Construction & Engineering Co., New Westminster, B.C.	3,080
Apr. 11, 1918—	War Massett, Foundation Co., Victoria, B.C.	3,080

effect in the United States and a 44 hour week. A payroll estimated at from \$40,000 to \$60,000 a day is cut off. The metal trade employers have taken steps to secure a definite and lasting understanding with labor in the shipbuilding industry, and have decided to offer the men a scale, which in some instances is higher than that given them by the recent Murphy award. The employers complain that the frequent demands of the men have produced a feeling of insecurity in the in-

The s.s. War Yukon, built by Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C., was announced, at the end of April, to be completely equipped and ready for sea. This is the first of the wooden steamships ordered by the Imperial Munitions Board, to be completed, though she was not the first to be launched. So far as launchings are concerned, she was the third, having been preceded by the War Songhee, Foundation Co., Dec. 19, 1917, and the War Nootka, Western Canada Shipyards, Ltd., Jan. 4. The War Yukon was launched Jan. 24, and was immediately taken to the Ogden Point assembly plant for the installation of machinery.



dustry which cannot continue. They offer to pay ordinary labor \$3.50, the basic trades \$6, and caulkers \$7 a day, with all helpers paid \$4 a day.

"The Coughlan shipyards at Vancouver are the only ones in operation in the Province, this by virtue of an agreement which does not expire until August. The shipyards affected are: British Columbia Construction Co., New Westminster; Cameron-Genoa Mills Shipbuilders, Foundation Co., Victoria Shipbuilding Co., Victoria; Wm. Lyall Shipbuilding Co., Wallace Shipyards, Limited, North Vancouver; Western Canada Shipyards, Vancouver; Pacific Construction Co., Port Coquitlam, and Yarrows, Limited, at Esquimalt."

**Use of Vessels.**—As the steamships being built in Canada for the British Government, under orders from the Imperial Munitions Board, progress in construction, the British Ministry of Shipping assigns them to different shipping com-

## General Shipbuilding Notes Throughout Canada.

**Canada Steamship Lines, Ltd.**—The Quebec Legislature has confirmed a by-law of the municipality of Ste. Marie Madeleine du Cap de la Madeleine, Champlain County, granting exemption from municipal taxes for 20 years on property to be occupied by a shipyard to be established by the company.

**J. Coughlan & Sons, Ltd., Vancouver, B.C.**, have deposited plans with the Public Works Department at Ottawa, for additional wharves, buildings and finishing berths, to be built in False Creek, in front of Columbia St., Vancouver.

**The Dominion Shipbuilding Co., Toronto**, whose plant was damaged by fire recently, expects to resume the construction of ocean going steamships early in July.

**Shipbuilding Employees and Military Service.**—A Quebec press dispatch of May

ada West Coast Navigation Co. It is not stated whether they will be equipped with auxiliary machinery, but that probably they will have topsails.

**Newcastle, N.B.**—The small steamboat The Max was launched here, May 14. It is announced that she will be operated on the Newcastle-Redbank route, with S. Amos, Derby, N.B., as master.

**Standard Shipbuilding Co., Vancouver, B.C.**—With regard to the reports that this company had entered into contracts for the construction of 10 composite steamships for the British Government, as mentioned in our last issue, we have been advised that the company may make contracts with the Imperial Shipping Board of Great Britain for 10, or more, Donohoe type, reinforced steel keelson wood steamships, 3,500 tons deadweight



Four hulls of wooden cargo steamships for the British Government, in the Foundation Co.'s yard at Victoria, B.C., Apr. 11, 1918. See also opposite page.

panies, which are known as managing owners. They send their representatives to the points where the vessels are being constructed, and these representatives remain at those points until the vessels are completed and ready for sea. The cargoes to be carried will doubtless be indicated by the Ministry in the usual way, through the Director for Overseas Transport. For the vessels which are being built in British Columbia, it is likely that lumber will be an important part of the early cargoes at least.

**The Consolidated Whaling Co., Ltd.**, has been incorporated under the Dominion Companies Act, with \$2,500,000 authorized capital and office at Toronto, to carry on a general fishing and whaling business, and in connection therewith to own and operate vessels of all kinds, wharves, docks, piers, and other general transportation facilities. The incorporators are: D. B. Hanna, A. J. Mitchell, R. H. M. Temple, G. N. Limpricht, W. Bowler, R. G. O. Thomson and G. R. Donovan, Toronto, the majority of whom are associated with the Canadian Northern Ry.

13 stated that the Central Appeal Judge, Mr. Justice Duff, of the Supreme Court, at Ottawa, had granted exemption from military service to all employees working on shipbuilding for the Davie Shipbuilding & Repairing Co. at Lauzon, Que., as it was established that should the draftees working at the yards be enlisted their leaving would have interfered with ship construction. The dispatch added that the Davie Co. had been told not to engage any more men of military age. Canadian Railway and Marine World is officially advised that the dispatch is an erroneous one, as no such decision as that mentioned has been given by the Central Appeal Judge.

**Louisburg, N.S.**—Nova Scotia Legislature has authorized the town of Louisburg to bonus a shipbuilding and dry dock company, and to exempt it from taxation.

**Wm. Lyall Shipbuilding Co., Vancouver, B.C.**—It is stated that the six vessels which this company was announced in our last issue to have decided to build on yard account, will be of the bald headed schooner type, similar to those built at Vancouver and Victoria last year for Can-

capacity, Lloyd's classification. We are also advised that a contract has been entered into with French interests for six vessels of this type for operation between English and French ports, to carry oil and merchandise.

**Thor Iron Works, Ltd., Toronto.**—The s.s. Trojan, which was launched at this yard, May 15, was ordered originally by the Great Lakes Transportation Co., Midland, Ont., and transferred, while on the ways, to J. O. Lindvig, of Christiania, Norway, and New York and San Francisco. She is a bulk freighter of the Frederickstad type, with dead weight capacity of 4,300 tons. Her dimensions are: length 261 ft. over all and 251 between perpendiculars; breadth moulded 43½ ft.; depth moulded 28 ft. 2 in. She is equipped with triple expansion engines, with cylinders 20, 33 and 54 in. diam. by 40 in. stroke, 1,500 h.p., supplied with steam by 2 Scotch boilers each 14 x 12 ft., built by John Inglis & Co., Toronto. All machinery was installed prior to launching. She will be completed about the middle of June, when she will be placed in trans-Atlantic service.



## Drydock Shipbuilding and Harbor Works at St. John, N.B.

Early in 1912, the Dominion Government entered into a contract with the Norton Griffiths Construction Co., for the carrying out of considerable harbor improvement works at Courtenay Bay, St. John, N.B., embracing the construction of a breakwater 4,570 ft. long, including 5 groynes each 150 ft. long; the dredging of a channel about 6,800 ft. long by 500 ft. wide, and 32 ft. depth below low water, from the main ship channel leading into the St. John River to the head of the breakwater; the dredging of a basin to 32 ft. below low water in Courtenay Bay; the construction of about 4,890 lin. ft. of quay walls; the filling in of an area of about 28 acres; and the construction of a dry dock and ship repairing plant. Apart from the dry dock construction, the works were estimated at the then schedule prices, to cost \$7,500,000, and the dry dock was to be built under the provisions of the Dry Dock Subsidies Act, at an estimated cost of \$4,500,000. The shipbuilding and repair plant was to be operated by the contractors.

Considerable work was done, including the practical completion of the breakwater, the excavation for the dry dock with a length of 1,000 ft., the reclamation of a large tract of land, and dredging work in the harbor and channel, and altogether about \$4,000,000 was spent. Towards the end of 1916, the contractors abandoned the contract, the labor problem being mentioned as one of the contributing causes, while, undoubtedly, war conditions generally had some effect. J. Norton Griffiths, M.P., of England, who was the principal of the company, decided, about the same time, to give up all work of a private nature, to devote himself entirely to war service, which he is still continuing, having been made a K.C.B. in connection with special war work in Rumania. Since the abandonment of the contract, nothing has been done to carry out the original plans, the government's attention being chiefly concentrated on war matters.

Canadian Railway and Marine World for May stated that a proposition was reported to have been made to the New Brunswick Government by J. B. Craven, New York, and T. A. Duff, Toronto, for the establishment of a shipbuilding plant at Courtenay Bay, St. John, if the provincial government would give adequate support.

On May 10 a press dispatch was sent out from Ottawa, which said in part: "The government, on the Minister of Public Works' recommendation, has authorized the transfer to the St. John Drydock & Shipbuilding Co. of the contract originally given to the Norton Griffiths Co. for the St. John harbor works. The new company, composed of prominent Canadian shipowners and builders, takes over the contract on the same terms as those granted to the Norton Griffiths Co. A drydock of the first class, capable of handling the largest ocean-going vessels, will be commenced at once, and the necessary harbor works to provide for it and for the proposed big shipbuilding plant in connection therewith will be begun at once. The government will vote a subsidy for the drydock to be built by the company as soon as the plans and specifications are approved. The total expenditure of the contemplated works is estimated at \$7,000,000. The new company has already arranged for contracts

for two 10,000 ton steel steamers, the largest craft ever built in Canada. When the plant is completed it will employ 2,000 men.

"The original plans for the Courtney Bay development, involving a total expenditure of many millions more, will, of course, be curtailed until after the war. The present scheme involves only necessary governmental expenditures to provide for harbor necessities and the establishment of the shipbuilding industry on a big scale at St. John. The government is now considering proposals for nationalizing the entire harbor at St. John and placing it under a federal commission, thus providing for its development in a systematic manner, and on a scale adequate to the needs of the future."

Canadian Railway and Marine World is officially advised from Ottawa that while the press dispatch quoted above is correct in some respects, it is very much exaggerated in regard to others. While the government has decided to have the work, as originally outlined, carried out, at the time of writing, May 22, the arrangements had not been completed. The general scheme contemplates the construction of a dry dock of the first class, under the Dry Dock Subsidies Act, a large amount of work on which has already been done, as above stated, the establishment of a shipbuilding plant, and what small amount of harbor work remains to be done to complete the contract awarded to the Norton Griffiths Construction Co., all on the same terms and conditions. The expenditure under this scheme approximates \$2,000,000 which would be spread over a term of years. During the current year it is not the intention to do anything excepting what is necessary to make available the dry dock and shipbuilding enterprises, and it is expected that less than \$500,000 will be expended this year. The foregoing refers only to expenditures to be made by the Dominion Government.

An order in council has been passed authorizing the Minister of Public Works to enter into a contract with the St. John Drydock & Shipbuilding Co., but up to May 25 the contract had not been arranged.

We have gleaned the following information from different sources and believe it to be approximately correct. The persons particularly interested in the company are: Jas. Playfair and D. L. White of Midland, Ont.; Senator Richardson of Kingston, Ont.; J. B. Tudhope, M.P., Orillia, Ont.; T. A. Duff, Toronto; Robt. Hobson and W. E. Phin, Hamilton, Ont., and J. B. Craven, Larchmont, N.Y. Senator Richardson and James Playfair are President and Vice President, respectively, of the Great Lakes Transportation Co. The latter is also a director of the Midland Shipbuilding Co., of which D. L. White is President. J. B. Tudhope is M. P. for East Simcoe, T. A. Duff is legal advisor for the Great Lakes Transportation Co., Canadian Dredging Co., Midland Shipbuilding Co., Midland Engine Works Co. and other companies in which Mr. Playfair is interested. Robt. Hobson is President of the Steel Co. of Canada, W. E. Phin is a contractor. J. B. Craven is a contractor and electrical engineer. He was interested in the original contract held by the Norton Griffiths Construction Co., and on the abandonment of the contract, he applied at Montreal for an inter-

locutory injunction to prevent the transfer of certain of the company's property, and claimed that he was interested to the extent of one half of 49% of the total net profits on the contract, over and above 15% of the total prime cost of the construction works. He is now said to have secured any rights which the Norton Griffiths Construction Co. may have had remaining in the St. John contract.

The harbor work to be done will probably be carried out by the Great Lakes Dredging Co., in which Mr. Playfair and some of the other persons above mentioned are interested. The drydock is projected to be 1,150 ft. long, 125 ft. wide and 40 ft. deep over sills. The estimate of cost is mentioned as about \$5,500,000, including \$1,250,000 already expended. The Dominion Government will pay the usual annual subsidy on the total cost. The proposed expenditure on the shipbuilding plant is stated at \$2,000,000. As mentioned in a previous issue, the company has applied to the New Brunswick Government, and to the city of St. John, for aid in establishing the plant. It is said that the company has an offer from the Dominion Marine Department to build 2 steel cargo steamships of about 10,000 tons d.w. capacity each.

## United States Government Lake Service.

The Director General of U.S. Railroads has established a lake line service between Chicago, Milwaukee and Buffalo in order to relieve the car situation as much as possible. Cars that have been held up on western railways by the congestion on central railways have been released with the opening of lake navigation and the loads moved east by the way of lake and railway lines east of Buffalo, thereby releasing equipment to the western railways for use in their territory and relieving the railways in the central freight territory of the saving of power, fuel, and cars that can be devoted to other business.

Shippers of heavy staple commodities from the east, such as sugar, coffee, and manufactured articles, are taking advantage of this service, as it will be of a steady and regular movement. There has been assigned to this lake line service seven large modern, electric lighted steamships, and it is intended to work day and night shifts at the terminal points so that the ships can be turned rapidly and afford the greatest possible relief to the railroads.

The line is called the Lehigh Valley Transportation Co., and serves all eastern trunk lines over a common terminal at Buffalo. Two of the ships assigned were owned by the Lehigh Valley Rd.; the other five were chartered from the Great Lakes Transit Corporation. Additional ships will be added as the service requires. All-rail rates prevail in both directions, so that in case of congestion on the railways the freight can be immediately diverted to the lake and given continuous movement to destination; the rates include marine insurance, and the service should be of great assistance to the shipping public.

**Increased Freight Rates on B.C. Coasting Vessels.**—Steamship companies operating vessels in the British Columbia coasting trade announced a 10% increase in freight rates, effective May 1, in order to meet the increase in wages granted to employees. No advance in passenger rates had been announced at the time of writing.



## What the United States Government is Doing in Shipbuilding, Etc.

The following statement concerning the activities of the U.S. Shipping Board and the Emergency Fleet Corporation has been prepared from data furnished by officials of those organizations. It covers briefly the operations of these organizations since the beginning of the war:

At the outset of the war the nation, in addition to expanding the army to proportions adequate to wage the struggle was confronted with the problem of providing facilities to transport its expeditionary forces and the supplies necessary to subsist them in foreign fields. One step designed to effect this purpose had already been taken; two others followed shortly after the declaration of war. Through the shipping act, approved Sept. 7, 1916, Congress created a U.S. Shipping Board, to encourage and develop a naval auxiliary, a naval reserve, and merchant marine; empowered that board to form a corporation to purchase, construct, and operate merchant vessels, which it exercised through the incorporation of the Emergency Fleet Corporation; and authorized a \$50,000,000 fund for the operation of the corporation.

By joint resolution of the Senate and House of Representatives approved May 12, 1917, the President was authorized to take over the German vessels within the jurisdiction of the U.S., its territories, and insular possessions; and under the emergency shipping fund provision of the urgent deficiency appropriation act approved June 30, 1917, the President was authorized to requisition any vessel under construction or contracted for in shipyards within the U.S. By executive orders dated June 30 and July 3, 1917, the President ordered the Shipping Board to seize the German vessels in U.S. waters, and by another, of July 11, 1917, delegated to the board the power of requisition which Congress had vested in him. Under its power of seizure the Shipping Board has taken over 112 German and Austrian ships of 788,000 d.w. tonnage, all of which have been repaired and are now in operation.

To perform the tasks assigned to the Shipping Board and its operating company, the Emergency Fleet Corporation, large expenditures were necessary. Congress has met the demands by supplementing the original appropriation of \$50,000,000 with succeeding authorizations which on Mar. 1 aggregated \$2,034,000,000, to be expended for construction, requisitioning, and purchasing of ships, the construction of yards, and the erection of housing facilities. Of the sum authorized, \$1,135,000,000 had been appropriated on Mar. 1. The expenditures of the Emergency Fleet Corporation up to that date was \$353,247,955.37, distributed as follows: Wood ships, \$74,590,519.22; steel ships, \$77,968,172.89; steel ships requisitioned, \$169,971,860.55; plants, \$30,717,402.71.

The Emergency Fleet Corporation's programme is divided into steel and wood construction. Exercising its power of requisition the Shipping Board on Mar. 1 had taken over 425 steel vessels of 2,998,108 d.w. tons, and had let contracts for 720 steel vessels of 5,166,400 d.w. tons, a total of 1,145 steel ships, with an aggregate d.w. tonnage of 8,164,508. Of the requisitioned vessels, 72, of 485,576 d.w. tons, had been completed and put into operation; 15, of 152,290 d.w. tons, had been reconveyed to their original owners before completion; while 52 of the 338

still under construction had been launched but not completed.

Of the contract vessels, 2, of 17,600 d.w. tons, had been completed on Mar. 1. Three others, of 26,400 tons, have been launched.

The Division of Wood Ship Construction on Mar. 1 had let contracts for 490 wooden vessels, aggregating approximately 1,715,000 d.w. tons. None of these have been completed, but 17 had been launched on Mar. 30.

The Emergency Fleet Corporation's building programme was being carried on on Mar. 5 in 151 plants, 85 of which were engaged on wood construction and 66 on steel. Of the 151 plants, 81 are classified by the corporation as new, having been constructed especially to take care of contracts let by the corporation, or just as the U.S. was entering upon the war; the remaining 70 are classified as old plants, though some of them were erected to accommodate the boom in shipbuilding that developed in the U.S. in the early days of the European war.

At the time the Emergency Fleet Corporation was organized, practically all the ways of the yards then in existence were occupied by vessels building for the Navy Department or for private contract. This condition of affairs necessitated the construction of the 81 new yards before the building of ships for the Emergency Fleet Corporation could be commenced.

To spur the shipbuilding industry to speed up the government work, the Emergency Fleet Corporation has extended varying degrees of financial assistance to 63 plants, the aid going to the construction of shipways, plants, and the installation of plant equipment.

The expanded old yards and those newly constructed had to be manned. A pressing need for skilled workmen developed. To meet the situation the Emergency Fleet Corporation organized a nation wide campaign and established training schools for the men recruited into its service. The results achieved can be best realized by comparative figures. Census reports for 1916 show that in 45 steel yards then reporting there were only 43,582 workmen employed, while reports made to the Emergency Fleet Corporation on Feb. 16, 1918, by 53 out of a possible 63 steel yards, give an enrollment of 162,880. The census report for 1916 from 18 wooden yards record 1,380 workmen; those of the Emergency Fleet Corporation as of Feb. 16, 1918, from 59 out of a possible 75 yards, record 29,959.

Expansion of the government's wood shipbuilding programme, to include the construction of 200 new vessels of about 4,500 tons displacement each, was announced in Washington May 1 by Chairman Hurley, of the Shipping Board.

Estimates submitted to Congress May 8 by the Shipping Board call for an appropriation of \$2,225,835,000 for the cost of construction of ships.

The U.S. Shipping Board announced on May 19 that one ship a day was the pace wood shipyards were setting for other shipbuilding plants. The first 17 days of May witnessed the launching of 17 vessels of this type, thereby adding 60,000 tons to the U.S. merchant marine. In four successive weeks, including the third week of May, the production of wood ships was better than an average of one launching daily.

Thirty-four new steamships, aggregat-

ing 105,000 tons, completed during the winter and spring at Great Lakes yards, have been allocated to the trans-Atlantic trade, and some of them have already gone through the Welland Canal. The U.S. Shipping Board requisitioned these vessels in the early stages of their construction. All of them had been contracted for over-seas trade. They are of the Frederickstadt type—the well known lake type ship, averaging about 3,100 tons, 261 ft. over all, 43½ ft. beam, and 20 ft. deep. No alterations in them will be required for passage through the locks. Before the ice season set in last year, the Shipping Board moved a total of 43 steamships, including 24 of new construction, from the Great Lakes to the Atlantic coast.

A Cleveland press dispatch of May 20 says:—"An agreement tantamount to a contract to build 130 vessels to cost approximately \$800,000 each, and totalling about \$100,000,000 was reached here today, between C. M. Schwab, Director General of the government's shipbuilding programme, and Great Lakes shipbuilding companies. Every shipbuilding firm on the Great Lakes from Duluth to Cleveland was represented at the conference and the programme was outlined. The order was apportioned among the following:

American Shipbuilding Co., 60; Great Lakes Engineering Co., Detroit, 24; Manitowoc Shipbuilding Co., 12; and the remainder were divided between the Toledo Shipbuilding Co., the McDougall Duluth Shipbuilding Co., and the Glove Shipbuilding Co. of Duluth. The ships will be of 4,200 gross tons d.w. capacity and will have 1,500 h.p. They will be full Welland Canal size of the greatest depth, which is a little more than 28 ft. Deliveries are to be completed by the end of the lake shipping season in 1919."

The construction of 40 additional concrete ships, cargo carriers and tankers, of 7,500 tons capacity each, has been approved by the Emergency Fleet Corporation and they will be constructed in five government controlled yards. It is estimated that they will cost from \$125 to \$140 a ton. Contracts have already been approved for the construction of 18 concrete tankers, 14 of 7,500 tons capacity and 4 with an aggregate tonnage of 12,500 tons. Each of these will be built on the Pacific coast and the others on the Atlantic coast.

**New York State Barge Canal.**—On May 17, the first boat passed through the western section of the canal extending from north of Syracuse to the Niagara River. The eastern sections, which connect Lake Ontario at Oswego and Lake Champlain at Whitehall with the Hudson River above Troy, were completed last summer and were put into use again this season on May 15. Some work still remains on the western section in removing obstructions and widening the channel, but navigation is now possible over the whole canal route.

**Frank Waterhouse & Co. of Canada, Ltd.,** has been incorporated under the Dominion Companies Act, with \$50,000 capital stock and office at Vancouver, B. C., to build, own and operate vessels of all kinds, and to operate a general navigation business in all waters. The provisional directors are: Frank Waterhouse, N. H. Begley, J. R. Lane, Seattle, Wash.; D. G. Marshall, J. Speer, Vancouver, B.C.



## Atlantic and Pacific Ocean Marine.

The first ocean vessel up the St. Lawrence River for the current season of navigation, arrived at Quebec May 7, and Montreal, May 8. The captain was presented with a silk hat and cane by the Montreal Harbor Commissioners.

Canadian Pacific Ocean Services is stated to have made arrangements for the chartering of two of the steamships owned in Holland which have been requisitioned by the allies, for use on the Pacific Ocean. The vessels mentioned as having been secured are, the steamships Tjikembang and Tjison, which were operated formerly by the Nederland Royal Mail, and the Rotterdamsche Lloyd, between San Francisco and the Orient.

The Canadian Pacific Ocean Services' steamships Empress of Asia and Empress of Russia, as announced in a recent issue, have been requisitioned by the Dominion Government and are being handed over to the British Government. The former vessel has had all her furnishings and movable fittings taken out, at Victoria, and has been coaled at Vancouver, after which, as a Victoria reporter states, she "disappears into oblivion." The Empress of Russia is reported to be fitting out at Hong Kong, for special service, and presumably has the same destination.

The s.s. Angouleme, which ran ashore at Scatarie Island, N.S., during last winter, was released by her own steam, May 23. It is stated that the damage is comparatively light, but that she will be drydocked for examination and repairs. She was built in 1917, by Thor Iron Works, Toronto, under contract for Jas. Playfair, President, Great Lakes Transportation Co., but was sold, while on the ways, to the Oriental Navigation Co. of Nantes, France, and New York. On launching, she was named Orleans, the name being changed to Angouleme just prior to sailing for New York, and the casualty occurred while she was outward bound.

Canadian Pacific Ocean Services s.s. Medora was reported May 7, via New York, to have been sunk by a German torpedo while outward bound from Great Britain, it also being stated that there was no loss of life. The Medora was 5,135 tons gross, and built at Liverpool, Eng., in 1912. In connection with the loss of this vessel, T. Robb, Manager, Shipping Federation of Canada, is reported to have stated that word as to the sinking of the Medora was received some time ago, and we may add that Canadian Railway and Marine World had information of the loss of a C.P.O.S. vessel, at least two weeks prior to the date given. There seems to be no reasonable object to be gained in holding back information of this nature, which is of general interest, when it is already known by owners, insurance and brokerage offices.

## Maritime Provinces and Newfoundland.

The Naval Service Department received tenders, May 31, for 2 self propelled coal discharging bridges, to be installed at Halifax, N.S.

The Reid Newfoundland Co.'s s.s. Ethie ran ashore on Mistaken Point, Nfld., May 14, and was later released with light damage. She is a small steel vessel of 441 tons gross, and was built at Glasgow, Scotland, in 1900. She has been engaged for some time in mail and passenger service between St. John's and Placentia Bay ports, Nfld.

The Dominion Government s.s. Stanley, which sailed from Louisburg, N.S., towards the end of April, with mails, etc., for Magdalen Islands, was reported to be in distress off East Point, P.E.I., May 1. Her rudder was reported to have been lost or broken. She, however, arrived at North Sydney, N.S., May 8, under her own steam, and made temporary repairs, afterwards proceeding to Halifax.

It is intimated from Quebec that the coal service between the Maritime Provinces and St. Lawrence ports, hitherto given by the Dominion Coal Co., is likely to be curtailed this year owing to a shortage of bottoms. Some steps are being taken by other companies to meet the situation, and it is stated that the Dominion Government will probably supply some vessels to convey coal to Levis, whence it will be distributed.

The Dominion Coal Co.'s s.s. Louisburg, bound from Sydney, N.S., to St. John's, Nfld., with coal, was wrecked in St. Marys Bay, near Cape English, Nfld., May 4, the crew being saved. She was built at Sunderland, Eng., in 1881, when she was named Thorne Holme. She was equipped with engine of 225 n.h.p., driving a screw, and her dimensions were: length 260 ft., breadth 36 ft., depth 18.5 ft.; tonnage, 1,816 gross, 1,182 register.

## Province of Quebec Marine.

The s.s. Middlesex, registered in the U.S., has been purchased by A. A. Larocque, Montreal, transferred to the Canadian register, and renamed Woodlands.

The Department of Railways and Canals will receive tenders to June 5, for rebuilding the lower entrance piers to lock 25 on the Galops Canal, and to lock 23, Rapide Plat Canal.

The Quebec Board of Trade discussed on May 11, a proposal for the formation of a steamship company for the operation of vessels between Newfoundland, Nova Scotia, Prince Edward Island, Gulf ports, Quebec and Montreal. The details were outlined by L. Fiset, Eastern Harbor, N. S., who stated that it was proposed to purchase four large steel steamships built

recently on the Great Lakes, and to incorporate a company with \$600,000 capital stock, eventually increasing it to \$1,000,000.

## Ontario and the Great Lakes.

A ferry service is announced to have been started between Adolphustown, N. Y., and Picton, Ont.

The C.P.R. s.s. Assiniboia was docked at the Port Arthur Shipbuilding Co.'s dock at Port Arthur, May 4, for the replacement of a number of plates, a new stern bar and other repairs.

The icebreaking s.s. James Whalen is undergoing general repairs at the Port Arthur Shipbuilding Co.'s plant, having suffered considerably while breaking ice prior to the reopening of navigation.

Imperial Oil's s.s. Royalite, which arrived at Sarnia, May 4, with a cargo of oil, encountered heavy ice on her trip there, and was found to be leaking. Her cargo was lightered and she proceeded to Welland for repairs.

The Toronto City Council has approved of the Toronto Ferry Co.'s application for an increase in the fares between the city and Toronto Island, from 10c to 15c for adults for the round trip, in view of the increased costs of coal, material and labor.

The Toronto Harbor Commission has moved to its new offices on the water front. The building is a six story one, of which the commission occupies two floors. The remainder of the accommodation will be taken up by navigation companies, etc., as soon as it is completed, during June.

Judgment for \$14,000 was given against Canada Steamship Lines, Ltd., at Toronto, May 7, on a claim for damages by Austin & Nicholson, Chapeau, Ont., the company having failed to carry out a contract for the carrying of 10,000 cords of pulpwood from Michipicoten Harbor to Thorold, in 1916.

The Livingstone channel, in the Detroit River, was closed for a few days, early in May, owing to the presence of large boulders brought down by the ice, and deposited opposite Amherstburg. The

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie canals during April, 1918.

		Eastbound		
ARTICLES.		Can. Canal.	U.S. Canal.	Total.
Lumber . . . . .	m. ft. b. m.	200		200
Flour . . . . .	Barrels			
Wheat . . . . .	Bushels	396,600	4,045,047	4,441,647
Grain, other than wheat . . . . .	Bushels	608,331	1,474,698	2,083,029
Copper . . . . .	Short tons			
Iron Ore . . . . .	Short tons	10,752	136,436	147,188
Pig Iron . . . . .	Short tons			
Stone . . . . .	Tons			
General Merchandise . . . . .	Short tons		7	7
Passengers . . . . .	Number			
		Westbound.		
Coal, soft . . . . .	Short tons	27,578	60,500	88,078
Coal, hard . . . . .	Short tons			
Iron Ore . . . . .	Short tons			
Mfgd. iron and steel . . . . .	Tons			
Salt . . . . .	Barrels			
Oil . . . . .	Tons			
Stone . . . . .	Short tons		9,200	9,200
General Merchandise . . . . .	Short tons	2,715	1,200	3,915
Passengers . . . . .	Number			
		Summary.		
Vessel passages . . . . .	Number	51	136	187
Registered Tonnage . . . . .	Net	58,758	342,707	401,465
Freight—				
Eastbound . . . . .	Short tons	35,503	285,793	321,296
Westbound . . . . .	Short tons	30,293	70,900	101,193
Total Freight . . . . .	Short tons	357,693	65,796	422,489

The Canadian canal opened April 23, and the U.S. canal opened April 20.



channel was announced May 8 to have been cleared, and navigation was resumed, vessels in the meantime having used the Canadian channel.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level for April, as follows:—Superior, 601.46; Michigan and Huron, 581.40; St. Clair, 574.46; Erie, 572.25; Ontario, 247.17. Compared with the average April levels for the past ten years, Superior was 0.13 ft. below; Michigan and Huron 0.27 ft. above; Erie 0.15 below, and Ontario 0.75 ft. above.

### Manitoba, Saskatchewan and Alberta.

The Peace River Tramways & Navigation Co.'s s.s. D. A. Thomas sailed north from Peace River Crossing, May 18, opening the navigation season.

### British Columbia and Pacific Coast.

The ice in the Yukon River broke up May 11, and some damage to wharves and riverside property occurred at Dawson, owing to the rush of ice.

Tenders were received May 31, by the Public Works Department for a steamboat service on the Upper Fraser River between South Fort George and Soda Creek.

The B.C. Marine, Ltd., has deposited plans with the Public Works Department at Ottawa, with a description of a proposed addition to its wharf to be built in Burrard Inlet at the foot of Victoria Drive, Vancouver.

Satisfactory progress is being made with the construction of the shed on the Government wharf at Vancouver. The foundations are practically in, and the other work is proceeding according to schedule for completion by the autumn. Hodgson & King are the contractors.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John is reported to have struck an unknown obstacle, presumed to be an uncharted rock, in Masset Inlet on the east side of Queen Charlotte Islands, May 1. She was able to make Vancouver under her own steam, where she was inspected.

The C.P.R. is reported to have purchased the s.s. Daily for its British Columbia Coast service, and to have made extensive alterations, practically involving reconstruction, and renamed her Island Princess. It is stated that she will be put on the Gulf Islands route about the end of May.

The Canadian Merchant Service Guild is endeavoring to obtain a higher schedule of pay for masters and officers of vessels operating in British Columbia waters. It is stated that the present scale is from 30% to 50% below that of similar vessels operating from U.S. Pacific ports, and that the hours worked are about 30% greater.

The Union Steamship Co. of British Columbia is receiving tenders for the construction of a steel cargo steamship, 166 ft. long, 30 ft. beam and 14 ft. moulded depth, for coastwise service. The machinery will be transferred from the s.s. Washington, which has been acquired for the purpose. The engines are of the reciprocating type, 850 h.p.

The motor ship Malahat, built at Victoria last year for Canada West Coast Navigation Co. interests, and which sailed from Alberni, Oct. 2, 1917, for Sydney,

Australia, is now back on the coast, and is having her auxiliary machinery installed. Her maiden trip was undertaken under sail only, as the machinery could not be obtained by the time it was hoped.

The Pacific Steamship Co.'s s.s. Governor collided with the end of the Ogden Pier, Victoria, May 7, when getting alongside on arrival from San Francisco. A hole was torn in the hull at the turn of the bilge abaft on the starboard side, and some plates were strained. Temporary repairs were quickly carried out by Yarrows, Ltd., after which she proceeded to Seattle, where complete repairs were made.

The Grand Trunk Pacific Coast Steamship Co.'s summer schedule goes into effect, June 28. The sailing day for the Queen Charlotte Islands direct service will be changed from Tuesday to Friday, and the steamships Prince John and Prince Albert will alternate weekly, leaving Vancouver on Fridays and Prince Rupert on Saturdays. The steamships Prince Rupert and Prince George will take up their summer schedule between Seattle and Alaska ports, June 26 and 24, respectively, from Seattle, Wash.

### Mainly About Marine People.

J. T. Edmond, who has been in Canada West Coast Navigation Co.'s service for some time, is reported to have been appointed ferry superintendent at North Vancouver, B.C.

James Playfair, President, Great Lakes Transportation Co., has bought and presented to the town of Midland, Ont., a residence to be used as a hospital, the general and marine hospital building there being too small.

Hon. C. C. Ballantyne, Minister of Marine, is reported to have announced at a patriotic meeting in Ottawa, May 25, that he will leave for England shortly to consult with the Imperial authorities on naval and other matters.

Capt. J. B. Forrest, a well known lake mariner, who retired from active service in 1908, died at Walkerville, Ont., May 4, aged 69. He commenced his marine service at the age of 16, on one of the old sailing vessels plying between Port Arthur and Buffalo, and at the time of his retirement was master of the yacht Lurline, then owned by Hiram Walker & Sons, and later purchased by the Dominion Government. Capt. F. D. Forrest, of the Ontario Car Ferry Co.'s car ferry Ontario No. 2, is a brother.

John V. Foy, who has been appointed General Passenger Agent in charge of territory Kingston and west to Detroit and Port Huron frontier, Canada Steamship Lines, Ltd., Toronto, was born at Toronto, Aug. 27, 1882, and entered transportation service in 1901, with Capt. R. S. Melville, general ticket agent, Toronto. He was, from 1902 to 1904, clerk, Niagara Navigation Co., Toronto; 1905 to 1910, chief clerk to General Manager, Niagara Navigation Co., Toronto; 1911 to 1912, General Passenger Agent, Niagara Navigation Co., Toronto; 1913 to 1914, District Passenger Agent, Richelieu & Ontario Navigation Co., Toronto; 1914 to 1915, General Agent, Passenger Department, Canada Steamship Lines, Ltd., Chicago, Ill.; 1915 to 1916, General Agent, Passenger Department, same company, Buffalo, N.Y.; 1916 to 1917, Assistant General Passenger Agent, same company, Toronto; 1917 to Apr. 26, 1918, General Passenger and Freight Agent, same company, Toronto.

### Reduction of United States War Risk Insurance.

The Secretary of the United States Treasury on May 8 ordered Government war risk insurance rates reduced from 3 to 2% on the hulls and cargoes of U.S. steamships traveling through the war zone from U.S. ports to ports in the United Kingdom and on the French Atlantic coast.

On Aug. 15, 1917, the rate was 6½%; on Oct. 6 it was reduced to 5%; on Nov. 23 it was reduced to 4%, and on Mar. 18 it was reduced to 3%.

At the same time the Secretary ordered reductions and adjustments of rates to various other ports, including from U.S. Atlantic ports to Halifax, N.S., St. John, N.B., and St. Lawrence ports from ¼% to ⅓%.

### Conscription of Sailors.

Senator Bostock asked the following questions in the Senate, May 7:—

1. Is the government aware that sailors of the coasting and deep sea service are being called up under the Military Service Act, causing a depletion of the supply of men for ships sailing from British Columbia ports?

2. Has the government any record of the number of certificated officers and sailors who have been called up in this way?

3. Will the government have immediate inquiry made and stop the conscription of sailors in the future?

4. Is the government aware that the United States Government is offering special inducements to men to qualify as sailors to man the ships sailing from U. S. ports?

Sir Jas. Lougheed replied as follows:—

1. There is no special or exceptional authority with regard to sailors; they are subject to the operation of the law and entitled to exemption in proper cases in like manner as others affected by the outstanding call under the Military Service Act.

2. No, except as this might be gathered by examination of the records at the offices of the various registrars under the Military Service Act.

3. It is not in accord with parliamentary practice for the government to answer what it proposes to do under the circumstances mentioned.

4. No information in Department of Justice.

**Montreal Traffic Arrangements.**—A Montreal press dispatch states that that port will this year be devoted solely to freight and special traffic, all ocean steamships formerly using the St. Lawrence route, being diverted to other ports. This decision, it is stated, was taken after careful consideration of the matter by the Admiralty, whose experts advised that greater economy and expediency could be effected by the concentration of freight vessels at Montreal.

**Women As Vessel Builders.**—A dispatch from Sydney, N.S., says that women have been engaged at Baddeck, N.S., to build lifeboats and dories for the Dominion Government, under the direction of Dr. A. Graham Bell, and, it is stated, that this is the first time in the history of the Dominion that women have been offered work of this nature.

**Lake and Canadian Coal Distribution.** The U.S. Fuel Administration has appointed C. P. White as manager of lake and Canadian coal distribution.



### Customs Duty on Wireless Telegraph Apparatus.

A Dominion order in council, passed April 5, provides as follows:—When imported materials, on which customs duties have been paid, are used in the manufacture of wireless telegraph apparatus supplied to vessels in Canada, subsequent to Jan. 1, 1918, there may be paid a drawback of 99% of the duties paid on the materials so used. Provided, however, that such drawback shall not be paid unless the duty has been paid on the materials so used, within three years of the date when the wireless telegraph apparatus used has been supplied to the ship equipped therewith.

The drawback may be paid to the manufacturer of the wireless telegraph apparatus subject to the following conditions, viz.:—The quantity of material used and the amount of duties paid thereon shall be ascertained; satisfactory evidence shall be furnished in respect of the manufacture of the wireless telegraph apparatus in Canada and its installation on board the vessel equipped therewith. The claim for drawback shall be verified under oath before a collector of customs to the satisfaction of the Minister of Customs, in such form as he shall prescribe, within one year after the apparatus has been supplied to the vessel in Canada. The Minister may also require in any case the production of such further evidence as he deems necessary to establish the bona fides of the claim.

**Customs Duty on Shipbuilding Materials.**—A Dominion order in council passed April 19, under the provisions of section 286 of the Customs Act, makes the following regulations respecting the drawback of customs duty on ships and vessels measuring over 80 tons gross tonnage, built in Canada. The drawback of 99% of the customs duty allowed on imported materials used in the original construction of ships and vessels built in Canada since Nov. 1, 1916, may, with the consent of the builder of the vessel, be paid to the manufacturer of articles made in Canada from imported materials and used in such original construction of the vessel, subject to the same conditions and restrictions as when that drawback is paid to the builder of the vessel, and also subject to such further regulations as the Minister of Customs deems necessary to establish the bona fides of the claim.

**Norwegian Shipbuilding in United States:**—New York press dispatch May 12:—Land has been acquired in New Jersey by Norwegian shipping interests for the construction of "one of the largest shipyards in the world," it was announced here Saturday by Christoffer Hannevig, of Christoffer Hannevig, Inc., a prominent Norwegian steamship concern, with headquarters here. The location of the proposed yard was not disclosed by Mr. Hannevig, who said that the ships to be constructed would fly the Norwegian flag, but would be used in United States trade.

**Electric Welding for Shipbuilding.**—A. J. Mason has been authorized to test on a large scale electric welding as applied to shipbuilding. This work will take the form of constructing part of a hull at the U.S. Government shipbuilding plant at Newark, N.J. The material will be assembled and tacked together and rendered watertight by various forms of arc welding. Foundations are being prepared to allow of severe tests by pressure, as well as every agency to develop the merits of the system.

### The Great Lakes Transportation Co. Purchases U.S. Vessels.

Canadian Railway and Marine World for May contained information as to the purchase by the Great Lakes Transportation Co., Midland, Ont., of the s.s. Oceanica, formerly owned by the Western Steamship Corporation. The company has also purchased the s.s. A. E. Stewart, owned by the Stewart Transportation Co., Detroit, Mich., and the s.s. Western Star, owned by the Cadillac Steamship Co., Cleveland, Ohio. The name of the s.s. A. E. Stewart has been changed to Glenorchy, and that of the Western Star, to Glenisla, both being transferred to the Canadian register.

We are advised that the Oceanica will be operated by Lake Transportation Co. in the interests of the Valley Camp Coal Co., Cleveland, Ohio.

The A. E. Stewart was built at West Bay City, Mich., in 1902, of steel on the channel system, with steel tank top, 2 non watertight and 2 watertight compartments, steam pump wells, steel boiler house, electric light, etc., and is equipped with triple expansion engines with cylinders 20, 33 and 54 in. diam., by 42 in. stroke, 1,100 i.h.p. at 85 r.p.m., and supplied with steam by 2 Scotch boilers, 14 x 12 ft., at 170 lb. Her dimensions are: length 365 ft., breadth 50 ft., depth 28 ft.; tonnage, 3,943 gross, 3,049 register.

The Western Star was built at Wyandotte, Mich., in 1903 of steel, on the channel system, with steel tank top, steel boiler house, electric light, etc., and she is equipped with triple expansion engines with cylinders 22, 35 and 58 in. diam. by 42 in. stroke, 1,490 i.h.p., and supplied with steam by 2 Scotch boilers 13 ft. 2 in. by 11½ ft., at 170 lb. under induced draft. Her dimensions are: length 416 ft., breadth 50 ft., depth 28 ft.; tonnage, 4,764 gross, 3,593 register.

**The St. Lawrence Coal & Freighting Co.**, which was incorporated in New York State recently, with a capital of \$50,000, is operating the s.s. W. J. Carter between Oswego, N.Y., Brockville, Ont., and Ogdensburg, N.Y., in the coal trade. She was formerly owned by the Finn & Oslen Freighting Co., Marinette, Wis., and was built at Milwaukee, Wis., of oak, in 1886. She has been overhauled, and will be equipped with a self unloading clam, which will permit of her being loaded one day and unloaded the next, thus enabling her, weather permitting, to make three full trips a week. The head office of the company is at Ogdensburg, N.Y., and the following are the officers and directors: E. F. McCourt, Montreal, President; E. J. Burns, Ogdensburg, Vice President; J. A. Bresnan, Brockville, Ont., Managing Director and Secretary-Treasurer; C. W. Loomis, Ogdensburg, and J. R. Bresnan, Brockville.

**Ocean Shipping of Grain.**—Replying to a question as to what steps the Dominion Government might take to "put a stop to the diversion of the grain trade of the Canadian Northwest, two-thirds of which is now being shipped at United States sea ports, and to give this trade to Canadian ports," the Prime Minister stated in the House of Commons, May 2, that it is necessary under war conditions, and in view of the submarine peril, to utilize from time to time, all Atlantic ports on the continent.

**Shelburne Shipbuilders, Ltd.**, Shelburne, N.S., launched the tern schooner Misty Star recently. Several other vessels are under construction.

### United States Lake Vessels for Ocean Service.

The United States Shipping Board issued the following statement on May 1: Overseas shipping will be further added to from this time on by a steady flow of completed new vessels from the Great Lakes shipyards. With the re-opening of the lakes and the St. Lawrence River to navigation, 34 ships built at the Great Lakes yards during the autumn, winter, and spring are now either en route or loading for trans-Atlantic service. They total approximately 100,000 tons. Four of these new ships have already sailed for the Atlantic coast. The other 30 are reported taking on cargoes at Chicago, Duluth, and ports elsewhere on the Great Lakes. All will be on their maiden voyages during the next seven days.

Of 23 ships in the Great Lakes shipyards scheduled to be completed in May, 16 are reported already so far advanced that they have begun to take on crews and cargoes. The Bureau of Operations of the Shipping Board has allocated these new ships to the New English coal carrying trade. They approximate a total of 50,000 tons.

**The Dominion Government Dredge Galveston**, the sale of which was announced in our last issue, was purchased by W. H. Hutchinson, St. Catharines, Ont., and H. Dussault, Levis, Que. As mentioned previously, it is the purchasers' intention to convert the vessel into a cargo steamship for Atlantic service.



Department of Naval Service.  
NOTICE OF SALE.

Canadian Government Seamer "La Canadienne."

Sealed tenders addressed to the undersigned, and endorsed "Tender for Steamer 'La Canadienne,'" will be received up to noon of the 10th day of June, 1918, for the purchase of the Steamer "La Canadienne," now lying at Owen Sound, Ont.

"La Canadienne" is a single screw steamer of iron construction, built in 1880. Her net registered tonnage is 227 and her displacement is 500. Is 154 ft. long with a breadth of 23 ft., and a maximum draught of 11 ft. Her maximum speed is approximately 8 knots. Her boilers are in good condition. She is fully equipped for commission, and carries a motor boat and 4 sail boats, with accommodation for 55 men. She may be seen and inspected at any time upon application to Mr. John Nesbitt of Owen Sound. The ship will be sold as she lies.

Each tender must be accompanied by a certified cheque, made payable to the Department of the Naval Service at Ottawa for a sum equivalent to ten per cent. (10%) of the full amount of the tender. In case of failure to complete the purchase within the time specified the cheque of the successful tenderer becomes forfeited; all others will be returned promptly. The right is reserved to reject any or all tenders.

The terms of sale are cash within fifteen (15) days of the acceptance of tender.

G. J. DESBARATS,

Deputy Minister of the Naval Service.

Ottawa, May 10, 1918.

Unauthorized publication of this advertisement will not be paid for.

### NOTICE.

All persons are hereby given notice that the undersigned have purchased the steamer "Oceanica" from Western Steamship Corporation, and all persons having liens or claims against said steamer "Oceanica" must immediately file same with undersigned for forwarding to late owner.

LAKE TRANSPORTATION CO.  
c/o Valley Camp Coal Co.,  
Rockefeller Bldg.,  
Cleveland, Ohio.



# Champlain Dry Dock for Quebec Harbor.

By U. Valiquet, M.Can.Soc.C.E., Superintending Engineer, Department of Public Works.

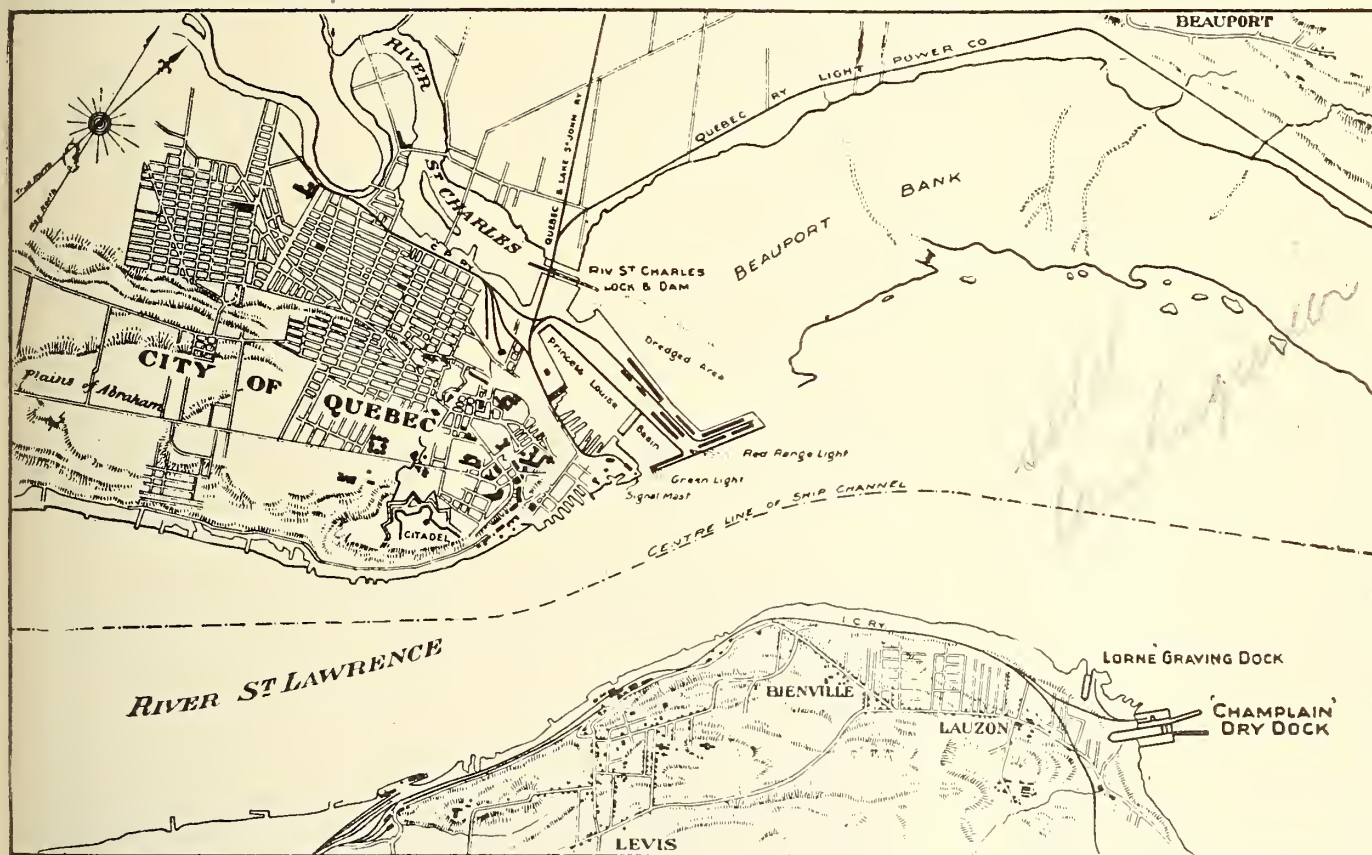
For a number of years the River St. Lawrence has been frequented by ocean steamers of such dimensions that they could not be accommodated in the Lorne dry dock, completed in 1886, at Lauzon, in Quebec harbor. In 1906 the Canadian Pacific Ry. brought out its steamships Empress of Britain and Empress of Ireland, of 65 ft. beam. The Allan Line steamships Virginian and Victorian of 60 ft. beam were also placed on the St. Lawrence route in that year. The Bavarian of somewhat narrower beam, 59¼ ft., came to Quebec in 1905; thereafter the number of large ships placed on the St. Lawrence traffic increased rapidly, until in 1912 there were 25 vessels that could not have been repaired in the long stretch of the St. Lawrence navigation for want

scrap. This is the worst case on record in the history of the St. Lawrence navigation. The vessel was only six years old and of a registered tonnage of 10,387 tons.

In the summer of 1898 the writer was instructed to prepare a report on the practicability of widening the entrance of the Lorne dry dock at Levis, which had been completed in 1886. A plan was submitted, showing the possibility of obtaining an entrance 70 ft. wide, by removing part of the timber slides at the outer end of the dock; increasing the length was also suggested. The first was reported to be inadvisable, as it would greatly disfigure the dock and do away with the convenience of the timber slides; the only feasible way would be to remove and rebuild in

cost of \$921,130. In 1888 the Canadian Government relieved the Quebec Harbor Commission of all obligations to refund the sum expended on the dry dock and in 1890 it was placed upon the control of the Department of Public Works; the writer was then placed in charge.

In 1906 the Quebec Harbor Commissioners urged upon the government the necessity for a large dry dock for Quebec harbor. In the autumn of that year the writer was instructed to make a survey of the locality surrounding the old dry dock and report on the best location. Two sites were examined, but the position to the east of the present dock was considered the most advantageous for three principal reasons. A larger area of land could be acquired. A better foundation



Quebec Harbor, showing locations of Champlain and Lorne Drydocks.

of sufficient dock accommodation, the width of entrance of the present dry dock being only 62 ft. Any of these vessels that required docking had to be repaired temporarily, as well as possible, while afloat, and taken either to Halifax or New York, which, in some cases, was a risky undertaking. The case of the s.s. Bavarian was an unfortunate experience in this respect. On Nov. 5, 1905, she ran aground with a full cargo from Montreal and Quebec, about 40 miles below Quebec, opposite Grosse Isle. Although late in the autumn, she could have been raised and brought to Quebec had there been dock accommodation for her. Her beam was 59¼ ft., but through the accident her sides had bulged out beyond the width of the dry dock entrance. She was raised in the following spring, although further damaged by ice during the winter, and brought on the beach a short distance below the dry dock, where she was sold as

another position the eastern side wall, thus depriving the harbor of all dock accommodation for probably two seasons. A new caisson would necessarily have to be provided; the cost would have been considerable. Further, it was considered that a new dry dock would be required in Quebec before many years. The suggestion of lengthening the dock was adopted; the length was increased from 484 to 600 ft.; this consisted merely in moving the circular head, stairways and timber slides 116 ft. further, after excavating the rock to proper width and depth. The work was performed under contract awarded in 1900, for \$100,000, and completed in 1901 without interfering with the use of the dock. This dry dock was built by the Quebec Harbor Commissioners under an act, 38 Vict. Cap. 56-1875, by which the issue of bonds was allowed to obtain the necessary amount. The work was started in 1878 and completed in 1886 at a total

could be obtained. The repairing plant of G. T. Davie & Sons could have better access to both the new and old docks. A plan and report were submitted in the early part of 1907; the dock then proposed was 1,000 ft. long with an entrance width of 100 ft. The proposition was not immediately acted upon; the question as to whether the government should build the dock or induce some shipbuilding firm to build it under a subsidy from the government was unsettled. The result of the discussion was the passing at the session of 1910 of an Act to Encourage the Construction of Dry Docks.

Under this act dry docks were divided into three classes. The first class included dry docks estimated to cost not more than \$4,000,000, and capable of receiving and repairing the largest ships of the British Navy and of the following dimensions: Clear length on bottom 900 ft.; clear width of entrance 100 ft., with depth on



sill at high water ordinary spring tides of 35 ft. Floating dry docks of a lifting capacity of 25,000 tons. The second class included dry docks estimated to cost \$2,500,000, of the following dimensions: Clear length on bottom 650 ft.; clear width of entrance 85 ft.; depth of water on sill at ordinary high water spring tides 30 ft., if in tidal waters; or 25 ft. on sill, if constructed in non-tidal waters. Floating dry docks of a lifting capacity of 15,000 tons. The third class consisted of

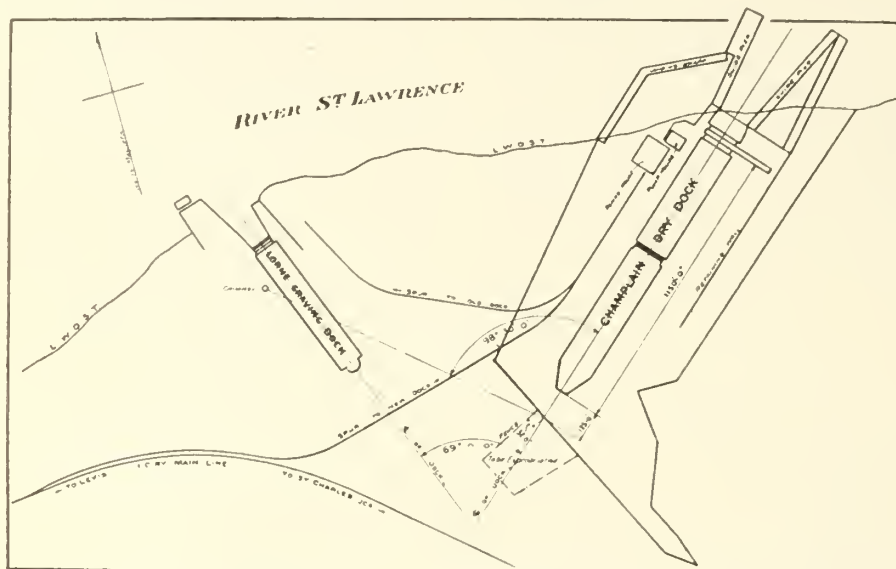
1,150 ft.; width of entrance 125 ft.; depth on sill at high water spring tides 38 ft. A subsidy of 4½% on the estimated cost of \$5,500,000 is allowed, payable half-yearly for 35 years from the time of completion. By this amendment no bonds or debentures are to be issued until \$1,000,000 shall have been expended on the construction of the dry dock.

After the passing of the act of 1910, shipbuilding firms were invited to build a dry dock at Lauzon, in Quebec harbor,

the eastward of the Davie shipbuilding yard, so that both the old and new dry docks would be easily accessible from the shops. Tenders for the construction of this work were advertised on May 12, 1913, to be received on June 30, 1913. The contract was awarded to the lowest tenderers, M. P. & J. T. Davis, and was signed on Oct. 7, 1913. The new dock was at first intended to be built on a line parallel to the old dry dock, but this was objected to from the point of view of navigation. A commission was appointed in the autumn of 1913 to investigate and find out which direction would best suit the entrance facilities, and it was decided that the centre line of the dock should form an angle of 69° with the direction of the old dry dock, or approximately 45° n.e., and it was so laid out. Owing to the limited time available before the calling of tenders, general plans only were prepared, together with an estimate of the cost. The requirements as to details for the machinery and caissons were stated in the specification; the contractors were requested to furnish during construction all detail plans, to be submitted for approval by the department. The dry dock has the following general dimensions. Total length from outer caisson to head wall 1,150 ft., divided into two compartments. Outer part 500 ft.: Inner part 650 ft.

Width of entrance .....	120 ft.
Width at coping .....	144 ft.
Width on floor .....	105 ft.
Depth on sill at high water s.t. ....	40 ft.
Depth on sill at low water, s.t. ....	22 ft.
Spring tides rise .....	18 ft.
Coping of side wall above high water s.t. ....	7 ft.
Floor at outer end below outer sill. ....	4½ ft.
Slope of floor transversely .....	1 in 100
Western guide pier .....	400 ft.
Eastern guide pier .....	500 ft.
Depth in entrance channel at low tide. ....	30 ft.

The land expropriated in connection with the construction of the dry dock has a superficial area of 25½ acres, of which 11½ are reclaimed beach land. The outer entrance of the dock is closed with a rolling caisson, the top of which is provided



Champlain and Lorne Drydocks, Lauzon, Que.

dry docks estimated to cost not more than \$1,500,000, of the following dimensions: Clear length on bottom 400 ft.; clear width of entrance 65 ft.; depth of water on sill at ordinary high water spring tides 22 ft., if in tidal waters; and 18 ft., if in non-tidal water. Floating dry docks of a lifting capacity of 3,500 tons. The estimated cost in all cases includes the totally equipped repairing plant, capable of effecting all sorts of repairs, including machine shops and tools, foundry, administration buildings, etc., together with the dock itself, but does not include marine slips or other installation used in the construction of ships.

According to the act, the subsidy on dry docks of the first class is 3½% per annum on the estimated cost for 35 years from the time it has been reported that the dry dock is entirely completed. The subsidy on the second class is 3½% per annum for 25 years from the time of completion. On the third class, the subsidy is 3% for not exceeding 20 years from the time of completion. In all cases the company making the application must furnish plans, with a detailed list of the plant and a complete estimate of the cost. These are revised and corrected, if found advisable; and, upon a report from the Chief Engineer of the Public Works Department that the works intended to be built are in the public interest, the application is granted upon certain conditions of management and maintenance. The works are to be executed under the superintendence of an officer of the department.

The above act was amended in April, 1912, by making the length of the first class dry docks 1150 ft., the entrance 110 ft. and the estimated cost \$5,500,000. Another amendment was made in May, 1914, by which a subsidy of 4% on the estimated cost is allowed for first class dry docks. The act was further amended in 1917, by which the dimensions of the first class dry docks shall be: length on bottom

under the subsidy act of that year. Two companies submitted plans and offered to build under contract without reference to the subsidy act. In 1912 another company submitted plans for a dry dock to be built on the Quebec side of the harbor, just below the mouth of the St. Charles River, according to the subsidy act, as



Champlain Drydock, Lauzon, Que. Looking toward the St. Lawrence River.

amended in 1912. Some objection having been made to this location and with no prospect in view for any other applicant, the Public Works Department decided that a dry dock would be built by the government.

In the early part of 1913 the writer was instructed to prepare plans and specifications on which tenders could be called as soon as possible for the construction of the new dry dock, the location being to

with an automatic folding bridge; a floating caisson closes the inner entrance. This caisson can also be placed to close the outer entrance in cases when repairs are required to be made to the rolling caisson. Three main centrifugal pumps, each of 63,000 gall. a minute capacity, are used to empty the dock; two pumps of 6,000 gall. a minute each are used to keep the dock dry. All pumps are run by electric power. Eight boilers of a total capacity



of 3,600 h.p. furnish the steam at 200 lb. pressure to run the three direct current turbo generators of 1,500, 750 and 300 kilowatts respectively, which furnish the current at 550 volts to run the pump and other motors. A direct current generator of 100 kilowatts at 220 volts, driven by a steam engine, will furnish the current for the lamps around the dock and in the buildings. There are 24 lamps of 500 watts, hung from poles around the dock. The poles are made of gas pipe, with the lower end set into sockets fitted with electric connections, and made removable in case of necessity. All electric wiring for lamps and motors outside of the buildings is placed underground. The approximate quantities of the materials in the principal items entering into the construction are:

Rock excavation above and below coping ..	342,000 c. yd.
Submarine rock excavation in channel ..	65,000 c. yd.
Dredging entrance channel ..	530,000 c. yd.
Concrete ..	100,000 c. yd.
Granite steps, altars and quoins ..	140,000 c. ft.
Steel beams, reinforcing bars and manhole covers ..	150,000 lb.
Cast iron for roller casings and sluice valves ..	125 tons
Cast steel for caisson rollers ..	65 tons
Gun metal for caisson roller and valves ..	4,500 lb.
Cast iron in keel blocks and bollards ..	990 tons
Forged steel spindles for rollers ..	11,000 lb.
Bricks for chimney and flues ..	345,000
Fire bricks ..	125,000
Cribwork in approach piers ..	63,300 c. yd.
Concrete in approach piers ..	13,300 c. yd.
Steel in rolling caisson ..	930 tons
Total weight in rolling caisson and machinery ..	1,125 tons
Steel in floating caisson ..	960 tons

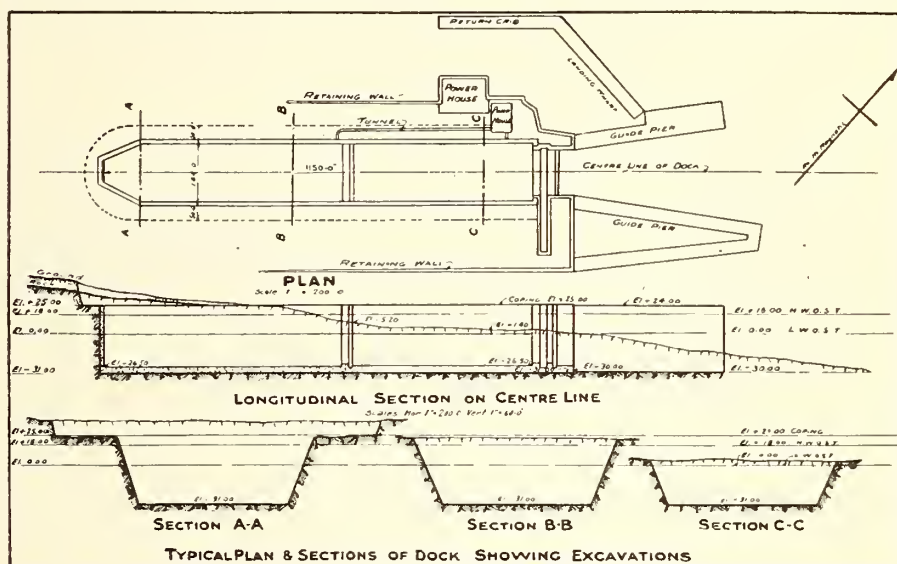
The work was started in May, 1914. The concrete retaining walls on each side of the dock, specified to be built from the natural rock surface to elevation +24 and intended to prevent seepage through the filling, were completed during the season's work, as well as the cofferdam between the outer ends of these walls. Rock drilling in the prism of the dock was also carried on in the part not affected by tides. The largest part of the drilling was done by two well drillers, the holes being sunk down to grade and plugged for future blasting. The average depth of perforation for each drill was about 80 ft. a day, although as much as 130 ft. was done occasionally. Ten or 12 ordinary steam drills were also used on the work. The rock consisted of hard shale, irregularly stratified, at an angle of about 45°. Considerable rock slides occurred on the west side of the cut, which necessitated a much larger quantity of concrete for the dock wall on that side, also the use of rock bolts, to prevent the sliding tendency of this wall. Steam shovels and dump cars were used to remove the blasted rock, which was used for filling, wherever required, on the government property.

The cofferdam was built of timber cribwork, 20 ft. wide, sunk in an average depth of 1 ft. of water, at low tide, and built to the elevation of 3 ft. above high tide; a layer of concrete was deposited along the bottom of the outer face and this face was sheathed with plank. The floor and walls of the dock are built of concrete, the mixture being 1-3-5. All exposed faces are finished with a fine concrete of 1-2-4 mixture for a thickness of 6 in. The concrete for the walls and the floor was cast in alternate sections of approximately 30 ft., with expansion joints. All the cement used was subjected to a laboratory test; apart from other requirements the tensile strength was required to be 600 lb. a sq. in. after 27 days immersion, for neat briquettes, and 275 lb. a sq. in. for 1-3 mixture.

The steps at the top of the walls are built of granite, with treads and risers of 12 in.; the altars are 2½ ft. wide and con-

sist of granite 12 in. thick, tailing 9 in. into the concrete. The caisson stops of both entrances and all culvert openings are built of granite. The floor is 5 ft. thick and finished level from end to end; the sides slope down 6 in. to the side gutters. The floor is provided with three strips of granite slabs, 18 in. thick, intended to receive the cast iron keel and bilge blocks. The middle strip is 10 ft. wide and level; the side strips are 9 ft. wide. In order to prevent the possibility of hydrostatic pressure under the floor and behind the side walls, a system of drains is provided, that will take the seepage water to the sumps. There are 12 stairways from the top of the walls to the floor of the dock, two at each end of the two compartments and two half-way between the ends of each compartment. Four timber slides, built of granite slabs, 18 in. thick, are provided alongside the last set of stairways. There are also 8 ladders, 4 on each side of the dock, that may be used to reach the floor. These are built with galvanized iron gas pipe, and set in recesses in the walls. The coping of the walls stands at elevation +25, or 7 ft. above high tide. They are provided with the ordinary cast iron bollards, set in concrete blocks, 60 ft. apart. There

ters. These are made of cast steel and bored to receive bronze bushings. The forged steel spindles, 4 in. in diameter, are also provided with bronze sleeves. The cast iron casings, containing the rollers, are set in the concrete altars, on each side of the caisson berth and chamber. At an elevation of 15¾ ft. above the sill of the dock the rolling caisson is provided with 6 culverts, 42 in. in diameter, closed by sluice valves that are operated from the upper deck by a 15 h.p. electric motor, driving a longitudinal shaft provided with the necessary gearing; and, by means of clutches, any one or all of the valves may be worked. The culverts are used for flooding the dock. The caisson is divided horizontally by a water-tight deck at the elevation of 23½ ft. above the bottom, forming the ballast and tidal chambers. As the tide rises the sea water comes on this deck through valves in the outer face of the caisson, which are kept constantly open during the summer to prevent the caisson from floating. A sufficient quantity of ballast is provided, so that the total weight of the structure resting on the rollers is approximately 150 tons. During the winter, when the dock is not in operation, the lower or ballast chamber of the caisson is filled with water,



Champlain Drydock, Lauzon, Que.

are 9 electrically driven capstans with 15 h.p. motors, 4 on each side of the dock and one at the head.

The keel blocks are each built of three pieces of castings; the middle piece being wedge shaped so that it may be knocked out and the block removed from under a ship, when in the way of repair work; the upper part of the top piece of casting is provided with a piece of white oak tenoned into the casting. All rubbing faces are planed true and smooth. The keel blocks are 4 ft. 4 in. long and 2¼ ft. high. On top of these are placed temporary hard wood timber blocks to obtain the required height above the floor. It had been intended to build bilge blocks, so arranged as to slide under the bilge of vessels. However, this was objected to by the British Admiralty, which insists on having all blocks made of the same pattern, so as to enable building a bed that will conform to the bottom of the vessel.

**Caissons.**—The outer entrance is closed by a rolling caisson built of steel and operated by an electric motor of 125 h.p.; the bottom is provided with two heavy scantlings of steel, resting on flanged rollers, 3 ft. in diameter, placed at 8 ft. cen-

which is kept from freezing by a constant jet of steam. The tidal chamber is then kept dry by closing the valves. The caisson is closed and opened with heavy chains, supported on altars on each side of the caisson recess, and passing over pulleys worked by worm gears connected with the motor. The top of the caisson is provided with a folding bridge for light traffic across the dock; as soon as the caisson starts to open, the apron and railings of the bridge are automatically lowered to allow them to pass under the flooring over the caisson recess. The middle entrance of the dock is closed by an ordinary floating or ship caisson. When in place, the deck is used as a bridge across the dock. This caisson may also be used to close the outer entrance by placing it immediately outside the rolling caisson, where the necessary stop is provided for it. This, however, will be necessary only in cases of repairs being required to the submerged parts of the rolling caisson. These caissons were built by the Dominion Bridge Company, under a subcontract.

**Boilers and electric power.**—Six water tube boilers of 500 h.p. and two of 300 h.p. furnish steam at 200 lb. pressure to



produce electric current. The boilers are provided with automatic stokers, ash and coal conveyors. The coal is unloaded from cars into a coal crusher run by an electric motor, and elevated to a hopper of 500 tons capacity, over the front of the boilers. Water heaters are provided, but the steam is not superheated; one of the small boilers will be constantly under steam pressure to run the drainage pumps and the lighting dynamo. The electric power consists of 3 direct current turbo-generators of 550 volts, one of 1,500 kilowatts, one of 750 and one of 300 kilowatts. The steam turbines are of the Curtis condensing type, built by the General Electric Co. In the large unit the turbine runs at 3,600 r.p.m. It is geared down to 360 revolutions for the generator; the second is geared from 5,000 to 750; the third is geared from 5,000 to 900 r.p.m. A 100-kilowatt generator driven by a high speed direct connected steam engine, furnishes the current for lighting purposes. This power installation is more than ample for all the machinery connected with the running of the dock proper. It is, however, anticipated that the whole of it will be used when large repairing and shipbuilding shops are in operation together with the pumping of the dock.

gall. a minute. The bronze shafts are connected to the armature shafts of 800 h.p. motors, running at 750 revolutions a minute. The motors are built to stand an overload of 25% for two hours; the total lift will very rarely be more than 33 ft. The suction and discharge pipes are 48 in.; the water is discharged into a chamber provided with non return valves, and to a culvert through the entrance wall outside of the caisson. The main pumps are guaranteed by the builders to deliver 63,000 gall. a minute against a total head of 25 ft. At the time of writing these pumps have not been tested as to efficiency. Two auxiliary pumps, each of 6,000 gall. a minute capacity, driven by electric motors of 125 h.p., will take care of leakages and seepage; these pumps will also help while the dock is being pumped. The pumps were manufactured by the Allis-Chalmers Co.

The time occupied in emptying the dock will vary according to the height of tide when the pumps are started and the size of the vessel being docked. At high water of spring tides the dock contains over 38,000,000 gall. of water. This quantity of water, however, will very rarely, if ever, exist, when pumping is started. It is estimated that the average time for

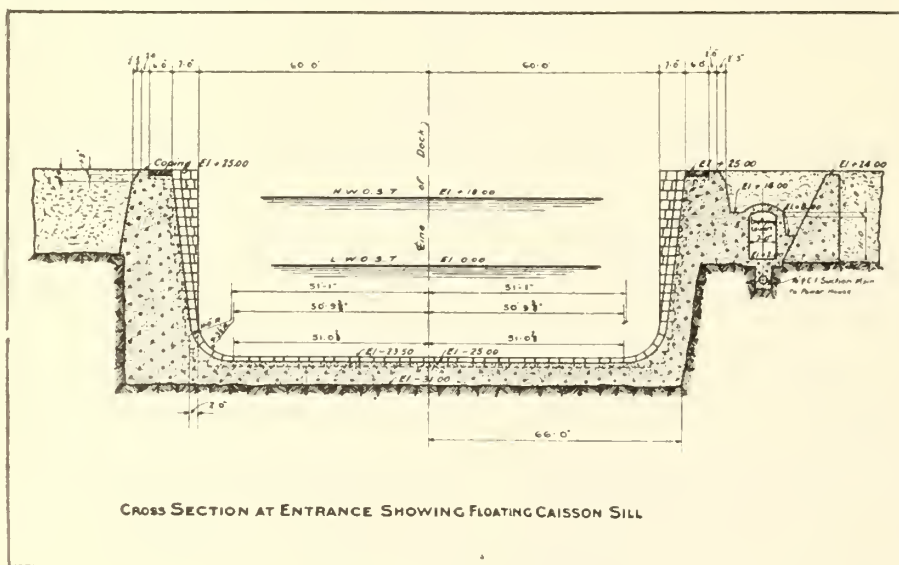
until the water in the dock has reached the center of the culvert opening, to prevent the heavy current that would result from a large opening from disturbing the beds prepared to receive a vessel; further, as the head between the outer and inner levels of water decreases, the valves are fully opened, thus obtaining a large flow. The time required to fill the dock may at times be as much as four hours. The middle entrance is similarly provided with filling culverts as the outer entrance.

In order to obtain sea water by gravity for the purpose of washing the floor of the dock, 6 in. pipes were laid in the concrete side walls of the dock, at an elevation of 2 ft. above low tide; each pipe has 6 hose connections and valves at the face of the walls, where 50 ft. lengths of 2½ in. hose may be attached for the purpose. The water is available within one hour of extreme low tide. Washing the floor is necessary owing to the sediment accumulated while the dock is flooded.

**Guide piers.**—The western guide pier is 400 ft. long and 75 ft. wide; the one on the eastern side is 500 ft. long, 75 ft. wide at the outer and 200 ft. wide at the inner end. Each is built of two lines of 12 x 12 timber cribwork substructure up to 6 ft. above low water, spring tides; the outer face of each line of cribwork is built close, and sheathed vertically with 10 in. hardwood planks. The cribs facing on the channel were sunk in a depth of 30 ft. at low water, spring tides; those on the eastern side of the east pier were sunk on the natural surface of the rock. Those on the western side of the west pier, as well as those for the landing pier, were sunk in a depth of 24 ft. at low tide. From the elevation of 6 ft. above low tide the superstructure consists of mass concrete walls, stepped at the back and filled between with excavated material. The railway spur track from the Intercolonial Ry. will be extended to the end of the western pier. These piers are intended to be used, when necessary, for unloading parts of cargoes from vessels to be docked. The entrance channel has a depth of 30 ft. at low water, spring tides. The landing pier on the west side of the entrance is intended for unloading the dock supply of coal, when delivered by water.

**Buildings.**—The power house is 120 x 100 ft., divided by a brick wall into 2 rooms, 120 x 50 ft., one being the boiler room and the other the generator room; the walls are solid brick, built on concrete foundation; the roof is built of reinforced concrete slabs, supported by steel I-beams, which were procured from the unused steel of the first Quebec bridge. The building is provided with extra large windows with steel frames. Skylights and ventilators are also provided. The floor is concrete, overlaid with red tiles; and the lower part of the interior walls for the generator room is finished with a white tile wainscoting, 6 ft. high. Each room is furnished with water closets and wash basins; the water is obtained from the Lauzon village aqueduct. A special pump in case of fire and the necessary hose are provided. The generator room has an overhead travelling crane of 15 tons capacity. The lifting is done by motor; the travelling gear is worked by hand.

The pump house is 70 x 47 ft., with foundation walls of concrete, over which solid brick walls are built. The floor is at an elevation of 16 ft. below low water, spring tides, or 41 ft. below coping. It is finished with red tiles. The interior walls up to coping level are finished with white tiles. The pump house is also provided with an overhead travelling crane of 10 tons capacity. The chimney is 180 ft.



CROSS SECTION AT ENTRANCE SHOWING FLOATING CAISSON SILL

Champlain Drydock, Lauzon, Que.

This electric installation has been criticized, on the ground that the large expenditure is not justified when electric current is available from private companies in the vicinity of Quebec. When the electric installation was proposed by the writer the idea in view was that no company would be interested or willing to furnish over 3,000 h.p. at any time of the day or night for the short period of about 50 hours in the year, without interfering seriously with their general service. It had also been ascertained by personal visits to five of the principal U.S. Government navy yards that each of them has provided its own electric power for pumping their dry docks. Out of five, only one had installed alternating current machinery. It has developed since that the only electric company that could furnish the power current is not willing to entertain the proposition unless at a much greater cost to the government than the private installation can be run, including the interest on the outlay, which is approximately \$240,000.

**Pumps.**—The dock is emptied by three main pumps of the horizontal centrifugal type, each having a capacity of 63,000

pumping out the dock will be about 2½ hours.

Underground culverts 9 x 10 ft. convey the water from the sumps in each compartment of the dock to the pumps; these culverts are provided with sluice gates, so as to permit of operating each compartment separately. The gates are operated from coping-level by 15 h.p. electric motors. The pressure against the gates may at times be due to a head of 50 ft. of water. From the non-return valve chamber the discharge culvert is 7 x 12 ft.; it is also provided with a sluice gate. The capacity of discharge of this culvert was obtained from Chezy's formula  $V = c \sqrt{r s}$ , being obtained from Kutter's formula. Under a head of 4 in. the capacity will be ample to take care of the output of the pumps when discharging in open air.

The dock is filled through the 6 culverts in the outer caisson, each having a sectional area of 9 sq. ft., also 2 culverts, one in each side wall of a sectional area of 30 ft., the valves of which are operated by electric power. These culverts are made exceptionally large, due to the fact that each may only be partially opened



high, built of brick, with an inner shell of fire brick 100 ft. high. There is an air space of 6 in. between the inner and outer shells; the inside diameter is 11 ft.; the top consists of a cast-iron cap; 4 lighting rods, well grounded, are provided to protect the chimney.

The length of the dock was decided on not merely in anticipation of vessels of, say, 900 ft. or over being employed on the St. Lawrence trade, which may not happen for a great number of years, but owing to the great number of applications received every fall from owners of moderate sized vessels for accommodation during the winter, so that repairs may be done at cheaper rates, and the boats be ready for traffic as soon as navigation opens.

The dock is not yet quite completed: small portions of the floor and walls at the head remain to be finished; the boilers, machinery and pumps, although in working condition, require some final adjustment before they are tested and accepted;—the rolling caisson was operated in Nov., 1917,—the contractors' floating plant was docked and the dock was pumped out. It is fully expected that everything will be entirely completed during July.

The several classes of works in connection with the construction of the dock have been accomplished in a thorough manner both in regard to materials furnished and workmanship; several minor changes which were found to be advantageous were made during construction. The contractors, in all cases, have shown their willingness to give satisfaction in every way irrespective of cost. It must be noted that the works were started shortly before the war and continued without interruption, except in winter, in spite of increased cost of materials and labor. The time required for the construction of the dock is somewhat over four years. It must, however, be remembered that the working season is only six months in each year,—concrete works have to be suspended during the first days of November and cannot be resumed until the beginning of May. The total cost of the works under contract will be approximately \$3,365,000.00. The works have been carried on by the Public Works Department, with E. D. Lafleur as Chief Engineer,—the writer as Superintending Engineer, and J. K. Laflamme as Resident Engineer,—S. Fortin, Steel Structural Engineer, has had the approval of plans submitted for the steel structures. The contractors are M. P. & J. T. Davis, and S. Woodard is their Superintending Engineer.

The foregoing paper was read before the Canadian Society of Civil Engineers in Montreal and Ottawa recently.

**U. S. Atlantic Coast Steamships.**—The Director General of U. S. Railroads, having taken possession and assumed control of steamship companies operating on the Atlantic Coast, has created the Coastwise Advisory Committee, with office at 165 Broadway, N.Y. L. J. Spence has been appointed chairman, with authority to form the committee from the officers of the following lines:—Clyde Steamship Co., Mallory Steamship Co., Merchants & Miners Transportation Co., Ocean Steamship Co., Old Dominion Steamship Co., Southern Pacific Steamship Lines, Southern Steamship Co. The chairman of the committee will report to the Manager, Marine Section, Transportation Division, U. S. Railroad Administration, and will exercise supervision and direction of all coastwise lines under control of the Railroad Administration.

## Canadian Northern Railway Car Ferry for British Columbia.

The car ferry steamship Canora, which the Canadian Northern Ry. is having built to carry passengers and freight cars between Port Mann, B.C., on the south side of the Fraser River, opposite New Westminster, and Patricia Bay, Vancouver Island, from which point the company has rail connection with Victoria, will, it is expected, be launched at Lauzon, Que., on June 10. The following are the leading particulars:—

Length over all .....	308 ft.
Length between perpendiculars .....	294 ft.
Breadth moulded .....	52 ft.
Depth moulded to car deck .....	20½ ft.
Depth moulded to shelter deck .....	28½ ft.
Draft loaded .....	14½ ft.
Displacement at above draft .....	3,400 tons
Speed on service .....	14 miles
Number of cars carried .....	20

The type adopted is somewhat similar to that of the car ferries operating on the Great Lakes, with the exception of a rolling gate which will be fitted at the stern, to close in the space between decks where the railway cars will be carried. This gate will be operated by a steam winch at the fore end of the shelter deck, the gate being carried on girders on this deck. When gate is closed, the stern will be completely closed in between the car deck and shelter deck where the cars are carried.

The vessel is being constructed under the supervision of Lloyd's Register of Shipping and will be classed 100A as a train ferry for coast and river service. The construction is on the transverse framing principle, open bottom type, and the hull is subdivided into 6 main transverse water tight compartments by 5 water tight bulkheads. Water tight doors will be fitted for communication between the engine and boiler spaces and shaft tunnel. Water ballast will be provided for, in peak tanks forward and aft, and in trimming tanks on each side of the engine room.

The cars will be carried on the main, or car, deck, on three lines of tracks, one line of tracks being on the center line of the vessel and one line each side of the center. The spaces below the car deck will be devoted to machinery, crew, stores, holds, coal bunkers and steering compartments.

Above the car deck, at a height of 18 ft., there will be a complete shelter deck, extending the full length and width of the vessel, and, on this deck accommodation for passengers and officers will be provided. This accommodation will include rooms for all officers, large dining saloon, parlor, state rooms for passengers, smoking room, kitchen and pantry, bathroom and lavatories, and a large observation cabin at the forward end. The state rooms will be tastefully finished and have berths, clothes closets, wash basins, etc., in each room. The dining saloon will be finished in oak panelling and will have a large dome over the center, with borrowed lights extending all round dome.

Above this accommodation will be the pilot house, and at the stern a pilot house for use in docking the vessel. As the vessel will have to go astern for a distance on her run, she has been designed with propellers at both ends, also steering gears and rudders, and in connection with this arrangement the navigating lights, engine room telegraphs and steering standards will be arranged to automatically change over to suit this condition.

Steam heating will be provided in all rooms. The ventilation to all spaces will

be provided by natural means, through patent ventilators carried well above the roof of the shelter deck accommodation. The sanitary arrangements will provide for a complete service of fresh, salt and hot water throughout the vessel. The crew spaces will be provided with all necessary accommodation for seamen and firemen, including berths, lockers, etc. There will be a complete installation of fire extinguishing pipes. The electric generators will be placed in the engine room, the main switchboard being located conveniently thereto. Two searchlights will be fitted for use when the vessel is landing at the slips at night.

The main propelling machinery will consist of a 4-cylinder, triple expansion, surface condensing engine, balanced on the Yarrow, Schlick & Tweed system, having cylinder 24, 38, 43 and 43 in., with a stroke of 30 in., and indicating about 2,200 h.p. The engine will be arranged to drive a screw propeller at each end of the vessel, the shafting running the full length of the vessel. Steam will be supplied by 4 Scotch return tubular boilers, 11½ ft. diameter by 11½ ft. long, working at a pressure of 175 lb. a square inch, located in two boiler rooms, one on each side of ship. Each boiler will have 2 corrugated furnaces, 41 in. diameter, and a complete installation of forced draft will be fitted. The total heating surface for the 4 boilers will be 5,500 sq. ft. The surface condenser will be of the triangular type and will have a cooling surface of 2,220 sq. ft. The circulating pump for main condenser will be of the centrifugal type and will be driven by its own engine.

The auxiliary machinery will include 2 vertical boiler feed pumps, each having capacity for working the four boilers, sanitary pump, fresh water pump, bilge pump and ballast pump. There will be an evaporating and distilling plant of sufficient capacity to make up loss in feed water and for drinking and galley supply. Ash ejectors will be fitted in each boiler room. Two steam steering gears will be provided in separate compartments at each end of the vessel, the valves on the gears being operated from pedestals in pilot house, by control shafting.

The auxiliary deck machinery will include a large steam windlass, on the shelter deck, for handling the anchor cables, a windlass also being provided, with drums for handling the wire ropes for mooring. The life saving appliances will be sufficient to meet the requirements of all on board and will be in accordance with the requirements of the Canadian Government inspection. Six lifeboats will be carried on the shelter and boat decks with two davits and gear to each boat.

The vessel was designed by A. Angstrom, as Naval Architect for the C.N.R., and is being built by the Davie Shipbuilding & Repair Co., at Lauzon, Que., Jno. Inglis Co., Toronto, building the main propelling machinery.

The Miami Navigation Co., Ltd., has been incorporated under the Dominion Companies Act, with \$10,000 authorized capital and office at Chatham, Ont., to own and operate steam and other vessels, and to carry on a general navigation and transportation business on the Great Lakes. The incorporators are: T. Donovan, F. C. Granville, T. J. Stockwell, J. W. Harrington and T. M. King, Chatham, Ont.



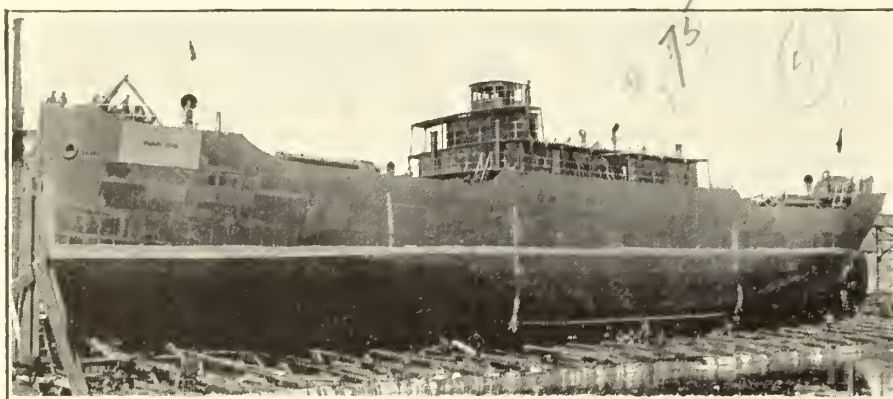
## Shipbuilding at Port Arthur.

The Port Arthur Shipbuilding Co. established a record on April 3, when it launched 2 steamships and laid a keel for a third. A trawler of the Castle class for the Naval Service Department was launched at 11 a.m., followed at noon by the launching of the steel cargo steamship War Isis, 3,400 tons d.w., for the British Government. Immediately after the launching of the War Isis, the keel for a sister ship, the War Heather, was laid down on the same berth.

The War Isis is a single deck, bulk cargo freighter of the following dimensions: Length over all, 261 ft.; moulded breadth, 43½ ft.; moulded depth, 22 ft. 11½ in.; gross tonnage, 2,240; displace-

ment, with 20 ft. draft, approximately 4,800 tons. She is built on the transverse system, inner bottoms throughout, with 2 large cargo holds, each fitted with 2 hatches. This ship represents the full canal size, standard type, being built to the Imperial Munitions Board order. The cargo will be handled by 4 steel derrick

mess rooms for the deck and engine crews will be located under the poop deck. The propelling machinery will consist of a triple expansion engine, h.p. 20 in., i.p. 33 in., l.p. 54 x 40 in. stroke, with attached air, bilge and feed pumps. A piston valve will be fitted to the h.p. and balanced, double ported slide valves will be fitted to the i.p. and l.p. cylinders, with an assistant cylinder on the latter. Steam will be supplied by 2 Scotch boilers 14½ ft. diameter x 11 ft. long, with a working pressure of 190 lb., and developing about 1,200 i.h.p. The steam steering gear will be located on the main deck aft of the engine casing. The propelling machinery, boilers, and a very considerable portion



Steel Steamship War Isis, Just Before Launching at Port Arthur, Ont., Apr. 3, 1918.

of the auxiliary machinery were built in the company's shops.

The Port Arthur Shipbuilding Co.'s programme for this season includes 5 full canal size, ocean going freight steamships, similar to the War Isis, and 10 trawlers of the Castle class. At present 6 vessels are under construction.



Shipbuilding at Port Arthur, Ont.

This illustration shows, from left to right, the steel cargo steamship War Isis, building for the British Government, and the trawler Tr. 5, for the Naval Service Department, both of which were launched April 3. At the right hand side is shown the keel for a sister ship to the War Isis, and in the right background, another smaller ship, War Osiris, also under construction.

masts, equipped with 2 booms each, served by 7 x 12 reversible double drum steam winches. The bridge erection will be located amidships, enclosing the engine and boiler casings, the surrounding spaces on the main deck being available for the stowage of cargo or coal. On the bridge deck will be accommodation for the officers, engineers, wireless operators and gun crew. The saloon, galley, pantry and wireless room will also be located on this deck. The captain's quarters and chart room will be located on the boat deck, with the pilot house and flying bridge above. The hospital and quarters for boatswain and carpenter will be located in the forecabin. Separate quarters and

Victoria Harbor Works.—Sir James Loughheed stated in the Senate, May 1, that five tenders were received for the construction of the breakwater and wharves at the outer harbor at Victoria, the contract for the breakwater being awarded to Sir John Jackson (Canada), Ltd., for \$1,797,801.88, schedule rates; and for the wharves to Grant, Smith & Co. and McDonnell, Ltd., for \$2,244,745.15, schedule rates. The total cost of the works, not including sheds, is: on the breakwater, \$2,206,036.02; and on the wharves, \$2,421,830, of which \$23,760, including drawback of \$7,040, is held in abeyance. The total paid to May 1, is \$4,604,106.02.

## Water Ballast Favored for Ocean Going Vessels.

So persistent has been the claim advanced by importers of mineral commodities that these commodities occupy no cargo space—only that usually given over to ballast—that the United States Shipping Board committee on mineral imports and exports decided to make a thorough investigation of the subject. F. W. Paine, one of the committee's experts, was assigned to the work and has submitted a report which shows that the proportion of ocean tonnage using water ballast is now so great as to render negligible the claim that this space is available for the carrying of minerals. He says:—

"Double bottom ballast tanks enable ships to carry a weight of water equal to about one sixth, in most modern ships one quarter, of their cargo carrying capacity. This water is held rigid, and acts as solid ballast. Deep tanks, peak tanks, etc., are other forms in use additional to the bottom tanks, and enable ships to carry a weight of water equal to one fourth to one third of cargo capacity. In consequence of the continual development of the water ballast tank construction ever since the sixties, there are now very few ships afloat that require stone, sand, or other solid ballast. The rare exceptions are very old ships, especially a few old Great Lakes vessels that are now on the ocean.

"This development was a most important one, as trade conditions before the war were such that from one fourth to one half of the voyages made by cargo ships, especially those not belonging to standard steamship lines, had to be made without cargo. Great numbers of ships continually sailed to all parts of the world with no ballast except water.

"If this were the condition in normal or peace times, it is still more the case today. In these days, when the number of ships is inadequate, it is exceedingly

fortunate that there is no necessity for ships to be delayed loading and unloading ballast, when a voyage must be made without cargo, as happens so often. No more is it necessary for ships to be delayed in loading and unloading cargoes of goods, such as luxuries or non essential commodities. Besides loading delays the added weight makes the ship sink low in the water and makes travel slower, especially in calm weather. Also this greater amount of hull under water is a larger target for German torpedoes."

The B.C. Trading & Transportation Co., Ltd., Kamloops, has changed its name to Sawmills Machinery Co., Ltd.



# The Preservation of Hulls, A Problem of Wooden Shipbuilding.

By Bror. L. Grondal, Assistant Professor, College of Forestry, University of Washington, Seattle.

A problem that offers more difficulties from the standpoint of wood preservation than the protection of the interior framing of wooden vessels, is the protection of the outer sheathing or planking of the hulls. The salt waters of the ocean, harbor a number of wood-destroying organisms that in some places make short work of unprotected wooden bottoms. These organisms are the molluscs known as ship-worms, commonly called xylotrya and teredo, and a number of crustaceans, the most destructive being the common limnoria. In addition to the problem of preventing the attacks of these, some means must be provided for preventing the accumulation of barnacles and seaweed, which materially affect the speed of a vessel. One of the earliest expedients adopted for this purpose was the charring of ships' bottoms. The planking was periodically charred to a depth of about a quarter of an inch with a slow fire. This was effective for only a few months, when it became necessary to again char the hull. Such charring resulted in the partial destructive distillation of the outermost portion of the wood, liberating small amounts of wood tar containing a high percentage of phenoloid bodies, which are highly distasteful to ship-worms. As these are, however, soluble in water, they soon leached out, leaving the wood unprotected. The charred surface also prevented the accumulation of barnacles, for as soon as a free-swimming larva attempted to attach itself to the charred surface, the charcoal, being very friable, would break loose, releasing the barnacle. The destruction of the wood, due to repeated charrings, makes this method impracticable.

Later the sheathing of bottoms with lead was attempted with only partial success, as it developed that the lead corroded very rapidly around the fastenings, and the adhesion of barnacles was not prevented. Iron sheathings were also found to be impracticable, due to rapid corrosion, though iron sheathings in the form of flat-headed nails driven so closely together that the subsequent rusting forming a complete coating of iron oxide are still used to a limited extent, both for the protection of small ships' bottoms and piling exposed to the attacks of ship-worms. Zinc sheathing also failed to give satisfactory results, corroding very rapidly, possibly due to the galvanic action between the zinc and the fastenings used in attaching it to the hull. Copper and brass sheathings have proved to be by a considerable margin the best protection for ships' bottoms. Brass composed of from 50 to 60% of copper, alloyed with zinc, has given very satisfactory results. If the alloy is not complete, however, such sheathings will disintegrate very rapidly, as corrosion will spread very rapidly from the small nodules of zinc in the metal. Cold rolled furnace copper is the best of metal sheathings for the protection of ships' bottoms. As ship-worms cannot bore through metal, copper, of course, accomplishes its purpose in this regard. The most valuable property of copper, however, lies in the slow and very uniform corrosion of this metal. Though barnacles readily attach themselves to the metallic surface, they do not have time to reach their full development before the slow wasting of the copper loosens their attachment to the copper, compelling them to drop off. As a general thing, 20 to 30 gauge sheet copper is

used. The amount of copper sheathing per gross ton, of course, varies widely with the shape and size of the hull of the vessel, small boats requiring as much as 60 lb. of copper per gross ton.

At present, the high cost of copper prohibits the use of this material in the sheathing of ships. The life of copper sheathing is at the best only from five to seven years, when it is necessary to renew the sheathing. The cost of copper has led to the development of substitutes in the form of paints, which are applied directly to the surface of the wood. There are a number of different brands of paints for this purpose in the market. Some are positively useless, others accomplish their object to a satisfactory degree. The composition of such paint is invariably supposed to be a profound secret—and some of the secrets are truly laughable. One method of preventing the attacks of ship-worms, devised by one of the Anthony Comstocks of New York city in the early part of the nineteenth century (his name has been forgotten), consisted in pitching the hull with hot coal tar pitch, and before the pitch had hardened liberally sprinkling the surface with Scotch snuff. He reasoned that as tobacco was such iniquitous stuff, the ship-worms would surely be discouraged.

Some "copper" paints, are, however, quite effective. The writer will not attempt to say which is the most effective. As the pigment of these paints is invariably copper oxide, they commonly are spoken of as "copper" paints. The nature of the vehicle varies widely, from linseed oil with a high percentage of linseed driers, to soya bean oil and kerosene. "Princess metallic" is very commonly used. Viewing the matter from an impartial standpoint, the writer feels that there is a tremendous waste of good copper oxide in marine paints. Whiting could be made to do very well, for the toxicity necessary to prevent the ingress of ship-worms can readily be supplied through the addition of small amounts of mercuric chloride, or such alkaloids as acridene. Aside from the toxic effect of the paint upon wood-borers, the basic principle in the manufacture of a successful "copper" paint seems to lie in the compounding of the paint in such a manner that the surface will slowly waste away, preventing the adhesion of barnacles and the seaweed which these will gather, and at the same time adhering properly to the wood. From the foregoing it becomes apparent why creosoting or the application of coal tar is not effective in the treatment of ships' bottoms. Either will prevent the ingress of ship-worms, but anyone who is familiar with the use of creosoted piling for dock construction will recall that such piling quickly becomes covered with a healthy growth of barnacles.

"Copper" paints, like all other paints, should only be applied to dry surfaces. In painting scows, tugs and other bottoms, the first or priming coat, which is applied after the seams have been properly caulked, is thinned with refined coal tar creosote or benzine in equal proportions, or one gallon of the paint to one gallon of the thinner. Care must be taken to cover the surface of the planking thoroughly before the painting is continued with a second coat. The caulking seams are then filled with a mixture of Portland cement and sand, in the proportions of about three parts of cement to one part

of sand. Some shipbuilding concerns make a special point of the use of only pure white silica sand in this connection, but the writer feels that this is unnecessary. Care should be taken to use fine sand, however, to enable the smooth troweling of the seam. The mortar is not allowed to completely fill the caulking seam, the point of the trowel being used to remove surplus mortar. When the mortar has thoroughly set, after the course of several days, surplus mortar that has sloped upon the surface of the planking is removed with coarse sandpaper. The hull is then ready for the second coat. While cement adheres very strongly to the caulking seam, its use is objectionable when it becomes necessary to re-caulk a seam, due to the difficulty of removing it, as in time it becomes almost flint hard.

The writer has experimented with mastic for this purpose, composed of paving pitch, asphalt and wood pulp, thinned with engine distillate until it acquires a workable consistency, with seemingly favorable results. A definite statement cannot, however, be made at this time. Some ship owners require the first coat to be unthinned copper paint, though the necessity for this is disputed by some experienced shipbuilders.

After the seams have been cemented, the second coat of copper paint, full strength, is applied. As these paints have approximately the consistency of ordinary paint, though in some cases they may be a little thicker, no difficulty is experienced in finding painters who are capable of doing the work.

After the second coat has dried for at least two days, the application of a third coat is necessary. As an example of the antique ideas that have survived since the earlier days of our shipbuilding industry, the writer regretfully cites the following requirement of one "expert" inspector who is supervising the construction of vessels for the United States Emergency Fleet Corporation at one of the Pacific Coast yards. This inspector has ruled that the third or final coat of paint shall not be applied to the hull until at least the day before the launching of the vessel; preferably the day on which the vessel is to be launched. The effect of such a procedure is, of course, bad in every respect, as the wet paint is washed from the surface of the wood, making the third coat quite useless. Rational practice demands that the final coat be given at least three days before the launching of the vessel, allowing at least time enough for the paint to set before the ship goes down the launching ways.

Formerly all copper paint was applied to the planking by the brush method. This method is almost entirely used in the smaller yards. On the Pacific Coast, however, the larger yards are using paint "guns," or sprayers, which are operated by compressed air. With this method the paint is quickly and evenly applied to the surface of the wood, with a considerable saving in the labor cost of painting. Five good painters, with brushes, will cover the hull of a typical vessel about 250 ft. long in one day. When the "gun" is used, two men will cover the same vessel in one day. Though some paint is, of course, lost when the "gun" is used—about 15 gallons in giving the vessel three coats—this expense is more than compensated for by the saving in labor costs and the added convenience of the method. In spite of the fact that the paint is applied more



evenly and thoroughly with the "gun," the same government inspector mentioned above has ruled against its use, demanding the painting by brush as in the "good old days."

In barrel lots, the cost of copper paint averages about \$2.20 a gallon, and when used without thinning for three coats, one gallon will cover about one and one-fifth squares. By thinning the first coat with an equal quantity of thinner, one gallon of paint will cover approximately two squares.

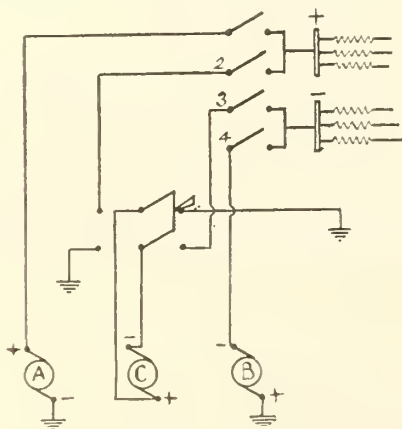
Sea going vessels that have been properly painted with "copper" paints must be repainted at intervals varying from six to eight months. One company operating a large fleet of scows on Puget Sound reports the repainting of scow bottoms at intervals of 12 months. The first repainting must be done about 6 months after the vessel has been placed in service, as spots that are covered by the propping used in supporting the vessel during construction receive only one coat, which is applied immediately before launching after the vessel is safely resting in the launching cradle.

In conclusion, the writer wishes to emphasize the necessity of allowing each coat of paint to dry thoroughly before the next is applied. When properly applied, copper paint is an excellent substitute for copper sheathing, and where it is convenient to dock the vessel at intervals of from 6 to 8 months, will give even superior service.

### Motor Generator and Switch Arrangement C.P.R. Telegraphs.

W. J. Camp, Assistant Manager, C.P.R. Telegraphs, Montreal, forwards a sketch of the motor-generator and switch arrangement designed by him and which is in use at the company's large terminal offices.

Referring to the diagram, it will be noted that when the single-pole single-throw switches 1 and 4 are closed, positive and negative machines are connected respectively to the positive and negative bus-bars.



When it is desired to run machine C to relieve machine A, the double-pole double-throw switch is thrown to the left. Then, closing switch 2 places machines A and C in multiple to the bus-bar. After machine C has reached running speed switch 1 may be opened, thereby maintaining an uninterrupted application of positive potential to the multiplex sets while one machine is started and another stopped.

Machine C can, in like manner, be used to supply negative potential in place of machine B, by throwing the double-pole double-throw switch to the right.

This arrangement of switches provides against short-circuits between generators; the only precaution required being that the single-pole switch of the generator to be stopped must be opened before the switch in the motor circuit of that machine is opened.—Telegraph Age.

### Telegraph and Telephone Lines' Estimates for 1918-1919.

The Public Works Department estimates, for the year ending Mar. 31, 1919, contain, among others, the following items:—

NOVA SCOTIA.	
Cape Breton telegraph system, renewal of poles between Eskasoni and East Bay .....	\$ 700.00
PRINCE EDWARD ISLAND.	
Half cost of reconstruction of telegraph lines jointly owned by Anglo-American Telegraph Co. and Dominion Government .....	17,000.00
QUEBEC.	
Improvements to repair service .....	3,000.00
SASKATCHEWAN AND ALBERTA.	
Moose Jaw, Wood Mountain telegraph line, renewal of poles, to complete Peace River line, office and dwelling at Grande Prairie .....	4,000.00
Peace River line, office and dwelling at Dunvegan .....	4,000.00
Peace River line, woods clearance at Edmonton to Peace River .....	5,000.00
Peace River line, completion of pole renewals between Edmonton and Athabasca .....	570.00
Peace River line, repairs and renewals between Spirit River and Pouce Coupe, and between Athabasca and Grouard .....	1,545.00
Qu'Appelle, Edmonton line, shifting wire to pole line of C.N.R. between Humboldt and Warman, Sask. ....	1,000.00
Repairs and improvements to office buildings .....	2,750.00
Shifting line to roadways .....	5,500.00
BRITISH COLUMBIA.	
Mainland telegraph and telephone lines, general repairs and improvements ..	3,300.00
Mainland telephone line, extensions in Kootenay District .....	4,000.00

The following items are chargeable to collection of revenue:—

Telegraph and Telephone Lines.	
Prince Edward Island and mainland Land and cable telegraph lines, Lower St. Lawrence and Maritime Provinces, including working expenses of vessels required for cable service ..	\$7,000.00
Saskatchewan ..	202,000.00
Alberta ..	53,000.00
British Columbia, mainland ..	79,000.00
British Columbia, Vancouver Island district ..	60,000.00
Yukon system (Ashcroft-Dawson)...	100,000.00
Telegraph and telephone service generally ..	250,000.00
	10,000.00
	\$766,000.00

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

L. C. Chase & Co., car upholstery, Boston, Mass.—Frank Hopewell, head of the firm, died, Apr. 25, aged 61. He had been associated with the company since 1881.

The Northern Electric Co., Montreal, has established a department for the sale of water sterilizing equipment, on the ultra violet ray system, in charge of S. H. Opdyke.

Commercial Acetylene Supply Co., Inc.

Commercial Acetylene Welding Co., Inc., New York, has changed its name to Commercial Acetylene Supply Co., Inc. H. H. Wood, 18 Toronto St., Toronto, is Canadian Manager.

Robert W. Hunt & Co., Ltd., Montreal, has received an order from the Dominion Government to inspect the 100,000 tons of steel rails which it has ordered from the Dominion Iron & Steel Co.

Independent Pneumatic Tool Co.—A reorganization has been effected of the Independent Pneumatic Tool Co., a New Jersey corporation, and the Aurora Automatic Machinery Co., which was incorporated in Delaware. Both companies were owned by the same interests, the Independent Pneumatic Tool Co. being the selling division for the Thor pneumatic and electric tools, and the Aurora Automatic Machinery Co. being the manufacturing department. The latter company also manufactures and sells Thor motorcycles and gasoline engines. The combining of the two companies under one corporate name is for convenience in handling business. Under the reorganization plans the company is known as the Independent Pneumatic Tool Co., incorporated in Delaware for \$3,000,000. The directors are:—J. P. Hopkins, Chairman; J. D. Hurley, President; R. S. Cooper, Vice President; Fletcher W. Buchanan, Secretary, and E. G. Gustafson, Treasurer, J. J. McCarthy, W. A. Libkeman, L. S. Florsheim, R. T. Scott, and A. Gatzert. The general offices are in the Thor Building, 1307 South Michigan Boulevard, Chicago. Branches are maintained in New York, N.Y.; Pittsburg, Pa.; Detroit, Mich.; Birmingham, Ala.; San Francisco, Cal.; Toronto and Montreal. The pneumatic and electric tool factory is located in Aurora, Ill., and the motorcycles and gasoline engine plant is at 361 West Superior St., Chicago.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 305 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Canadian Society of Civil Engineers—F. S. Keith, 176 Mansfield St., Montreal.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Quebec.

Railway Association for National Defence—W. M. Neal, Montreal.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.





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Head Office of the Company, in the City of  
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DWIGHT W. PARDEE,  
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Hamilton, May 4th, 1918.

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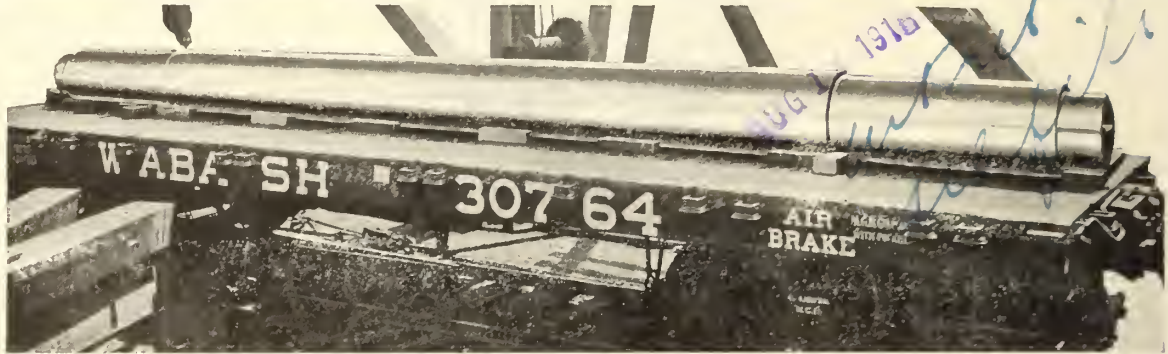
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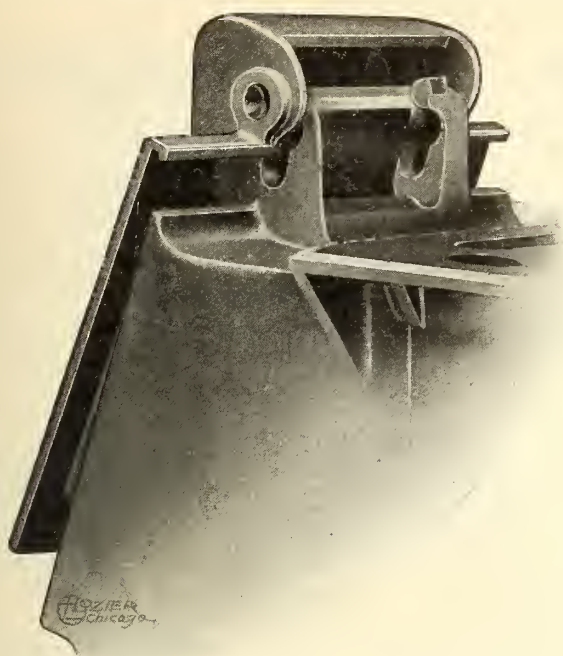
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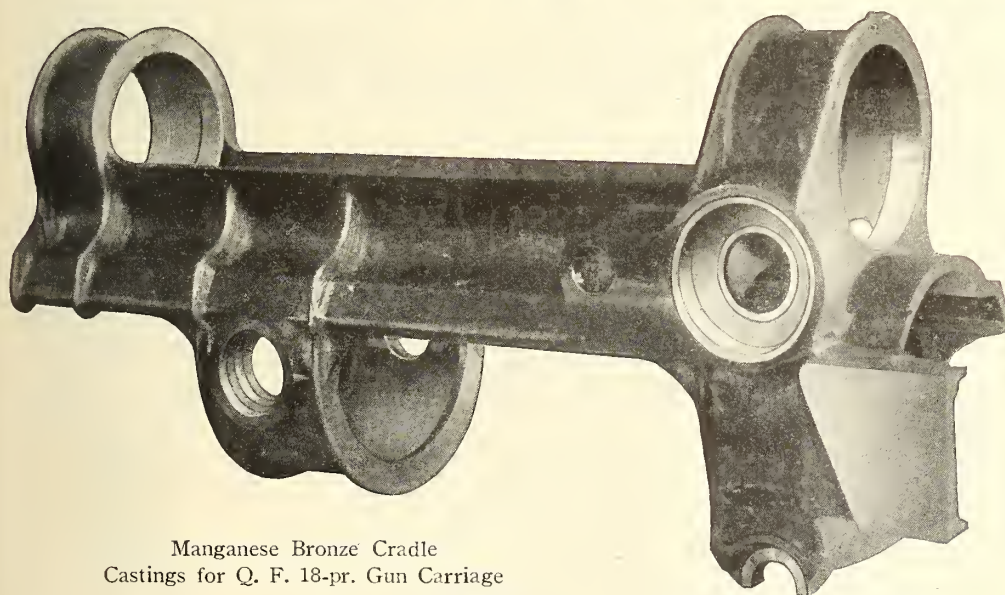
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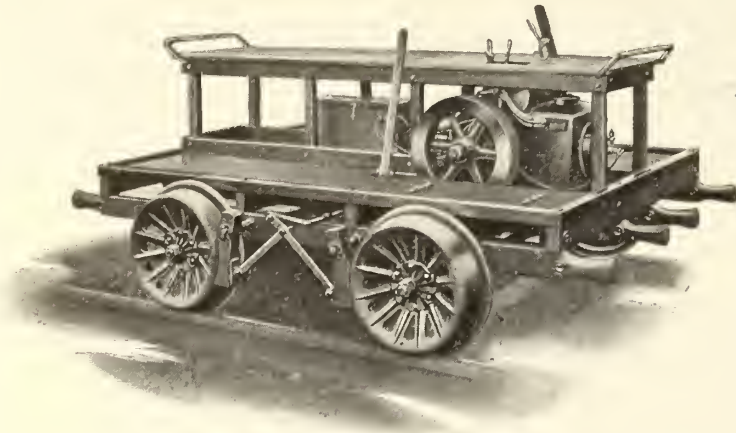
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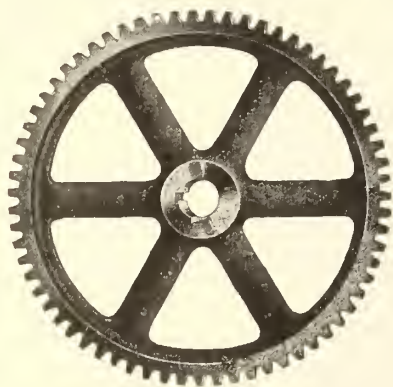


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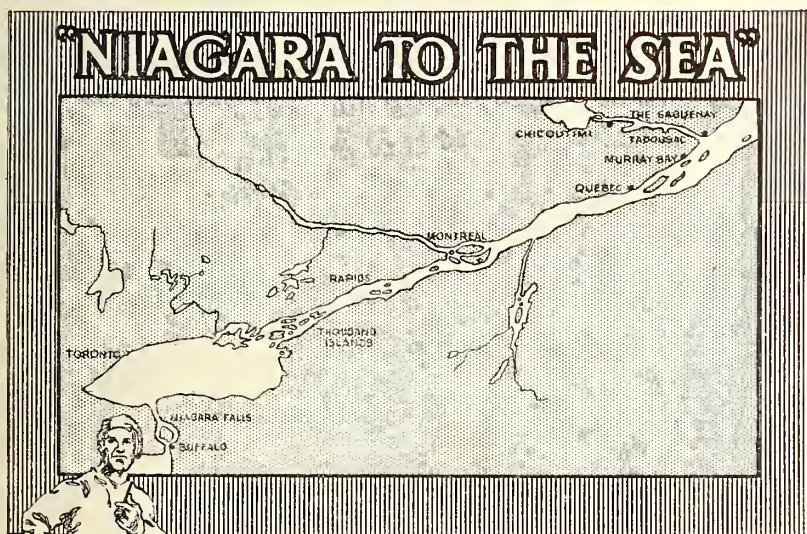
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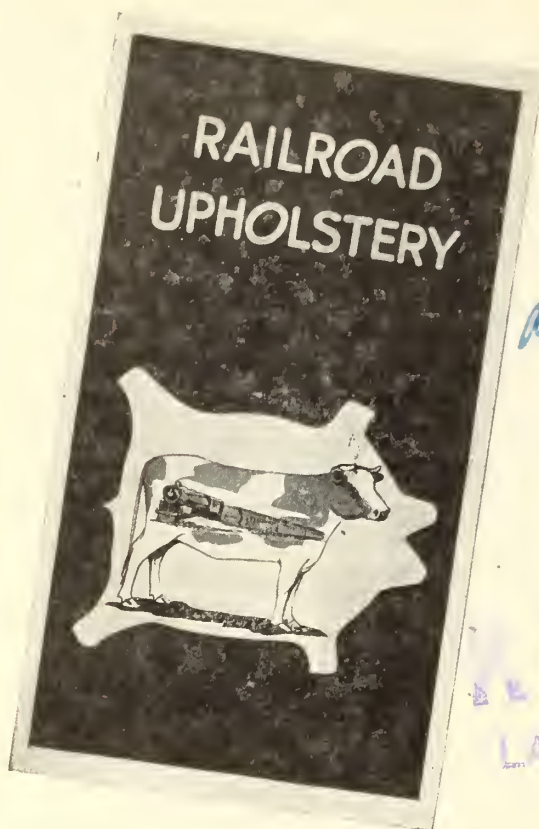
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### What D'ye Know?"

To-day it's a battle of wits—and brains win. Muscle and brawn don't count so much as they used to. The great question now is "What do you know?" It draws the line between failure and success, between a poor job and a good one.

What do you know? Have you special ability? Could you "make good" in a big job right now?

For 25 years the International Correspondence Schools have been training men for better work and bigger salaries. They can train YOU, no matter where you live, what hours you work, or how little your education. Mark and mail the coupon and find out—it won't obligate you in the least.

TEAR OUT HERE

### INTERNATIONAL CORRESPONDENCE SCHOOLS

745 St. Catherine St., W., Montreal, Can.

Explain fully about your Course in the subject marked X:

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| <input type="checkbox"/> ARCHITECTURE           | <input type="checkbox"/> Rv. Mail Service | <input type="checkbox"/> SPANISH       |
| <input type="checkbox"/> Architectural Drafting | <input type="checkbox"/> AUTOMOBILES      | <input type="checkbox"/> Italian       |

Name \_\_\_\_\_

Address \_\_\_\_\_



Actual photographs taken on the Chicago, Rock Island & Pacific R.R. with no other light but the Pyle-National Electric Headlight. The station seen is a half mile from the engine.

THIS is the kind of light produced by 40,000 Pyle-National Electric Headlights. Over 4,000 of these lights are in service in Canada. Our new "E" Type Turbo Generating Set will positively show the lowest evaporation of any turbine that has ever been developed for this service per E.H.P. Lowest operative maintenance cost. Every equipment guaranteed.

## The Pyle-National Co.

CHICAGO



# Consolidated Equipment Co., Limited

**Montreal**

263 St. James Street

**Winnipeg**

McIntyre Block

*Representing :*

BROWN & COMPANY, INC., PITTSBURG, PA.

Staybolt and Engine Bolt Irons.

W. S. KING, CHICAGO, ILL.

Howe Locomotive Bell Ringer.

(MURPHY LINES)

Release Rigging

Murphy's Flexible Roof

Murphy's Inside Metal Roof

All-Steel Car Ends

National Car Door.

THE MACOO COMPANY, NEW YORK CITY

Chicago Union Renewable Fuses.

NATHAN MANUFACTURING COMPANY,

NEW YORK CITY

Locomotive Lubricators, Injectors, Safety  
Valves, Water Gauges, etc.

ROBERTS & SCHAEFER COMPANY, CHICAGO, ILL.

Round-House Sand Dryers.

RIVET CUTTING GUN COMPANY, CINCINNATI, O.

Rivet Cutting Gun and Slag Cutting Gun.

STANDARD PAINT & VARNISH CO., LIMITED

WINDSOR, ONT.

Bitumen Superlastic Paint.

SPENCER OTIS COMPANY, CHICAGO, ILL.

"Bako" Asphalt Product for preserving and  
insulating wooden cars.

TUCO PRODUCTS CORPORATION

NEW YORK CITY

Passenger Car Specialties:

Trap Doors, Insulation, Screens, Composi-  
tion Roofing Material.

ULCO OIL COMPANY, WINDSOR, ONT.

Cutting Compound.

R. W. YOUNG MFG. COMPANY, CHICAGO, ILL.

Balanced Electric Turntable Tractors.

## We Buy for Cash

### Used Machinery, Metals of All Kinds, Shafting and Rails

We gather together the various materials and products that have served their purpose in the economic machine and start them over again in new forms through this machine.

**Forward us a list of what you have and obtain our prices.  
BECAUSE WE BUY FOR CASH WE CAN SELL AT  
ATTRACTIVE PRICES.**

Shafting, pulleys, hangers, rails, steel plates, locomotives, boilers, cars, engines, anchors, hoists, motors, generators, transformers, cranes, steam shovels.

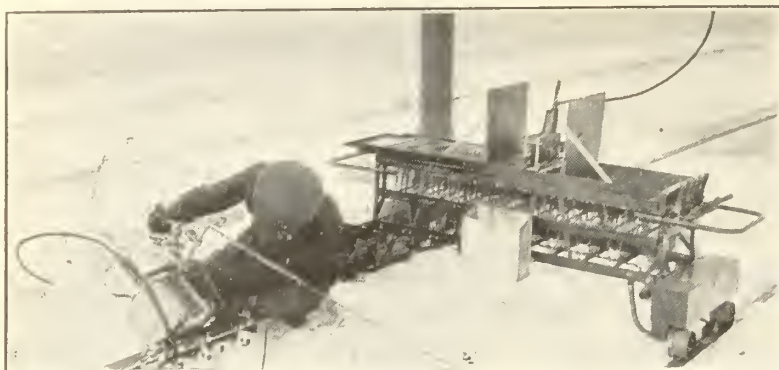
*We invite you to test our Service and Prices*

## DOMINION IRON & WRECKING CO., LIMITED

**General Offices: Transportation Building, MONTREAL**



# Portable Bonding Outfit



for welding standard  
ERICO Rail Bonds.

The rheostat weighs 140  
pounds and the welder  
65 pounds.

No flame or arc strikes  
rail or bond.

*Write for price.*

**The Electric Railway Improvement Company - Cleveland**

# Canada Iron Foundries, Limited

Chilled Tread Cast Iron Car Wheels for All Services  
Cast Iron Water, Gas and Culvert Pipe,  
Flanged Pipe and Specials  
Railway Castings

HEAD OFFICE:

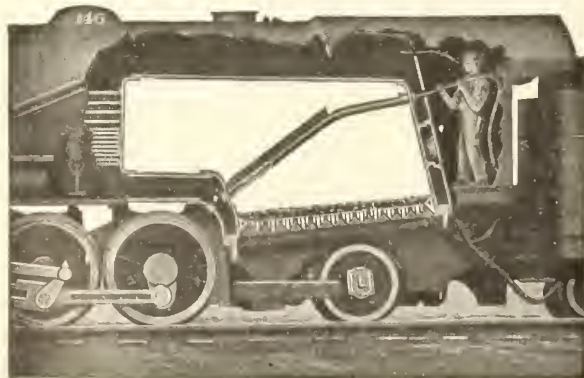
**Mark Fisher Building**

- - -

**Montreal**



Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

## Babcock and Wilcox, Limited

HEAD OFFICE FOR CANADA  
ST. HENRY, MONTREAL

TORONTO OFFICE,  
TRADERS BANK BUILDING



# Jas. W. Pyke & Company, Limited

## Iron, Steel and Metal Merchants

Locomotive, Driving, Engine and Tender Truck Axles, Passenger, Freight, and Electric Tram Car Axles—To Standard or Railway's own Specification.

Staybolt and Engine Bolt Iron—Quality and Service Unexcelled.

Steel Plates—Firebox, Flange and Tank Qualities.

Structural Shapes—Beams, Channels, Angles, Tees, Zees, etc.

Steel Billets and Forgings—of all descriptions.

Locomotive Boiler and Superheater Tubes—Seamless and Lapwelded.

We solicit your enquiries when in the market for any of the above material.


OFFICE: Commercial Union Building,  
232 St. James Street,

**Montreal**

**Canadian  
Government  
Railways**

### NEARING THE MILLION MARK

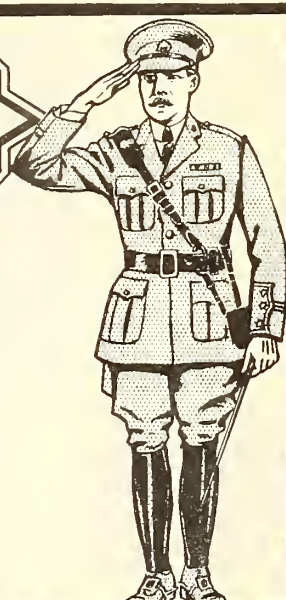
**Canadian  
Government  
Railways**



**OVER  
700,000  
SOLDIER LADS  
HAVE TRAVELLED THIS  
ROUTE WITHOUT MISHAP**

**THROUGH EXPRESS  
TRAINS**

WINNIPEG	:	TORONTO
WINNIPEG	:	QUEBEC
MONTREAL	:	HALIFAX
HALIFAX	:	SYDNEY
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H.H. MELANSON, PASSENGER TRAFFIC MGR. MONCTON, N.B.

## ALGOMA STEEL CORPORATION LIMITED

**S**TEEL RAILS  
PLICE BARS  
TEEL TIE PLATES

PIG IRON  
BASIC & BESSEMER



**S**TRUCTURAL SHAPES  
TANDARD MERCHANT  
BARS

BLOOMS BILLETS  
& SLABS

SAULT STE. MARIE, ONT. CANADA.



# Marconi Wireless Apparatus

INSTALLED — OPERATED — MAINTAINED

EQUITABLE CONTRACT RELIEVING SHIPOWNERS OF RESPONSIBILITY

Concerning maintenance of the Apparatus—Compliance with Government Regulations—  
Handling of Traffic, Accounting, Etc.

## Marine Switchboards

MADE AND INSTALLED

FOR SHIP LIGHTING AND POWER DISTRIBUTION

*Communicate Your Requirements to :*

## The Marconi Wireless Telegraph Company of Canada, Limited

*Contractors to Canadian and British Governments*

VANCOUVER  
HALIFAX

173 William Street  
MONTREAL

ST. JOHNS  
NFLD.



## The Star Brass Works

*Largest Exclusive Trolley Wheel Makers in the World.*

**Kalamazoo**

**Michigan**



# Buffalo Brake Beam Company

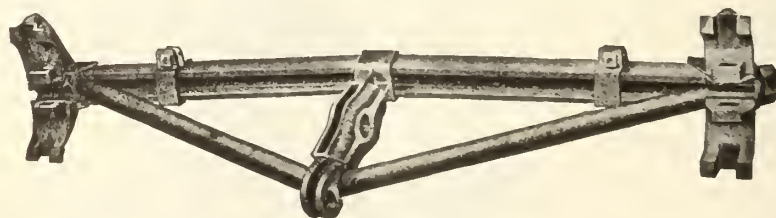
**BUFFALO BEAMS ARE BEST BEAMS**

*Offices :*

NEW YORK  
30 Pine Street

ST. LOUIS  
Syndicate Trust  
Bldg.

MONTREAL  
10 St. Antoine St.



*Works :*  
BUFFALO,  
N.Y.

**Canadian Works : HAMILTON, ONT.**

**Brake Beams for all Classes of Cars, Locomotives and Electric Equipment**



TELEGRAMS : "VICKERS, MONTREAL"  
PHONE : LASALLE 2290

OFFICE AND WORKS  
LONGUE POINTE, MONTREAL

# CANADIAN VICKERS LIMITED

STEAM, ENGINE, BOILER, and ELECTRICAL  
**REPAIRS**

25,000-TON FLOATING DOCK, 600 FEET LONG  
Operated in One or Two Sections

**SHIP, ENGINE and BOILER BUILDERS**

**COMPLETE EQUIPMENT**

Air, Electric, Hydraulic Tools. Electric and Acetylene Welding.

Ship Repair and Fitting-Out Basin Adjoining Works and Montreal Harbour, with Wharf 1000 Feet Long. Deep-Water Berth.

Manufacturers of Cargo Winches, Windlasses, Steam and Hand Steering Gears, under license from standard English makers.

## Dominion Bridge Co., Limited

MONTREAL, P.Q.

*Engineers, Manufacturers and Erectors of*

### STEEL STRUCTURES

Railway and Highway Bridges, Buildings, Turntables, Electric and Hand Power  
Travelling Cranes, Coal and Ore Handling Machinery, Lift Locks and  
Hydraulic Regulating Gates, Transmission Poles and Towers

**Tank and Plate Work of Every Description**  
**FORGINGS**

**Gear Cutting and General Machine Work**  
**MARINE BOILERS AND ENGINES**

Head Office and Works: LACHINE, P.Q., CANADA

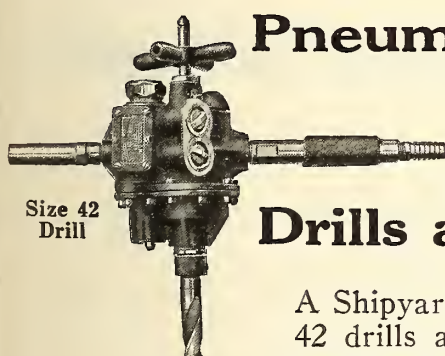
P.O. Address: MONTREAL, P.Q.

Cable Address: "DOMINION"

Branch Office and Works: TORONTO, OTTAWA, WINNIPEG

Sales Offices: MONTREAL, TORONTO, OTTAWA, WINNIPEG, EDMONTON, REGINA, VANCOUVER

*Large Stock of Structural Material at All Works*



**Pneumatic**

**Drills and**

*Thor*

**and Electric**

**Hammers**



A Shipyard or Railroad Shop that does not use one or more Thor size 42 drills and size 60 riveters is not working to full efficiency which every shop should do during these critical times. Let us demonstrate why you should use these two sizes in preference to other sizes and makes.

*Write our nearest office for details of our free trial.*

**Independent Pneumatic Tool Company**

Toronto—32 Front St. West

334 St. James Street, Montreal, Que.

Vancouver—1142 Homer St.



# Dominion Steel Foundry Co., Limited

Hamilton - - Canada

MANUFACTURERS OF

High Grade Steel Castings up to 50,000 lbs.  
Light and Heavy Forgings also Forging  
Billets. Marine and Car Work a specialty.  
Hot Rolled Plates up to 24" wide.

## MACHINISTS FINE TOOLS READY DELIVERIES ALL ASSORTMENTS

Victor Hack Saw Blades.  
Morse and Wilt Drills.  
Little Giant Taps and Dies.  
Oster and Armstrong Adjustable Pipe Stocks and Dies.  
L. S. Starrett and Brown & Sharpe Machinists Fine Tools.  
Simplex Track Jacks.

## RICE LEWIS & SON, Limited

Established 1847

19, VICTORIA STREET, TORONTO

Phone Main 4040

**For the Railway  
Motor Car**

## Columbia Hot Shot Battery



**A Portable Unit Battery**—can be carried from place to place.

**Instantly Put In Service**—but two connections to make—no loose cells to handle.

**No Further Attention Required**—it's reliable, efficient and strongly built.

*Moisture Proof—Made in Many Sizes and Voltages Economical.*

**Canadian National Carbon Co., Limited**  
TORONTO, ONTARIO



# DOMINION IRON & STEEL CO., Limited

Manufacturers of

## BASIC OPEN HEARTH STEEL

Blooms  
Billets  
Bars

Wire Rods  
Wire Nails  
Nail Wire

Etc., Etc., Etc.

SALES OFFICES :

112 St. James St., Montreal

WORKS :

Sydney, Nova Scotia



Car Bolster Spring with Pressed Steel Caps

## Railway Springs

LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.

EQUALIZING, DRAWBAR, BUFFER AND SPIRAL SPRINGS of all kinds.

STREET RAILWAY SPRINGS, from the largest to the smallest.

TRACK TOOLS, RAIL BRACES, TIE PLATES, GUY ANCHORS AND RODS, LOCOMOTIVE SANDERS, CHAIN, Etc.

Manufactured by

### B. J. Coghlin Company, Limited

Montreal, Canada

## The Rail Joint Company of Canada, Limited

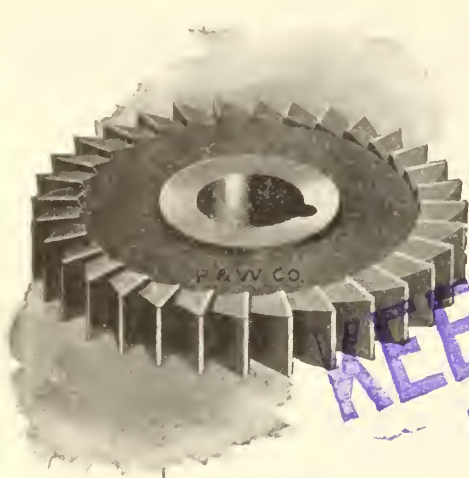
McGill Building, MONTREAL

Makers of Base-Supported and 100% Rail Joints for Standard, Girder and Special Rail Sections. Also Joints for Frogs and Switches, Insulated Rail Joints and Step or Compromise Joints.

PROTECTED BY PATENTS

Grand Prize, San Francisco, 1915





# Milling Cutters

TAPS—DIES—REAMERS—DRILLS

MADE IN CANADA  
SOLD ON MERIT

**Pratt & Whitney Co. of Canada, Ltd.**

DUNDAS, ONTARIO

Montreal

Toronto

Vancouver

Winnipeg

## A Case of Canadian Development

We are the only Canadian manufacturer making Steel Castings from Canadian natural resources, and operating their own ore mines.

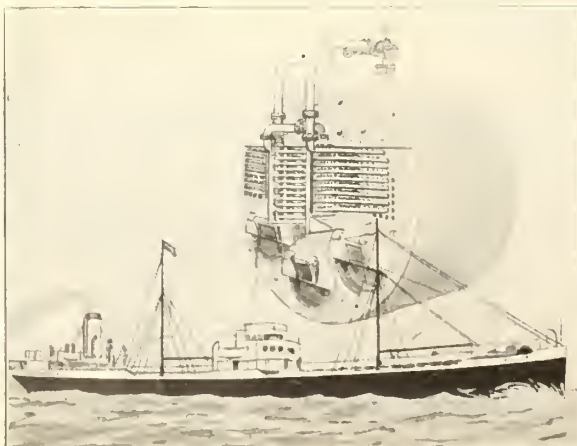
Our recent extensions include large Electric Smelting Furnaces, producing Low Phos Pig Iron.

Steel Car Wheels, Locomotive Driving Wheels, Car Castings of all descriptions. Engine Frames.

*Equipped to handle large orders promptly.*

**Hull Iron & Steel Foundries Limited**  
HULL, QUEBEC

## Superheat is Insurance Behind Your Ship Operation



The big shipping problem now is to get fuel. Cost is not the controlling factor. Later, fuel economy will determine whether or not a ship can justify her operation.

12 to 20 per cent less fuel will give her the same power and speed if her boilers are equipped with high degree superheaters.

She will have a better chance in the race for business; and there will be 12 to 20 per cent less fuel to provide NOW.

It is not necessary to lay her up to get the superheater behind your service.

**Locomotive Superheater Co.**  
MARINE SUPERHEATERS

30 Church Street, New York Peoples Gas Bldg., Chicago



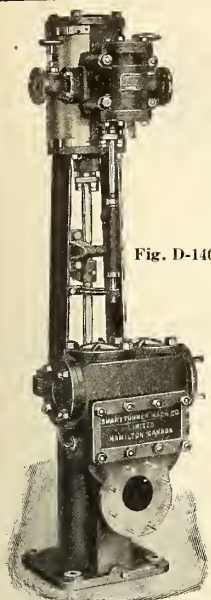


Fig. D-140

## Made-in-Canada Marine Pumps

### Vertical and Horizontal

Our large number of high-class installations  
speak for themselves of our  
HIGH-GRADE WORKMANSHIP  
AND MATERIALS  
CAREFUL INSPECTION AND TESTING

**The Smart-Turner Machine Co., Limited**  
Hamilton - Canada

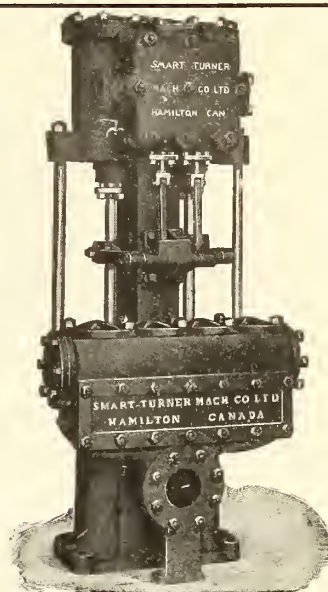


Fig. 167

## Non-Sweating Railway Lamps

We manufacture  
SWITCH MARKER CLASSIFICATION SEMAPHORE  
to R. S. A. Specification.

**The Hiram L. Piper Company, Limited, Montreal**

*Our No. 31 Catalogue illustrates them all.*

## Buy Northern Cranes—Made in Canada



*Write for prices.*

**NORTHERN CRANE WORKS LIMITED**  
WALKERVILLE, ONTARIO

ELECTRIC CRANES  
HAND CRANES  
ELECTRIC HOISTS  
AIR HOISTS  
FOUNDRY EQUIPMENT

## CANADIAN PACIFIC RAILWAY COMPANY.

### Dividend Notice.

At a meeting of the Board of Directors held today, a dividend of two and one-half per cent. on the Common Stock for the quarter ended 31st March last, being at the rate of seven per cent. per annum from revenue, and three per cent. per annum from Special Income Account, was declared payable on 29th June next to Shareholders of record at 1 p.m. on 1st June next.

By order of the Board,

**ERNEST ALEXANDER,**  
Secretary.

Montreal, 1st May, 1918.

## THE VICTORIA ROLLING STOCK & REATLTY CO. OF CANDAD, LTD.

NOTICE is hereby given that a division of 4% on the paid-up capital stock of the Company for the six months ended May 31st, 1918, has been declared payable June 1st, 1918, to the shareholders of record as of the 31st of May, 1918.

By order of the Board,

**H. F. MARRIOTT,** Secretary.

Toronto, May 17th, 1918.

## The Hollenden Cleveland

EVERY phase of personal service at The Hollenden is characterized by tactfulness, promptness, and courtesy.

Many of the employees have served Hollenden patrons for years—an unusual condition in hotel employment. Uniformly excellent service in the result.

**European plan, with bath, \$2.00 and upwards.**

## Dominion Coal Company Limited

“Dominion”

and

“Springhill”

Steam and Gas Coals

General Sales Office

**112 St. James Street  
MONTREAL**

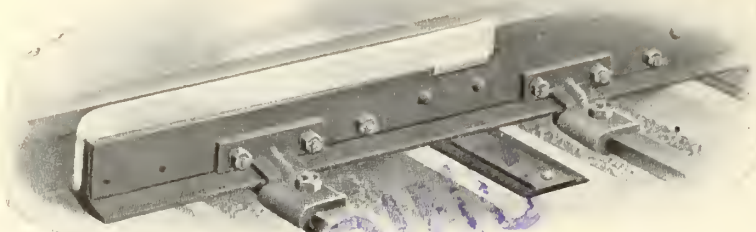
## THE CANADA SOUTHERN RAILWAY COMPANY.

St. Thomas, Ont., May 11, 1918.

The Annual General Meeting of the Shareholders of The Canada Southern Railway Company, for the election of Directors, and other general purposes, will be held at the Company's Head Office, in the City of St. Thomas, Ontario, on Wednesday, the 5th day of June, 1918, at 11 o'clock in the forenoon.

**DWIGHT W. PARDEE,**  
Secretary.





## Ramapo Manganese Reinforced Switch Point

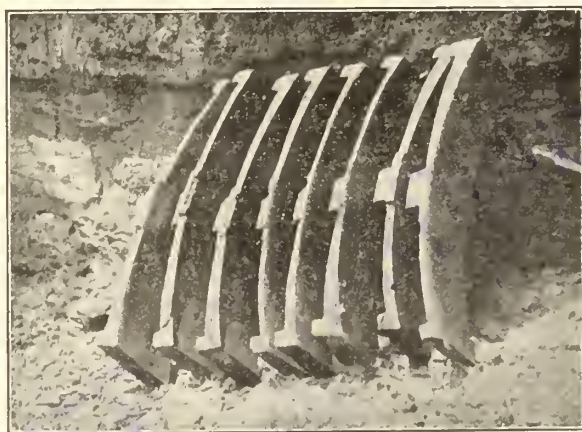
Note that the Switch Rail is continuous to the end of the Switch, leaving no joint to work loose. This construction in hard service will outwear all rail point five to one.

## Canadian Ramapo Iron Works Limited

NIAGARA FALLS

ONTARIO

## Reinforced Brake Shoes



wear as shown above, before they are scrapped and they wear safely, too. You get your full money's worth in satisfactory service from them always.

Reinforced Car, Coach and Driver Shoes are absolutely essential for safe and economical operation in all classes of railway service.

Manufactured in Canada.

### Dominion Brake Shoe Company, Limited

350-356 St. James Street, Montreal.

The Holden Co., Limited, Agents



If you use—

Copper and Brass Tubes  
Copper, Brass, Bronze  
Rods, Copper, Brass,  
Bronze Wire, Copper  
Clad Steel Wire or  
bare and insulated elec-  
tric wires and cables  
of any kind, we are in  
a position to serve you  
promptly.

Standard Underground Cable  
Co. of Canada, Limited

Hamilton, Ont.

Montreal, Toronto, Hamilton, Seattle.

ESTABLISHED 1849.

## BRADSTREET'S

Capital and Surplus, \$1,500,000.  
Offices throughout the Civilized World.

Executive Offices:  
NOS. 346 and 348 BROADWAY,  
N.Y. CITY, U.S.A.

The Bradstreet Company gathers information that reflects the financial condition and the controlling circumstances of every seeker of mercantile credit. Its business may be defined as of the merchants, by the merchants, for the merchants. In procuring, verifying, and promulgating information, no effort is spared, and no reasonable expense considered too great that the results may justify its claim as an authority on all matters affecting commercial affairs and mercantile credit. Its offices and connections have been steadily extended, and it furnishes information concerning mercantile persons throughout the civilized world.

Subscriptions are based on the service furnished and are available only by reputable wholesale jobbing, and manufacturing concerns, and by responsible and worthy financial, fiduciary, and business corporations. Specific terms may be obtained by addressing the Company at any of its offices. Correspondence invited.

### OFFICES IN CANADA:

Halifax, N.S.; Hamilton, Ont.; London, Ont.;  
Montreal, Que.; Ottawa, Ont.; Quebec, Que.;  
St. John, N.B.; Toronto, Ont.; Vancouver, B.C.;  
Calgary, Alta.; Edmonton, Alta.; Winnipeg, Man.;  
Victoria, B.C.

THOS. C. IRVING,

Gen. Man. Western Canada, Toronto.



Capital Authorized ..... \$10,000,000  
Capital Paid up ..... 7,000,000  
Reserve Fund ..... 7,000,000

Head Office: Toronto.

Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the World.

Sterling and New York Exchange bought and sold.

Savings Department: Interest allowed on deposits at best current rates.

Branches throughout the Dominion of Canada.



# The Purchasing Agents' Guide

To the Manufacturers of and Dealers in Steam and Electric Railway, Railway and Canal Contractors', Marine, Express and Telegraph Supplies.

**ACCUMUATORS, HYDRAULIC**  
Pennsylvania Steel Export Co.  
**AGENTS, STEAMSHIP**  
Page & Jones

**AIR BRAKES AND FITTINGS**  
Canadian Allis Chalmers, Ltd.  
Canadian General Electric Co.  
Canadian Westinghouse Co.

**ANCHORS, GUY**  
B. J. Coghlin Co.

**ANCHOR RODS**  
B. J. Coghlin Co.

**ANGLE BARS**  
Nova Scotia Steel & Coal Co.  
Steel Co. of Canada

**ASBESTOS**  
Can. H. W. Johns-Manville Co.

**AXES**  
Canada Foundries & Forgings, Ltd.

**AXLES**  
B. J. Coghlin Co.  
Marsh Engineering Works  
Nova Scotia Steel and Coal Co.  
Pennsylvania Steel Export Co.  
Jas. W. Pyke & Co.  
Steel Co. of Canada.

**BATTERIES, DRY**  
Canadian National Carbon Co.

**BATTERIES, SIGNAL**  
Canadian National Carbon Co.

**BATTERIES, STORAGE**  
Canadian General Electric Co.  
Canadian National Carbon Co.

**BATTERIES, TRACK**  
Canadian National Carbon Co.

**BATTERY SUPPLIES**  
Canadian National Carbon Co.  
**BELTING, COTTON, LEATHER AND RUBBER**  
Dodge Manufacturing Co.

**BELT TIGHTENERS**  
Dodge Manufacturing Co.

**BOILER COMPOUND**  
Dearborn Chemical Co. of Canada

**BOILERS**  
Babcock & Wilcox  
M. Beatty & Sons  
Canadian Allis Chalmers, Ltd.  
F. H. Hopkins & Co.  
Marsh Engineering Works  
Polson Iron Works

**BOILERS, PORTABLE**  
Babcock & Wilcox  
Polson Iron Works

**BOILERS, MARINE & STATION-ARY**  
Babcock & Wilcox  
Polson Iron Works

**BOILERS, STEAM**  
Babcock & Wilcox  
Polson Iron Works

**BOILERS, WATER TUBE**  
Babcock & Wilcox  
Polson Iron Works

**BOLTS**  
Pennsylvania Steel Export Co.  
Steel Co. of Canada

**BOLTS, EYE**  
Canada Foundries & Forgings, Ltd.

**BOLTS, TRACK**  
F. H. Hopkins & Co.  
Nova Scotia Steel & Coal Co.  
Steel Co. of Canada

**BORERS, CAR WHEEL**  
John Bertram & Sons Co.

**BRAKE BEAMS**  
Buffalo Brake Beam Co.

**BRAKE SHOES**  
Canada Iron Foundries  
Dominion Brakeshoe Co.

**BRAKE SHOES, LOCOMOTIVE DRIVER**  
Canada Iron Foundries

**BRASS RODS, SHEETS AND TUBES**  
Dominion Copper Products Co.

**BRIDGE NUMBERS**  
Acton Burrows, Limited

**BRIDGES**  
Canadian Allis Chalmers, Ltd.  
Canadian Bridge Co.  
Dominion Bridge Co.

**BROKERS, SHIP**  
Page & Jones

**BRUSHES, CARBON, GRAPHITE AND METAL COMPOSITION**  
Canadian National Carbon Co.

**BUCKETS, COAL, ORE AND CONCRETE**

M. Beatty & Sons  
Brown Hoisting Machinery Co.  
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**BUCKETS, ELEVATOR**  
Dodge Manufacturing Co.

**BUCKETS, STEEL**  
Marsh Engineering Works

**BUILDINGS, STEEL**  
Canadian Allis Chalmers, Ltd.  
Canadian Bridge Co.  
Dominion Bridge Co.

**BUMPING POSTS**  
F. H. Hopkins & Co.

**CABLES, ELECTRIC, RUBBER, PAPER, FIBRE INSULATED**  
Standard Und. Cable Co. of Can.

**CARBONS, ARC LAMP, FLARE ARC AND PHOTOGRAPHIC**  
Canadian National Carbon Co.

**CARBON SPECIALTIES**  
Canadian National Carbon Co.

**CAR PULLERS**  
Dodge Manufacturing Co.

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Ohio Brass Co.

**CARS**  
Eastern Car Co.  
Hart-Otis Car Co.  
Ottawa Car Mfg. Co.

**CARS, DUMP**  
Hart-Otis Car Co.  
F. H. Hopkins & Co.  
Marsh Engineering Works

**CARS, INDUSTRIAL**  
Marsh Engineering Works  
Pennsylvania Steel Export Co.

**CASTINGS, BRASS AND BRONZE**  
Canada Iron Foundries  
Canadian Bronze, Limited  
T. McAvity & Sons  
H. Mueller Mfg. Co.  
Ottawa Car Mfg. Co.  
Yarrows, Ltd.

**CASTINGS, CAR**  
Canada Iron Foundries  
Dominion Brakeshoe Co.  
Hull Iron & Steel Foundries, Ltd.

**CASTINGS, IRON**  
Canada Iron Foundries  
Dominion Brakeshoe Co.  
Dominion Steel Foundry Co.  
Hunt-Spiller Manufacturing Corp.  
T. McAvity & Sons  
Yarrows, Ltd.

**CASTINGS, MALLEABLE**  
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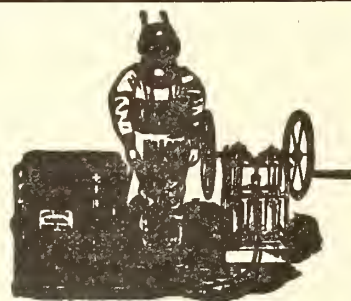
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ESTABLISHED 1898.

Number 245

TORONTO, CANADA, JULY, 1918

Subscription Rates, Page 299



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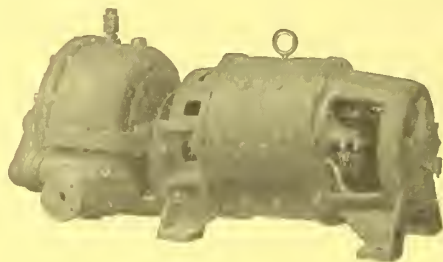
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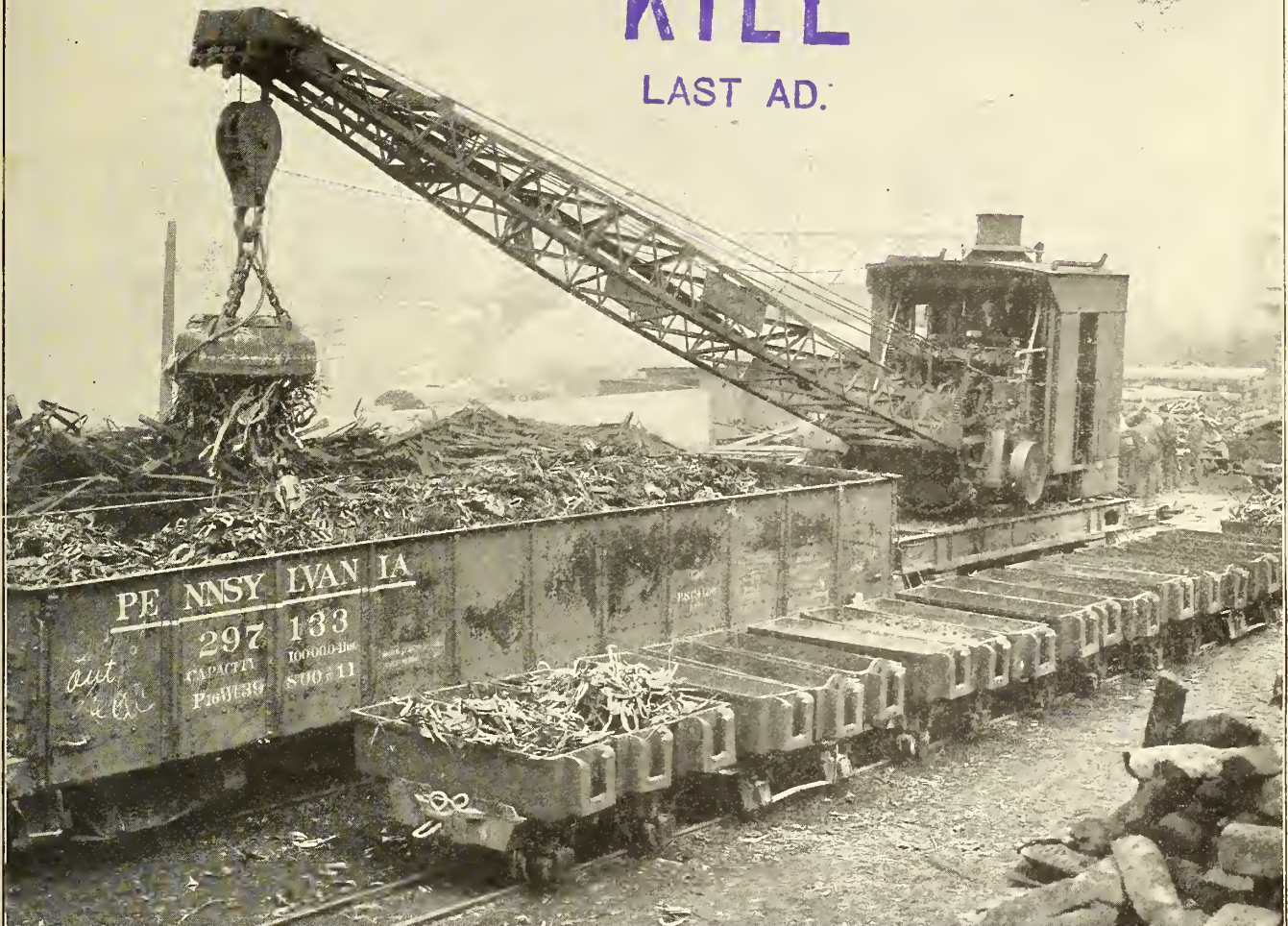
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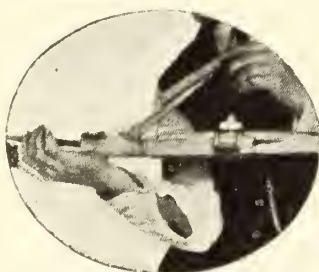
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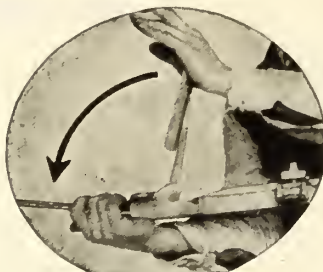




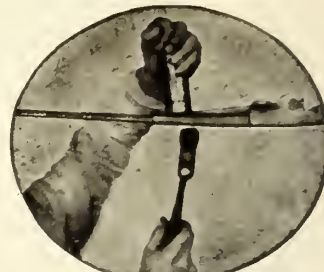
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Slip tip under hooks—



turn over and down on the wire



clinch the lips and the job is done.

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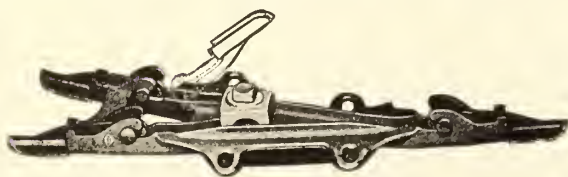
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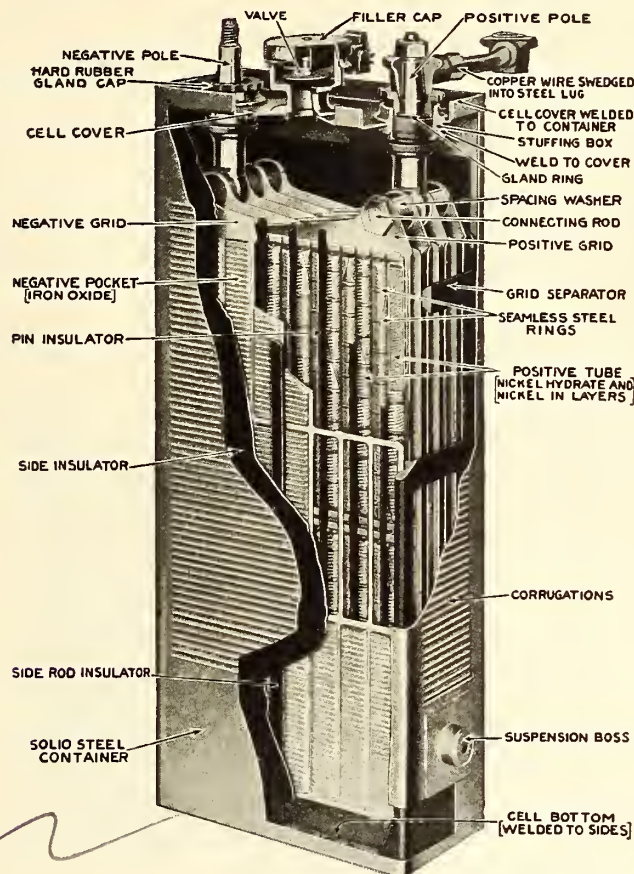
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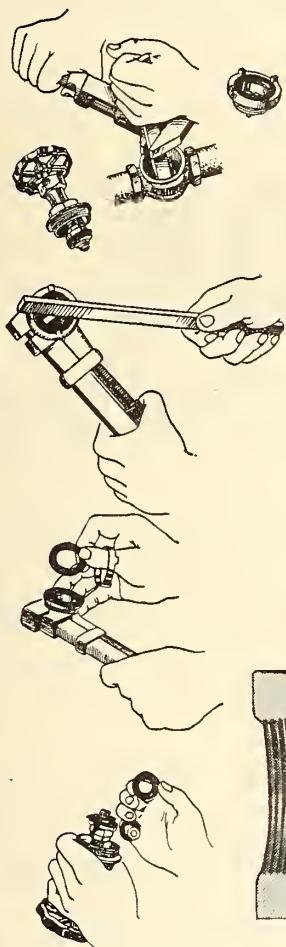


# MULTIPLATE

"Valve Service"

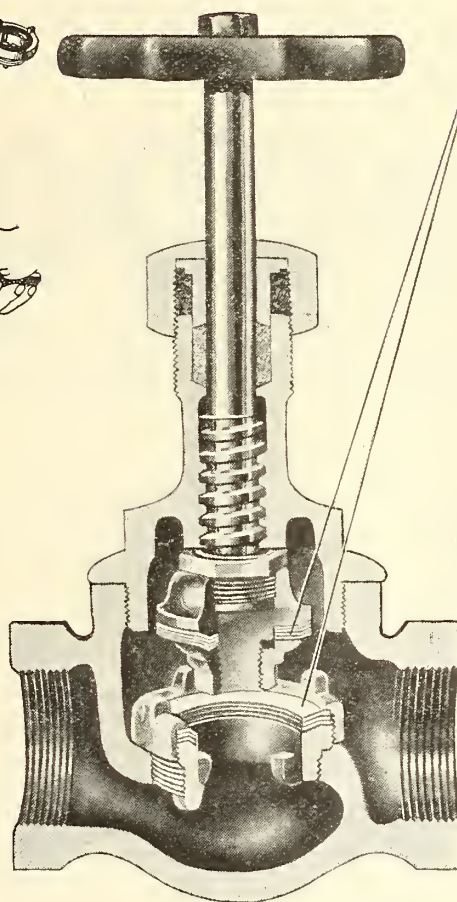
# KILL

LAST AD.



By this method  
you do not take  
the valve out of  
the pipe line.

To remove  
plates see cuts  
opposite.



## NOTE THESE PLATES

When the valve leaks,  
simply take off the first  
pair of plates and throw  
them away; tighten up  
the other parts, and the  
valve is as good as new.  
This can be done till the  
plates are used up, then  
re-fill with new plates.  
No grinding.



*Canadian Manufacturers*

**CANUCK SUPPLY CO., LIMITED**  
**MONTREAL**

**TORONTO**

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**VANCOUVER**





## The United States Government

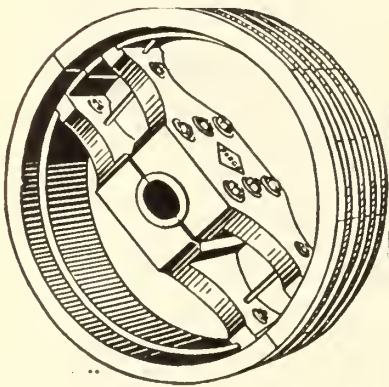
will release Steel for Steel Pulleys only when wanted for war orders.

## Why not conserve on Steel Pulleys altogether?

Let your replacements and new equipment be made with

# DODGE

## Wood-Split Pulleys



The Dodge Wood-Split Pulley will do in your plant all that a Steel Pulley ever did, and it will do it at less cost!

Then, too, the Dodge Wood-Split Pulley costs less to buy than steel Pulleys of equal dimensions. Its surface prevents excessive belt slip, and there is less weight friction, consequently it uses less power than a steel pulley.

Considering the almost daily increasing cost of all equipment, you cannot do better than specify Dodge Wood-Split Pulleys when ordering.

We ship in all sizes from 4-inch diameters up to 6-foot diameters on the day orders are received.

All pulleys above 36 inches in diameter for special work are built with four arms. For heavy work and when so ordered, pulleys are bored to fit size of shaft and key-seated, compressing pulley hub on shaft over key, providing a superior and positive shaft fastening, and there is no tendency to throw the pulley out of truth with the shaft.

All orders receive immediate attention.

## Dodge Manufacturing Co., Limited

Works and General Office:  
Junction 3200

**Toronto**

City Shipping Department:  
Adelaide 4285

Branch Warehouse: 770 St. Paul St. West, Haymarket Square, Montreal





# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg.,  
Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH,  
ENGINE and CAR OILS, and PERFECTION VALVE  
and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to  
five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organi-  
zation of skilled railway mechanics of wide and varied experi-  
ence. Services of Experts furnished free of charge to patrons  
interested in the economical use of oils.

**STREET RAILWAY LUBRICATION  
A SPECIALTY**

**Galena Railway Safety Oil**

in Headlights, Marker and Classification Lamps, to secure Effi-  
ciency of Service, Maximum Candle Power, Clearness of Light.

**Galena Long Time Burner Oil**

for use in Switch and Semaphore Lamps, and all lamps for long  
time burning, to avoid smoked and cracked chimneys and  
crusted wicks.

**Tests and Correspondence Solicited.**

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USE  
LAST ADVERTISEMENT.  
STANDING





**KILL  
LAST AD.**

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*All industries using iron and steel in quantities will find C.G.E. Arc Welders economical, speedy and safe for cutting, joining or building up work.*

Ship Yards—Repairs to steel plates.

Blast Furnaces—To clear out Frozen tap holes.

Steel Foundries—To cut off risers, to reclaim defective castings, to cut scrap for cupolas.

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## ARC WELDING OUTFITS

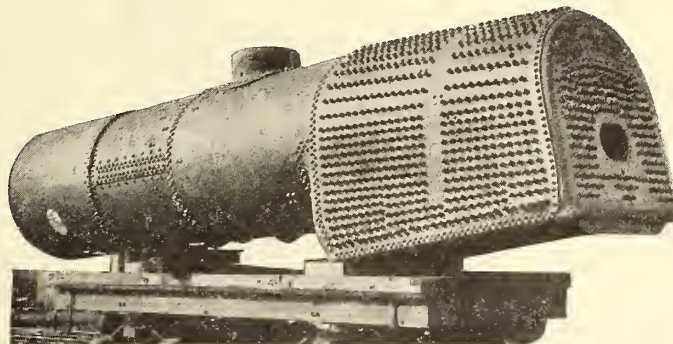
For further information apply to our nearest office.

## CANADIAN GENERAL ELECTRIC CO. LIMITED

Head Office: Toronto. Sales Offices: Montreal, Halifax, Sydney, Ottawa, Cobalt, South Porcupine, London, Winnipeg, Calgary, Edmonton, Nelson and Vancouver.



# For War Time Service



## Use Tate Flexible Staybolts in All Locomotive Boilers

And resolve to obtain the greatest ton mileage at the least expense in firebox maintenance.

The Railroads of the United States have passed through many severe winters with locomotive boilers equipped with Tate Flexible Staybolts. They know what the real value of the Tate Bolt is—by what it has accomplished in keeping their engines in service.

Broken staybolts are responsible for pulling more engines out of service than any other known defect, for the Safety of the boiler largely depends on the security of the stayed connections.

The Railroads that show the lowest breakage of staybolts yearly, are those that have the Tate Bolts applied to the greatest number of locomotives.

In these times *Do not experiment* but *use* the strongest and most suitable staybolt to give prolonged service to the complete firebox assemblage.

*Specify Tate Flexible Staybolts*

## Flannery Bolt Company

**Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited,  
General Offices, Toronto, Ont.





# 2000 ROOMS in the Canadian Pacific Rockies

Three Giant Mountain Ranges  
Making Fifty Switzerlands in One

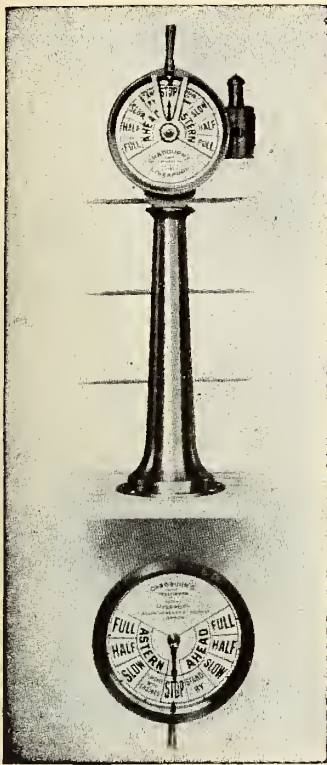
*Between Calgary and Victoria, B. C.*

Distinctive hotels—each as picturesque as the scenery into which it fits—each with its special feature of glaciers, lakes, Alpine climbing, fishing, pony riding, swimming or golf. Luxurious mountain-guarded Banff Springs Hotel—restful Chateau Lake Louise, among the Lakes in the Clouds. Mount Stephen House at Field, under

the shadow of Cathedral Mountain—the gem-like Emerald Lake Chalet—Glacier House, glacier rich—Hotel Sicamous, on the the Shores of Shuswap Lake—spacious, gracious Hotel Vancouver, at the Gateway to the Pacific—the Empress at Victoria, B. C., on Vancouver Island, with its atmosphere of old England—these hotels invite you this summer.

W. B. Howard, District Passenger Agent, Toronto



*Made in Canada*

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Telegraphs for Engine, Twin  
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and Docking.

Engine Room Indicators (Speed)

Engine Counters

**Chadburn's (Ship) Telegraph Co'y, Ltd.**  
Bootle, England

*Sole Canadian Agents*

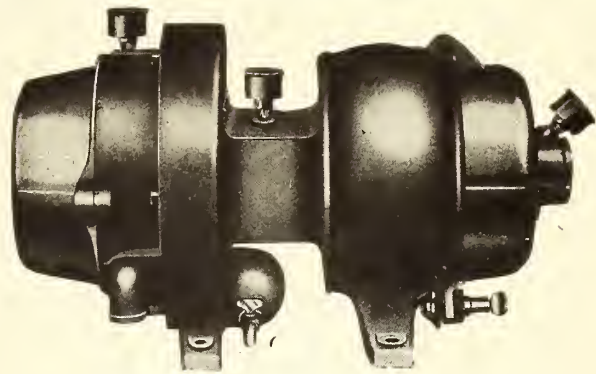
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## The "Taynold" Incandescent Electric Headlight

*Made in Canada*

An Incandescent Headlight that complies with every railroad requirement in every province of Canada. A headlight that has proved efficient and economical.

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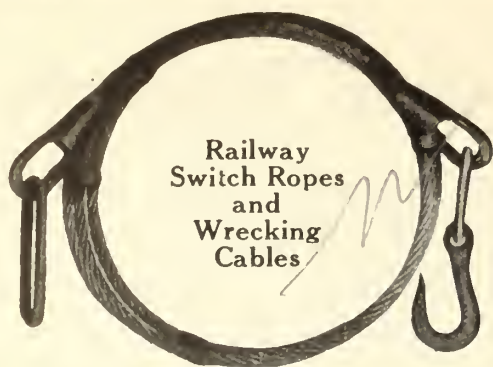
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Use "DOMINION" Wire Rope

for  
Stevedoring Work, Dredges,  
Ships' Rigging, Hawasers, etc.

The DOMINION WIRE ROPE Co., Limited

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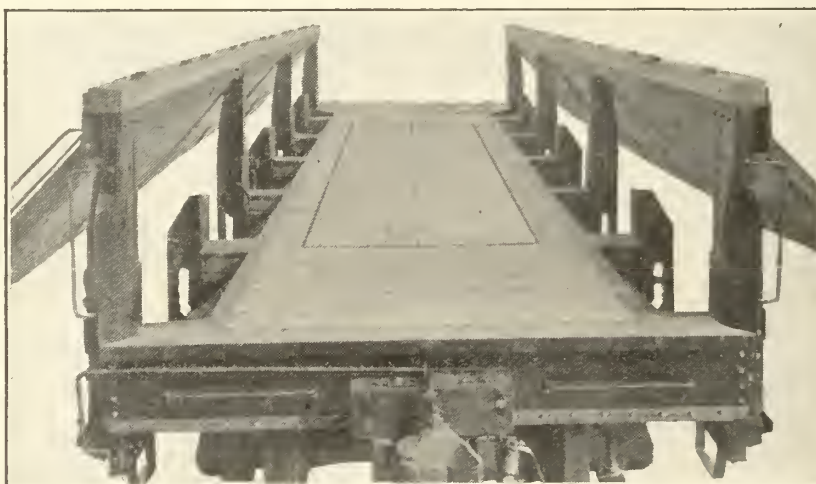
## Side Ballasting With One Side Closed

Canadian Government Railways Standard Ballast Car

25 per cent More  
Door Opening  
Area.

Less Stakes to Ob-  
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Material.

No Clogging of the  
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Boulders between  
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Dumps Clean and  
Quicker in any  
Material.

No more Breaking  
of Stakes or Cables.

The Car that will  
Give Maximum  
Service with  
Minimum Repairs.

Write for Booklet No. 19 for further information.

—DESIGNED, BUILT AND PATENTED IN CANADA—

The HART-OTIS CAR CO., Limited, MONTREAL

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Marine Lights, Air Ports,  
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MONTREAL



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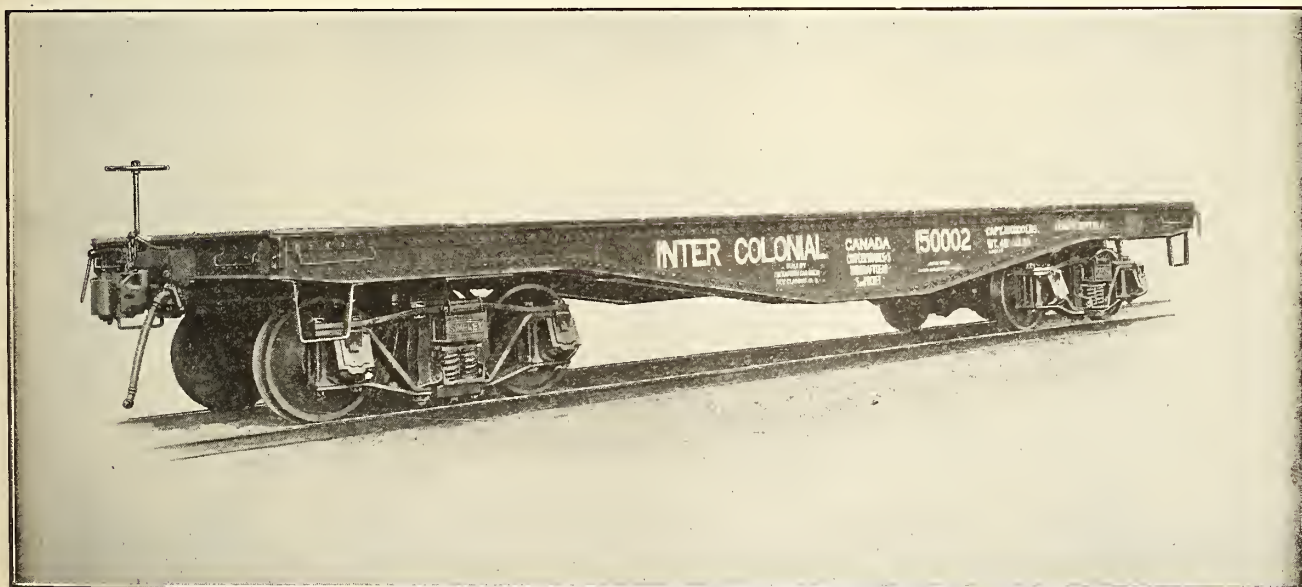
Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

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Western Sales Office, Room 14, Windsor Hotel, Montreal



75 on Special Pit Car For Canadian Government Railways.

## FLAT CARS, CABOOSSES AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

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8", 9", & 12"

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Sand Cast Any  
Size.

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1 $\frac{3}{4}$ " to 6" Square

Cogged any size  
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**Steel Ships, Engines, Boilers, Castings, and Forgings**

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



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**Two Dry Docks  
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**EQUIPPED TO  
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for delicate filing operations where speed and accuracy are essential. "Famous Five" Files are used.

The reason is clear. The very best Canadian mechanics are employed and their experience is the basis for their preference. Follow their lead. Specify "Famous Five" Files when you order.

They are :

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PORT HOPE                      ONTARIO

**50  
YEARS  
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**OVER  
60,000,000  
FILES  
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Port Arthur, Canada

*Designers and Builders of*

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EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

**Dry Dock — 700 ft. x 98 ft. x 16 ft.**



PLANT AT PORT ARTHUR, CANADA

In Stock for Immediate Delivery

Several 1st Class, New

**CLAM SHELLS**

1½ and 2 yards.

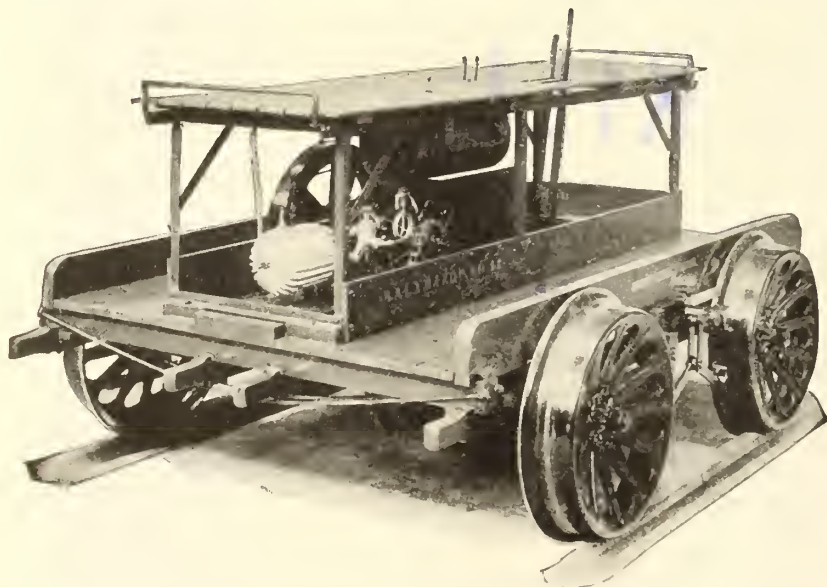
**4 HOISTING ENGINES**

8¼ in. x 10 in.—with Boilers.

Head Office and Plant

**Port Arthur, Ontario**

## Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

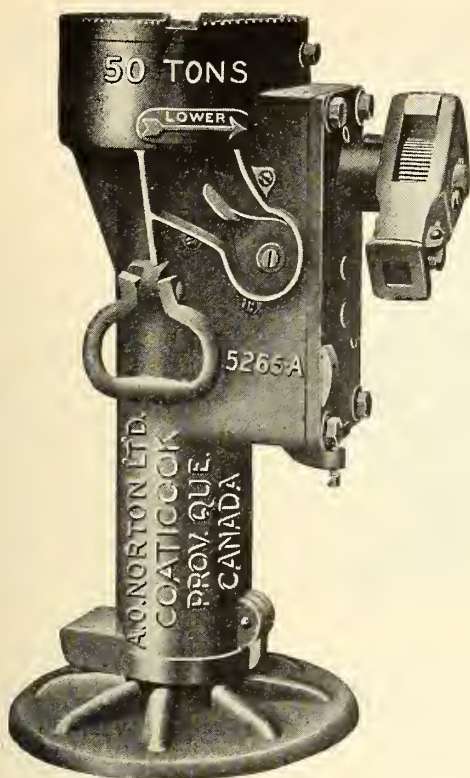
We manufacture a full line of railway motors for every purpose

and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

**Kalamazoo Railway Supply Company**

KALAMAZOO, MICH., U.S.A.





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For all Classes of Service

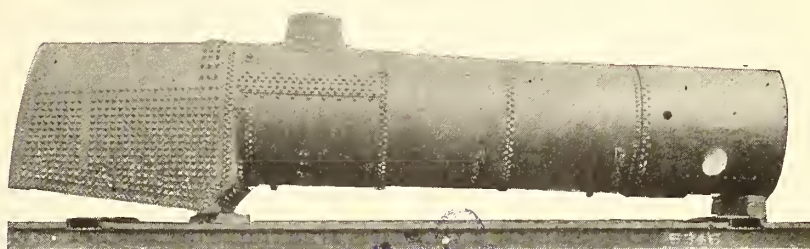
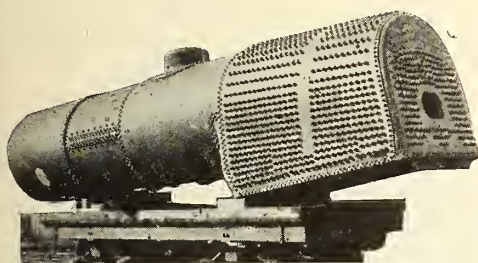
**10 to 100 Tons Capacity**  
In Stock for Immediate Shipment.

*Send for Illustrated Catalogue No. 29.*

## A. O. Norton, Limited

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Stock Carried by Canadian Agents: **MUSSENS LIMITED**  
Montreal Toronto Winnipeg Cobalt Calgary Vancouver



## It is an Established Fact

That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

The Flexibility in the bolt serves to accommodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefulness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintenance.

*In use on all the prominent railroad systems of Canada.*

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.



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**BRASS**

All Kinds  
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MARINE  
Specialties  
To Order



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## T. McAvity & Sons, Limited

*Brass and Iron Founders*

**ST. JOHN, N.B.**

Established 1834

Incorporated 1907

# "STERLING" HACK SAWS

have for many years  
proven their value  
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If you use blades for  
cutting metal, you will  
make no mistake in buying  
saws that will return with good  
interest every dollar paid for them.

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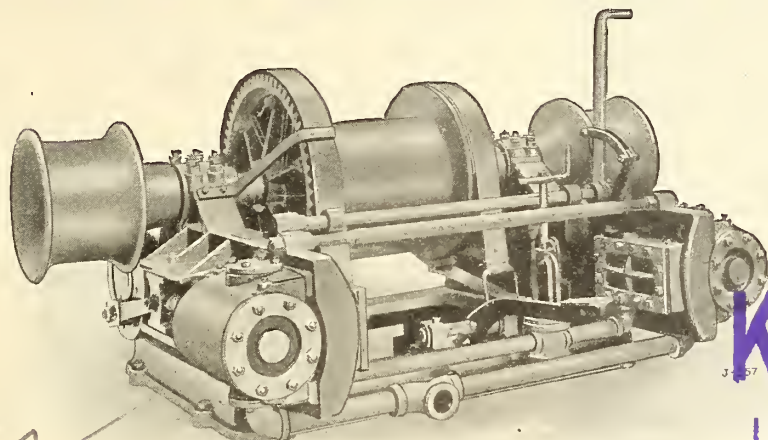
**Diamond Saw & Stamping Works**

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# SHIPS' WINCHES

We are Just Starting a Repeat Order of This Type



**KILL**  
LAST AD.

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BRANCHES: SYDNEY, SHERBROOKE, MONTREAL, TORONTO, COBALT, TIMMINS,  
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## ONLY WHAT WE PROMISED

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In January, 1917, the.....received ten heavy switch engines, equipped with our adjustable wedge, and these engines have been in constant pool service day and night since the day of their arrival.

In a recent conversation with their Master Mechanic he advised that up to the present time they have not been obliged to renew rod bushing, or do any rod work, neither have they dropped the wheels or had any trouble with their driving boxes; and today each of the engines is free of pound.

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**Franklin Railway Supply Co., of Canada**  
Limited

Transportation Building  
Montreal



Franklin Automatic  
Adjustable Driving  
Box Wedge.



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## Best To Install

Because—

- They cannot rust or rot.
- they are strongest and most durable
- they require only ordinary unskilled labor, and not much of that.
- they are "proved in service" on all Canadian railways and hundreds of highways under the most strenuous conditions of heavy traffic.

"No Hill Too Steep—No Fill Too Deep."  
for Pedlar's "Perfect" TONCAN Metal Culverts.

WRITE FOR CULVERT BOOKLET R.M.



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Established 1861

Executive Offices and Factories, OSHAWA, ONT.

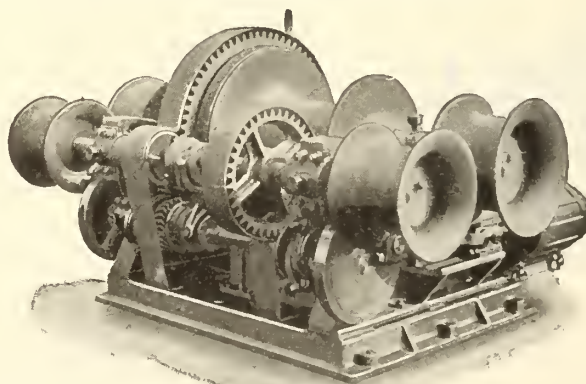
Branches at Montreal, Ottawa, Toronto, London, Winnipeg, Vancouver.



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Cargo Winches, Anchor Windlasses, Ash Hoists, Etc.

Have just finished  
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Winches of this  
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etc., for ships  
being built in  
Canada



Are now engaged  
on a larger con-  
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of slightly differ-  
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other interests.

7 x 12 Standard D. C. Double Purchase Cargo Winch

We have a few winches exactly like above, which can be spared for immediate shipment.

Let Us Have Your Inquiries. We Can Interest You.

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LAST AD.



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**T**HIS explains why railroads and steel mills used over one million pounds of Thermit in 1917. Also why 95% of the railroads in the United States and Canada having over 10 locomotives, use Thermit for welding frames and all heavy sections.

There are few machine parts which are subjected to greater strains or more severe shocks than a locomotive frame or a blooming mill pinion. Yet Thermit welds on such parts are being made every day and **STAND UP IN SERVICE FOR YEARS.** The reason for this is that, unlike **ANY OTHER WELDING PROCESS**, the steel to make a Thermit weld is produced **IN BULK** at a temperature of

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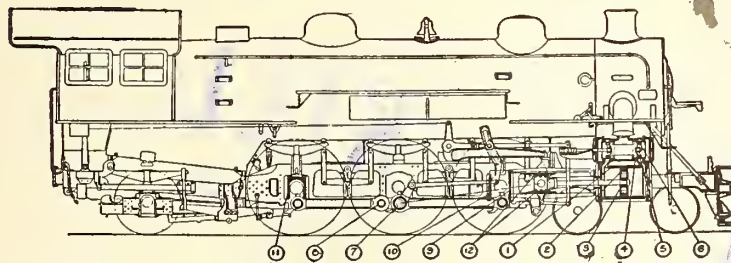
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For 12 of the Principal Parts of a Locomotive

### DEFECTS

Defective castings are as expensive to machine as good ones. Ninety per cent of the above castings are machined all over. Reduce your machine work on defective castings and increase the output of your machines,

**BY USING**

**HUNT SPILLER GUN IRON**

*Made Only By*

**Hunt-Spiller Manufacturing Corporation**

W. B. LEACH, PRES. AND GEN. MGR.

Office and Works:

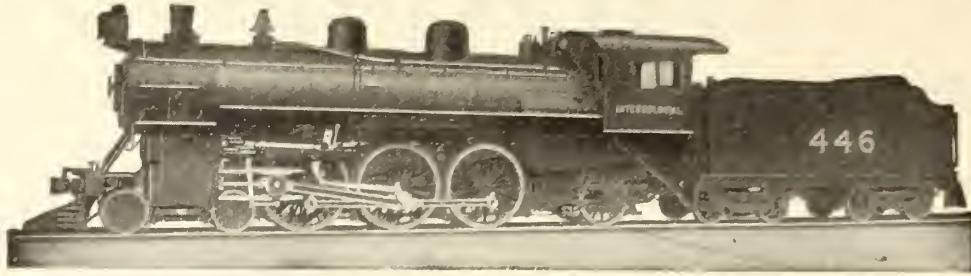
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Canadian Representatives : Canuck Supply Co., 418 St. James St., Montreal, P.Q.



## Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE—INTERCOLONIAL RAILWAY  
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

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## HELPING to SPEED the MAKING of MARINE BOILERS for MORE SHIPS"



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Makers of Manganese Bronze Propellers, Large Marine Engine Cylinders,  
and other Castings

MARINE RAILWAY, CAPACITY 2500 TONS DEAD WEIGHT

LARGER VESSELS DOCKED IN GRAVING DOCK, 480 FT. x 65 FT.

LOWEST RATES ON PACIFIC COAST

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**LOCOMOTIVE BLACK**—A full rich black—withstands the wind, smoke, weather. Holds its lustre to an unusual degree.**LIONOIL**—A limpid preparation, easily applied to metallic surfaces by brushing or dipping, forming a waterproof coating that excludes moisture.**HAND RAIL BLACK**—For producing an attractive and durable finish on hand rails.**TARGET AND SIGNAL ENAMELS**—For use on wood or metal. Bright colors not affected by exposure to the elements.**LUXEBERRY CEMENT COATING**—A hard elastic and very durable finish for cement.

**BERRY BROTHERS**  
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World's Largest Varnish Makers  
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*Manufacturers of*

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10 ft. 0 in. diam., 22 ft. 0 in. Scotch marine boiler for M. Beatty & Sons, Welland, Ont. This boiler was built for 125 lbs. working pressure; has one steam dome 36 inch diameter by 6 ft. 0 in. long, 172 tubes 3 in. x 9 ft. 4 in. long; two Adamson Joint furnaces and smoke box.

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Dredges, Hydraulic and  
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Marine Engines and  
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## ANNOUNCEMENT

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HOT AND COLD ROLLED — *Sheets — Rolls — Strips —  
Plates — Anodes — Bus Bars — Rods*

Made in any width up to 66 inches in all tempers for Roofing,  
Blanking, Deep Drawing, Spinning. Accurate to  
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*Prompt Deliveries*

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that are bad enough to justify the use of treatment, with **LIME** and **SODA ASH**, through wayside treating plants, will average, at present prices for these chemicals,—Four and one-half cents per 1000-gallons of water.

These figures represent actual cost of chemicals only, to which must be added interest on investment in plant, cost of applying chemicals, and depreciation.

By the use of

### **Dearborn Water Treatment**

the cost will average two cents per 1000-gallons of water. Application is made to boilers or engine tanks at terminals, and there is no expense other than the cost of the material itself.

*Manufactured by*

**The Dearborn Chemical Company of Canada, Limited**

2454-2464 Dundas Street, Toronto, Canada



# Thor Iron Works Limited

Shipbuilders, Repairs, Etc.

Toronto, - - Ontario

S.S. Angouleme  
4300-Ton  
Freighter

Launched  
Aug. 2nd, 1917



Length Overall  
261 ft.

Breadth Moulded  
43 ft. 6 in.

Depth Moulded  
28 ft. 2 in.

## CANADA FOUNDRIES & FORGINGS LIMITED

**KILL**  
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Ship and Engine Parts  
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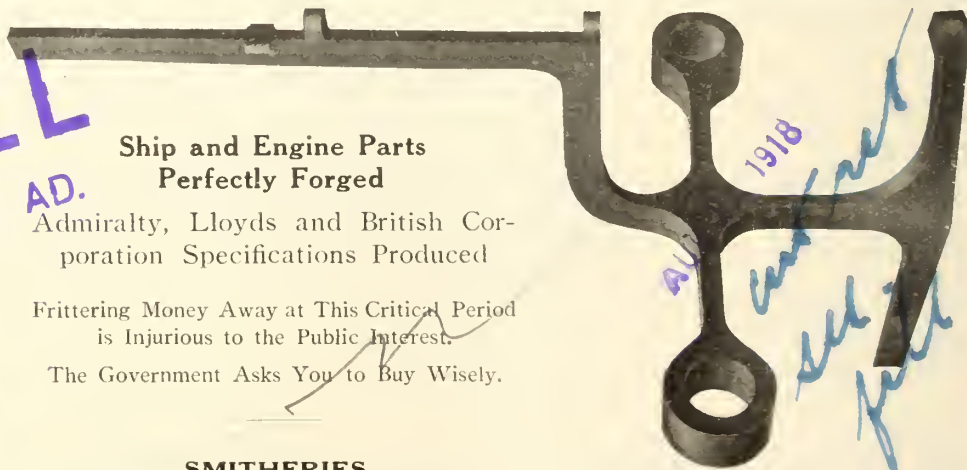
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Frittering Money Away at This Critical Period  
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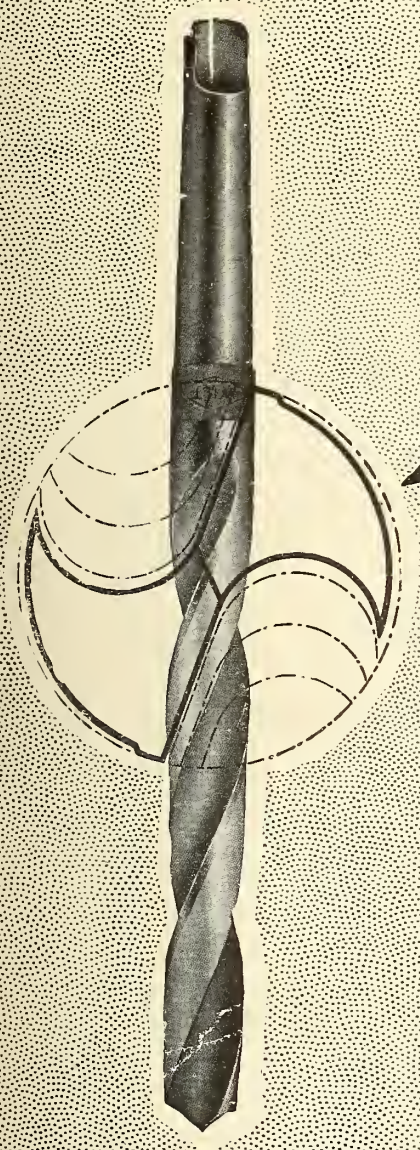
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AT WELLAND, ONTARIO

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# WILT High Speed *and* Carbon TWIST DRILLS



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Wilt Accuracy comes from correct design and scientific and advanced method of manufacture—a method that is exclusively “Wilt.”

*WILT represents the highest quality in Twist Drill Construction. Put them to the test.*

### WILT TWIST DRILL CO.

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London Office, Wilt Twist Drill Agency  
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“Where there’s a  
**WILT**—  
There’s the way”



KILL  
LAST AD.



THIS symbol, on any rubber product, is a warranty for quality and service. Behind it is an organization that has been manufacturing rubber goods for more than half a century. It is a guarantee that the product will stand up under the most trying conditions and that its service is easily the best to be had.

The best way to prove our statement is to put our products to the test. One of our service branches is within your reach. Get in touch with that branch and find out for yourself how well we can serve you and those you wish to serve.

*Everything in Rubber*  
*"Made in Canada."*

**Canadian Consolidated Rubber Co.,**  
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SERVICE BRANCHES at Halifax, St. John, Quebec, Ottawa, Toronto,  
Hamilton, Kitchener, London, North Bay, Fort William, Winnipeg,  
Brandon, Regina, Saskatoon, Calgary, Lethbridge,  
Edmonton, Vancouver and Victoria.



# Canadian Railway and Marine World

July, 1918

## Freight and Passenger Rates Increased by United States Government.

The Director General of U.S. Railroads issued general order 28 on May 25, providing for increases in freight and passenger rates. This was followed on June 12 by a supplement making a number of changes. The order is of such great general importance that it is given practically in full, in consolidated form, as follows:—

Whereas it has been found and is hereby certified to the Interstate Commerce Commission, that in order to defray the expenses of federal control and operation fairly chargeable to railway operating expenses, and also to pay railway tax accruals other than war taxes, net rents for joint facilities and equipment, and compensation to the carriers, operating as a unit, it is necessary to increase the railway operating revenues, and whereas the public interest requires that a general advance in all freight rates, passenger fares, and baggage charges on all traffic carried by all railroad and steamship lines taken under federal control under an act of Congress approved Aug. 29, 1916, entitled "An act making appropriations for the support of the army for the fiscal year ending June 30, 1917, and for other purposes," shall be made by initiating the necessary rates, fares, charges, classifications, regulations, and practices by filing the same with the Interstate Commerce Commission under authority of an act of Congress approved Mar. 21, 1918, entitled "An act to provide for the operation of transportation systems while under federal control, for the just compensation of their owners, and for other purposes." Now, therefore, under and by virtue of the provisions of the said act of Mar. 21, 1918, it is ordered that all existing freight rates, passenger fares, and baggage charges, including changes heretofore published but not yet effective, on all traffic carried by all said railroad and steamship lines under federal control, whether the same be carried entirely by railroad, entirely by water, or partly by railroad and partly by water, except traffic carried entirely by water to and from foreign countries, be increased or modified, effective June 25, 1918, as to freight rates, and effective June 10, 1918, as to passenger fares and baggage charges, to the extent and in the manner indicated and set forth in the exhibit hereto attached and made part hereof, by filing schedules with the Interstate Commerce Commission effective on not less than one day's notice.

**Freight Rates.—Sec. 1. Class rates (domestic).—**(a) All class rates, both interstate and intrastate, shall be increased 25%, except that between points in Oklahoma the class rates for single and joint lines prescribed by the Interstate Commerce Commission for use between Shreveport, La., and points in Texas common-point territory, as shown in Interstate Commerce Commission reports, vol. 48, pp. 345 and 346, plus 25%, shall be applied.

(Paragraphs (b) and (c) of order 28 were cancelled by the supplement.)

(d) After such increase no rates shall be applied on any traffic moving under class rates lower than the amounts in cents per 100 lb. for the respective classes

as shown below for the several classifications. The minimum rate on any article shall be the rate for the class at which that article is rated in the classification shown below applying to the territory where the shipment moves.

		Official Classification.									
Classes	1	2	3	4	5	6					
Rates	25	21½	17	12½	9	7					
		Southern Classification.									
Classes	1	2	3	4	5	6	A	B	C	D	
Rates	25	21½	19	16	13	11	9	10	7½	6½	
		Western Classification.									
Classes	1	2	3	4	5	A	B	C	D	E	
Rates	25	21	17½	15	11	12½	9	7½	6½	5	
		Illinois Classification.									
Classes	1	2	3	4	5	6	7	8	9	10	
Rates	25	21	17½	15	11	12½	9	7½	6½	5	

**Section 2. Commodity rates (domestic).—**(a) Commodity rates, both interstate and intrastate, on the following articles applicable on carloads, except as otherwise provided, shall be increased by the amounts indicated below:—

Coal, per net ton of 2,000 lb.—Where rate is 0 to 49c a ton: 15c a ton. Where rate is 50 to 99c a ton: 20c a ton. Where rate is \$1 to \$1.99 a ton: 30c a ton. Where rate is \$2 to \$2.99 a ton: 40c a ton. Where rate is \$3 or higher a ton: 50c a ton. Where rates have not been increased since June 1, 1917, the increase to be made now shall be determined by first adding to the present rate 15c a ton, net or gross as rated, or if an increase of less than 15c a ton, net or gross as rated, has been made since that date, then by first adding to the present rate the difference between the amount of that increase and 15c a ton, net or gross as rated; and to the rates so constructed the above increases shall now be added. Where rates from producing points or to destinations have been based on fixed differentials in cents a ton, such differentials to be maintained, the increase to be figured on the highest rated point or group.

Coke, per net ton of 2,000 lb.—Where rate is 0 to 49c a ton: 15c a ton. Where rate is 50 to 99c a ton: 25c a ton. Where rate is \$1 to \$1.99 a ton: 40c a ton. Where rate is \$2 to \$2.99 a ton: 60c a ton. Where rate is \$3 or higher a ton: 75c a ton of 2,000 lb. Where rates have not been increased since June 1, 1917, the increase to be made now shall be determined by first adding to the present rate 15c a ton, net or gross as rated, or if an increase of less than 15c a ton, net or gross as rated, has been made since that date, then by first adding to the present rate the difference between the amount of that increase and 15c a ton, net or gross as rated; and to the rates so constructed the above increases shall now be added. Where rates from producing points or to destinations have been based on fixed differentials in cents a ton, such differentials to be maintained, the increase to be figured on the highest rated point or group.

Ores, iron—30c a net ton of 2,000 lb.; except that no increase shall be made in rates on ex-lake ore that has paid one increased rail rate before reaching lake vessel.

Stone, artificial and natural, building and monumental, except carved, lettered, polished, or traced—2c per 100 lb.

Stone, broken, crushed, and ground—1c per 100 lb.

Sand and gravel—1c per 100 lb.

Brick, except enameled or glazed—2c per 100 lb. Cement, cement plasters, and plaster—2c per 100 lb.

Lime—1½c per 100 lb.

Lumber and articles taking same rates or arbitrates over lumber rates; also other forest products, rates on which are not higher than on lumber—25%, but not exceeding an increase of 5c per 100 lb.

Grain, wheat—25%, but not exceeding an increase of 6c per 100 lb.

Other grain—New wheat rates.

Flour and other mill products—25%, but not exceeding an increase of 6c per 100 lb., and increases shall be not less than new rates on wheat.

Cotton—15c per 100 lb.

Cotton linters—New cotton rates.

Live stock—25%, but not exceeding an increase of 7c per 100 lb., where rates are published per 100 lb., or \$15 per standard 36 ft. car where rates are published per car.

Packing house products and fresh meats—25%, except that the rates from all Missouri River points to Mississippi River territory and east thereof shall be the same as the new rates from St. Joseph, Mo.

Bullion, base (copper or lead), pig or slab and other smelter products—25%, except that rates from producing points in the States of Arizona, California, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, and Washington, to New York, N.Y., shall be \$16.50 a net ton with established differentials to other Atlantic seaboard points; and rates from points in Colorado and El Paso, Texas, to Atlantic seaboard points shall be increased \$6.50 a net ton. Separately established rates used as factors in making through rates to the Atlantic seaboard shall be increased in amounts sufficient to protect the through rates as above increased.

Sugar, including syrup and molasses where sugar rates apply thereon—25%, except, (1) where the official classification applies, 5th class rates as increased will apply. (2) From points east of the Indiana-Illinois State line to points west of the Mississippi River, rates will continue to be made on combination of local rates or of proportional rates if published, to and from the Mississippi River; except that from points on the Atlantic seaboard to the Missouri River, Kansas City, Mo., to Sioux City, Iowa, inclusive, established differentials over the increased rates from New Orleans, La., shall be maintained. (3) From points in the States south of the Ohio River and east of the Mississippi River, also from points in the States of Louisiana and Texas, rates shall be increased by the following amounts, less the amount of any advance made in such rates since June 1, 1917.—To Chicago, Ill., 23c per 100 lb.; to St. Louis, Mo., 27½c per 100 lb.; to other points west of the Indiana-Illinois State line and west of the Mississippi River, except points in Arkansas, Louisiana, and Texas, 22c per 100 lb.; to points on and north of the Ohio River and east of the Indiana-Illinois State line rates shall be increased to maintain the former established relation to the rates from the same points of origin to Chicago, Ill., and St. Louis, Mo. (4) From producing points in Colorado, Wyoming, Montana, Kansas, and Nebraska to Missouri River territory and points in Arkansas, Oklahoma, Louisiana, and Texas and points east thereof, 22c per 100 lb. (5) From points in Idaho and Utah to points named in paragraph (4) rates shall be 15c above the rates from eastern Colorado. (6) From points in California and Oregon to points taking Missouri River rates and points related thereto under the commission's fourth section orders, and to points east of the Missouri River 22c per 100 lb.

(b) Commodity rates, both interstate and intrastate, not included in the foregoing list, shall be increased 25%.

(Paragraphs (c) and (d) of order 28 were cancelled by the supplement.)

(e) In applying the increases prescribed in this section the increased class rates applicable to like commodity descriptions and minimum weights between the same points are not to be exceeded, except that the increases in rates on sugar in carloads shall be made as expressly provided in paragraph (a) of this section.

**Sec. 3. Export and Import Rates.**—All export and import rates shall be cancelled and domestic rates applied to and from the ports.

**Sec. 4. Filing Intrastate Tariffs with Interstate Commerce Commission.**—(a) All intrastate rates and all rates for transportation by water which are to be increased under this order, if not now on file, shall be immediately filed with the Interstate Commerce Commission. Such intrastate rates shall not be applied on interstate shipments, and the schedules containing said rates shall be so restricted.

**Sec. 5. Minimum Charges.**—(a) The minimum charge on less than carload shipments shall be as provided in the classification governing, but in no case shall the charge on a single shipment be less than 50c.

(b) The minimum charge for a line haul of a carload shipment shall be \$15, except that on brick, cement, coal, coke, logs, ore, sand and gravel, and stone



(broken, crushed and ground), the existing rates as increased under section 2 of this order, shall apply. Does not apply to charges for switching service.

**Sec. 6. Disposition of Fractions.**—In applying rates, fractions shall be disposed of as follows:

(a) Rates in cents or in dollars and cents per 100 lb. or package. Fractions of less than  $\frac{1}{4}$  or 0.25 to be omitted. Fractions of  $\frac{1}{4}$  or 0.25, or greater, but less than  $\frac{3}{4}$  or 0.75, to be shown as  $\frac{1}{2}$ . Fractions of  $\frac{3}{4}$  or 0.75, or greater, to be increased to the next whole figure.

(b) Rates per ton: Amounts of less than 5c to be omitted. Amounts of 5c or greater, but less than 10c, to be increased to 10c.

(c) Rates per car: Amounts of less than 25c to be omitted. Amounts of 25c or greater, but less than 75c, to be shown as 50c. Amounts of 75c or greater, but less than \$1, to be increased to \$1.

**Sec. 7. Observance of Differentials.**—In establishing the freight rates herein ordered, while established rate groupings and fixed differentials are not required to be used, their use is desirable, if found practicable, even though certain rates may result which are lower or higher than would otherwise obtain.

**Passenger Fares and Baggage Charges.**

**Sec. 8.**—This order shall apply to all passenger fares, both interstate and intrastate, of railroads under federal control. No existing fare equal to or in excess of 3c a mile shall be reduced. All fares now constructed on a lower basis than 3c a mile shall be advanced to the basis of 3c a mile. All fares which are on a lower basis than the said existing or advanced fares, as the case may be, such as mileage or excursion tickets, shall be discontinued. These requirements are subject to the following exceptions:

(a) The provisions of sec. 1 and 22 of the act to regulate commerce, which authorize free or reduced fares or transportation, may be observed, except—that no mileage ticket shall be issued at a rate that will afford a lower fare than the regular one-way tariff fare, and that excursion tickets may be issued only to the extent and on the terms set forth in paragraphs (b) and (c) below:

(b) Round-trip tourist fares shall be established on a just and reasonable basis bearing proper relation to the one-way fares authorized by this order, and tariffs governing same shall be filed as promptly as possible with the Interstate Commerce Commission.

(c) For the national encampment of the Grand Army of the Republic and auxiliary and allied organizations at Portland, Ore., in 1918, and for the United Confederate Veterans Reunion, auxiliary and allied organizations at Tulsa, Okla., in 1918, a rate of 1c a mile in each direction via direct routes shall be authorized and confined by certificate of identification to the membership of these organizations and members of their immediate families. For the various state meetings of these organizations held during 1918, fares shall be authorized under like conditions on basis of 2c a mile in each direction and confined to limits of the state in which the meeting is held.

(d) Where public convenience will be served thereby, subject to the approval of the Director General, fares determined by the short line may be applied over longer practicable routes.

(e) Officers, enlisted men, and nurses of the U. S. Army, Navy, and Marine Corps, when traveling in uniform at own expense, shall be granted the privilege of purchasing passage tickets at one-third the regular one-way fare, via route of ticket, applicable in coach, parlor or

sleeping car, as the case may be, when on furlough or official leave of absence, except that this reduced fare shall not be granted on short-term passes from camps or when on liberty from ships or stations to nearby cities. Applicants for such tickets shall be required to submit for inspection of ticket agent military furlough or other official form of leave of absence and to surrender to ticket agent a furlough fare certificate signed by a commanding officer.

(f) Children under five years of age, when accompanied by parent or guardian, shall be carried free; children five years and under 12 years of age shall be charged half fare.

**Sec. 9.**—Commutation fares shall be advanced 10%. Commutation fares shall be construed to include all forms of transportation designed for suburban travel and for the use of those who have daily or frequent occasion to travel between their homes and places of employment or educational institutions.

**Sec. 10.**—Passengers travelling in standard sleeping cars and parlor cars shall be required to pay an additional passage charge of 16  $\frac{2}{3}$ % of the normal one-way fare, and passengers traveling in tourist sleeping cars an additional passage charge of 8  $\frac{1}{3}$ % of the normal one-way fare. The foregoing charges are in addition to those required for the occupancy of berths in sleeping cars or seats in parlor cars.

**Sec. 11.**—The following minimum number of tickets of the class good for passage in sleeping or parlor cars shall be required for occupancy of drawings rooms, compartments or sections in parlor or sleeping cars: Two adult tickets for a drawing room in a sleeping car. Two adult tickets for a compartment. One and one-half adult tickets for a section. Five adult tickets for exclusive occupancy of drawing room in a parlor car.

**Sec. 12.**—Passenger fares or charges for accommodation and transportation of passengers entirely by water, or partly by water and partly by rail, shall be increased proportionately with fares and charges for the transportation of passengers via rail.

**Sec. 13.**—The basis for computing charges for excess baggage transported under lawfully effective tariffs shall be 16  $\frac{2}{3}$ % of the normal one-way passenger fare, with minimum of 15c per 100 lb. and minimum collection of 25c per shipment.

**Sec. 14.**—Tickets purchased prior to June 10, 1918, will not be honored for passage on and after that date, except—

(a) Passengers en route on June 10, 1918, on one-way tickets will be carried to destination by continuous passage without additional charge.

(b) Round-trip tickets, portions of which have been used prior to June 10, 1918, or held by passengers en route on June 10, 1918, shall be honored in accordance with original tariff conditions under which sold without additional payment except that they shall be subject to the same requirements as one-way tickets in respects of additional payment for passage in sleeping or parlor cars as prescribed in section 10.

Tickets made invalid for passage by this order will be redeemed from original purchasers as follows: Unused tickets will be redeemed at amount paid therefor. Partially used one-way tickets will be redeemed by charging tariff fare at time of journey for portion used and refunding difference between such amount and fare at which sold. In redemption of mileage, scrip, or credential forms the purchaser shall be given the benefit for the distance traveled of a net basis pro-

portionate to that which would have applied had the entire book been used according to its contract.

**Sec. 15.**—All passenger fares lower than those hereinbefore prescribed, such as mileage, party, second-class, immigrant, convention, excursion and tourist fares, shall be discontinued until further notice, except that tourist fares shall be reestablished as prescribed in sec. 8, paragraph (b) hereof.

**Sec. 16.**—Tariff provisions intended to assure the long haul to carriers, and which prevent the free interchange of traffic, shall be eliminated.

**Sec. 17.**—Stop-overs on one-way tickets, side trips at free or reduced fares, discounts by use of excess baggage permits or excess money coupon books, and the sale of one-way tickets bearing limit in excess of time necessary to make trip by continuous passage shall be discontinued.

**Sec. 18.**—Optional routes may be used only when specified in tariffs.

**Sec. 19.**—In publishing fares and charges, under this order, tariffs may be used which increase the present fares by fixed percentage to bring them to the bases authorized herein, even though the actual fares so constructed may be fractionally more or less than 3c a mile.

**General.**—**Sec. 20.**—The rates, fares and charges to be increased under this order are those existing on May 25, 1918, including changes theretofore published, but not then effective and not under suspension, except where the Interstate Commerce Commission prior to that date authorized or prescribed rates, fares and charges, which shall have been published after that date, and previous to June 15, 1918, the increases here prescribed shall apply thereto. Such authorized, or prescribed rates, fares and charges not so published shall be subsequently revised when published by applying the increases prescribed herein.

**Sec. 21.**—(a) All schedules, viz., tariffs and supplements, covering passenger fares and baggage charges published under the provisions of this order shall bear on the title page the following:—The fares\* made effective by this schedule are initiated by the President of the U.S. through the Director General, U.S. Railroad Administration, and apply to both interstate and intrastate traffic. This schedule is published and filed on one day's notice with the Interstate Commerce Commission under general order 28 of the Director General, U.S. Railroad Administration, dated May 25, 1918.

(b) All schedules, viz., tariffs and supplements, published to cover freight rates under the provisions of this order shall bear on the title page one of the following legends,—

If all rates therein are to be restricted to apply on intrastate traffic only, use the following:—"The rates made effective by this schedule are initiated by the President of the U.S. through the Director General, U.S. Railroad Administration and apply to intrastate traffic only. This schedule is published and filed on one day's notice with the Interstate Commerce Commission under general order 28 of the Director General, U.S. Railroad Administration, dated May 25, 1918, and amended June 12, 1918."

If all rates therein are to apply on interstate traffic only, use the following:—"The rates made effective by this schedule are initiated by the President of the U.S. through the Director General, U.S. Railroad Administration, and apply to interstate traffic only. This schedule is published and filed on one day's notice with the Interstate Commerce Commis-



sion under general order 28 of the Director General, U.S. Railroad Administration, dated May 25, 1918, and amended June 12, 1918."

If all rates therein are to apply on both intrastate and interstate traffic, use the following:—"The rates made effective by this schedule are initiated by the President of the U.S. through the Director General, U.S. Railroad Administration, and apply to both interstate and intrastate traffic. This schedule is published and filed on one day's notice with the Interstate Commerce Commission under general order 28 of the Director General, U.S. Railroad Administration, dated May

25, 1918, and amended June 12, 1918."

If some of the rates therein are to apply to interstate traffic and others to intrastate traffic, use the following:—"The rates made effective by this schedule are initiated by the President of the U.S. through the Director General, U.S. Railroad Administration, and apply to interstate or intrastate traffic, as provided herein. This schedule is published and filed on one day's notice with the Interstate Commerce Commission under general order 28 of the Director General, U.S. Railroad Administration, dated May 25, 1918, and amended June 12, 1918."

\*On baggage tariffs use word charges.

## Regulations for Protection of Railway Employes.

The Board of Railway Commissioners passed general order 236, May 20, as follows:—Upon hearing the application of the Trainmen's Association of Canada, for revision of order 5888, Dec. 16, 1908, making provision for the protection of railway employes, and upon the reports of the board's Chief Operating Officer and Chief Engineer, it is ordered as follows:

1. Whereas subsec. 3 of sec. 264 of the Railway Act provides that

"There shall also be such a number of cars in every train equipped with power or train brakes that the engineer of the locomotive drawing such train can control its speed, or bring the train to a stop in the quickest and best manner possible, without requiring brakemen to use the common hand brake for the purpose."

Therefore, at least 85% of the number of cars in every train shall be equipped as above required.

2. When more than one engine is attached to a train, the engineer of the leading engine shall operate the brakes.

3. No light engine, nor two or more light engines coupled, when the movement is either on a single track or against the current of traffic on a double track, shall be run a greater distance than 25 miles in any one direction without a conductor appointed for service as such and possessed of the qualifications set out in paragraph (b) of sec. 5 of this order.

4. No railway company shall permit any employe to engage in the operation of trains, or handle train orders, without first requiring such employe to pass an examination on train rules and undergo a satisfactory eye and ear test by a competent examiner.

5. (a) Locomotive engineers must be at least 21 years of age; undergo a satisfactory eye and ear test by a competent examiner; and pass an examination on train rules and regulations, and the proper care and operation of locomotives and air brakes.

(b) Conductors must be at least 21 years of age; undergo a satisfactory eye and ear test, and pass an examination on train rules and regulations and the operation of air brakes.

(c) Telegraph or telephone operators engaging in the operation of trains or handling train orders must be at least 18 years of age, write a legible hand, and pass an examination on train rules and regulations. Telegraph operators must be able to send and receive messages at the rate of not less than 20 words a minute.

(d) Train dispatchers must be at least 21 years of age, be familiar with the line over which they have charge, and pass an examination on train rules and regulations.

(e) Railway companies shall (within 90 days from the date of this order) file with the board a copy of each examination paper for the examinations herein re-

quired to be passed by the employes of such railway company.

6. All railway companies shall strictly conform to the rules and regulations from time to time approved by the Master Car Builders' Association, governing the loading of lumber, logs and stone upon open cars, and the loading and carrying of structural material, plates, rails and girders; and no material of any kind shall be carried on the roofs of cars.

7. (a) All open drains crossing tracks in railway yards shall be safely covered for at least 5 ft. from the gauge side of each rail, except in times of flood, when temporary open drains may be provided if necessary.

(b) No semaphores, signals, poles, high or intermediate switchstands, or piles of material, erected or placed in future, shall be nearer than 6 ft. from the gauge side of the nearest rail.

(c) No structure, except mail cranes, which shall be erected and maintained as directed by order 5647, Nov. 20, 1918, over 4 ft. high, shall hereafter be placed within 6 ft. from the gauge side of the nearest rail without first obtaining the board's approval.

(d) Water stand-pipes shall not be nearer than 2½ ft. from the widest engine cab, and the spout of the stand-pipe shall, when not in use, be fastened parallel with main track, and enginemen are required to see that this is done after using any such pipe.

8. Every person or company offending against any of the foregoing provisions shall forfeit and pay \$50 for every such offence.

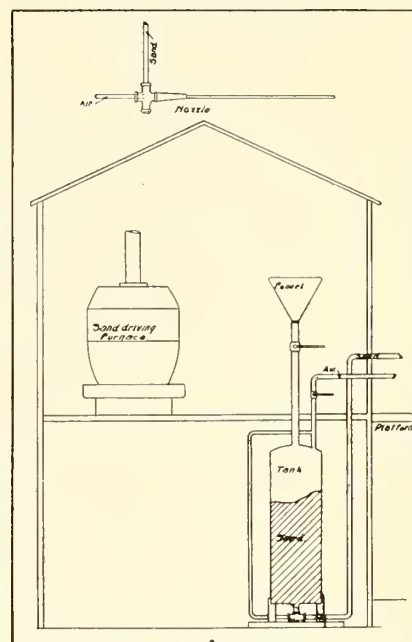
9. Orders 5888 and 12225 (general orders 22 and 65), dated Dec. 16, 1908, and Nov. 9, 1910, made herein are rescinded.

**Protection of Railway Employes.**—The Board of Railway Commissioners passed general order 237, May 31, requiring railway companies to adopt the following rule:—"Where two main tracks parallel each other and are less than 20 ft. from centre to centre, whether such tracks are for double or single track operations, employes in every instance, when stepping out of the way of approaching trains must move to the right of way and not to the other track."

**Great Northern Subsidiaries.**—The Board of Railway Commissioners has approved bylaws of the Great Northern, Crows Nest Southern, New Westminster Southern, and Victoria & Sidney Railways, and Victoria Terminal Ry. & Ferry Co., authorizing H. H. Brown, General Freight Agent, and C. E. Stone, Passenger Traffic Manager, to prepare and issue tariffs of tolls to be charged on those railways.

## Air Sand Blast Machine at Ogden Shops, C.P.R.

The accompanying illustration shows plan of an air sand blast machine, which is used at the C.P.R. shops at Ogden, Alta., for sand blasting tender tanks, cabs,



dome casings, driving wheels, or other parts of locomotives, removing all substances right down to bare iron, and thereby giving the opportunity to do the best painting possible.

### Safety Appliances for Freight Cars.

The Board of Railway Commissioners passed general order 229, May 9, as follows:—Re general order 128, July 20, 1914, and the application of the Grand Trunk Pacific, Canadian Pacific, and Canadian Northern Railways for an extension of time of 18 months within which to equip their freight cars with safety appliances, as required under the said order. Upon hearing the applications at Ottawa, May 7, in the presence of counsel for the railway companies and representatives of the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen, it is ordered that the railway companies subject to the board's jurisdiction be granted an extension of time until Sept. 30, 1919, within which to make the changes required under the said order, the railway companies to continue their present practice of filing with the board monthly reports of the progress made in complying with the requirements of said order.

**Tree Planting for Snow Fences.**—T. A. Hoverstad, Agricultural Commissioner, Minneapolis, St. Paul & Sault Ste. Marie Ry., in acknowledging receipt of Canadian Railway and Marine World for May, containing an article on tree planting for railway snow fences, writes: "I feel that you have given the matter of tree planting along railways a great stimulus forward. I am sure that all the northern roads that are troubled with snow blockades will begin a vigorous and systematic campaign for planting trees in the very near future. Owing to the government having taken over the operation of the railways, we shall not extend our planting this year, but we are doing a certain amount of repair planting, and are cultivating the trees now growing on the right of way."



# Acquisition of Maritime Province Railway by Dominion Government.

Canadian Railway and Marine World for June contained full particulars of the sums voted by parliament to take over seven Maritime Province railways, viz., the Elgin & Havelock, Moncton & Buctouche, St. Martins, Salisbury & Albert, York & Carleton, Caraquet & Gulf Shore, and Kent Northern. As then stated, the first five of these mentioned had already been bought by the Government, but no arrangements had been made for buying the Caraquet & Gulf Shore and Kent Northern, although \$200,000 and \$60,000 respectively were provided in the supplementary estimates passed at the Dominion Parliament's recent session and will be available if the owners wish to accept the same. The Elgin & Havelock, Moncton & Buctouche, St. Martins and York & Carleton Railways were taken over on June 1 and are being operated as Intercolonial Ry. branches. The Salisbury & Albert will be taken over on July 1.

Following are details respecting these railways compiled from official information. The figures as to operation are those for the year ended June 30, 1916.

**Caraquet & Gulf Shore Ry.**—The Caraquet Ry. was incorporated by the New Brunswick Legislature in 1882, and Dominion subsidies were voted in 1883, and the line from Gloucester Jct. on the Intercolonial Ry. to Shippegan Harbor, 68 miles, was opened for traffic by the contractor in 1887, and taken over by the company in 1889. The Dominion Government gave subsidies of \$224,000, and the New Brunswick Government \$180,000. In 1884 the Gulf Shore Ry. was incorporated by the N. B. Legislature, and in 1894-7 the Dominion Parliament voted and paid subsidies of \$53,699.20, the New Brunswick Government providing an additional \$41,950, for the construction of a line from the C. Ry. to Tracadie, 16.78 miles. These lines were generally operated as the Caraquet & Gulf Shore Ry., and were acquired about 1906 by a Toronto syndicate. The present capitalization is \$1,250,000 of common stock and \$500,000 of bonds. The company owns 3 locomotives, 3 1st class passenger cars, and 15 flat cars. Its earnings for the year ended June 30, 1916, were \$81,218.37; operating expenses, \$75,494.05; net revenue \$5,724.32. It carried 19,630 passengers and 44,413 tons of freight, its trains running 32,199 miles. It is said that Sir Jno. Gibson, of Hamilton, Ont., is one of the persons principally interested in the ownership. Geo. Collins, Superintendent, Canadian Northern Ry., Trenton, Ont., is President of the company, and W. B. Cronk, Bathurst, N.B., is Vice President and Manager.

The Minister of Railways stated in the House of Commons, May 17, that the company had asked for the property double what the government was willing to pay. The Minister of Public Works said in the Commons May 23:—"We have offered the owners \$200,000 for the railway. They can't make 200,000 cents out of it in the next 10 years. We won't arbitrate. We won't pay any more. We think they will take it."

The Elgin & Havelock Ry. was built under a charter granted by the New Brunswick Legislature to the Elgin, Petitcodiac & Havelock Ry. Co., with which in 1885 the Dominion Government entered into a subsidy contract for the building of 12 miles of railway, from the Intercolonial Ry. at Petitcodiac to Havelock Corner, which was built and put in operation at the end of that year. In 1888 the

Dominion Parliament voted iron rails from the Intercolonial Ry. valued at \$44,252.82 to the company in aid of the line from Petitcodiac to Elgin, 14 miles, which was completed and opened for traffic in 1890. The company got into financial difficulties and its lines were sold under foreclosure in Oct., 1892, when the present company acquired possession and obtained a New Brunswick charter of incorporation. An extension to Keith's Mills was made subsequently, making the total mileage 28. The company owns 1 passenger and 1 freight locomotive, 1 1st class passenger car and 1 combination car; 2 box, 4 flat cars, and 1 stock car. In addition to the Dominion subsidies noted above, the New Brunswick Government voted \$107,500, and \$13,000 was paid by subsidies by municipalities. The capital stock outstanding is \$44,900, and there are \$50,000 of bonds. For the year ended June 30, 1916, the company earned \$10,997.40, its operating expenses were \$10,700.21, leaving a net income of \$297.10. It carried 10,112 passengers and 15,860 tons of freight by mixed trains which ran 16,200 miles. J. M. Lyons, Moncton, is General Manager. A. H. Robinson, who had the title of Superintendent, has been appointed a conductor in Canadian Government Railways service.

The Kent Northern Ry. extends from Kent Jct. on the Intercolonial Ry. to Richibucto, N.B., 27 miles. It was chartered by the New Brunswick Legislature in 1884 and was granted a subsidy by the Dominion Parliament in 1888, on which \$58,334.27, including the value of iron rails, was paid, while the New Brunswick Government paid \$135,000. The St. Louis & Richibucto Ry. was chartered by the New Brunswick Legislature in 1882, and a line was built from St. Louis to Richibucto, 7.5 miles, in aid of the construction of which the Dominion Government paid \$22,400 and the New Brunswick Government \$21,000. Neither of these lines was prosperous; for a time the St. L. & R. was not operated, and then it was leased to the K.N. Ry. and afterwards abandoned. The K.N. Ry. was acquired by a Toronto syndicate in 1911. Its capital stock at June 30, 1916, was \$75,000 of common stock and \$32,000 of bonds. The company has not made any report of its earnings for some years. G. H. D. Lee, of the National Trust Co., Toronto, is President, that company being executors of the estate of the late Thos. Walmsley, of Toronto, who was one of those principally interested in the line.

The Moncton & Buctouche Ry. extends from Moncton to Buctouche, N.B., 32 miles, and was built under a New Brunswick charter, the Dominion Parliament voting a subsidy in 1889, on account of which there was paid \$101,600. The New Brunswick Government paid \$94,500 as subsidy. After a few years of operation, the line, which was then called the Buctouche & Moncton Ry., was sold under foreclosure proceedings in 1895, and the M. & B. Ry. was organized. Efforts were made by the incorporation of the Buctouche Ry. & Transportation Co., and the Moncton & Northumberland Straits Ry. Co., in 1913, to provide for the extension of this railway, but the plans were not successful. For the year ended June 30, 1916, its gross earnings were \$34,663.55; working expenses, \$31,526.69; net earnings of \$3,136.86. It carried 64,833 passengers and 21,141 tons of freight, its trains travelling 17,972 miles. It owns 3 passenger locomotives, 2 1st class and 1

combination passenger cars, 4 box and 26 flat cars. It has \$250,000 of capital stock outstanding, and \$60,000 of bonds. J. G. Merritt, New York, N.Y., is President.

The St. Martin's Ry.'s history begins with 1871, when the St. Martin's & Upham Ry. was incorporated by the New Brunswick Legislature, and a railway was built from Hampton on the Intercolonial Ry. to Quaco, 30 miles. Towards the construction of this line the Dominion Government gave subsidies in cash or in use of iron rails to the amount of \$83,612.54, and the New Brunswick Government paid \$145,600. By a Dominion Act passed in 1887 the company was authorized to sell its railway to the Central Ry. Co. of New Brunswick, or any other railway company, and up to 1897 it was operated as the southern division of the Central Ry. of New Brunswick, when the Hampton & St. Martins Ry. was organized. After a chequered career the line was sold at the end of 1906 to satisfy a judgment obtained by A. P. Barnhill under foreclosure proceedings. The New Brunswick Legislature authorized the incorporation of a new company to take over and operate the line under the title of the St. Martins Ry., with a capital of \$99,000 and office at Hampton, N.B., the first directors being:—G. W. Vaughan, St. Martins; W. E. Foster, W. G. Scovil, H. A. McKeown, St. Johns; and F. M. Anderson, Campbellton, N.B. Its capital at June 30, 1916, consisted of \$99,000 of stock, and \$90,000 of bonds. Its earnings for the year were \$21,506.10; operating expenses, \$20,587.97; net revenue of \$918.13. It carried 8,580 passengers, and 19,268 tons of freight, its trains running 16,500 miles. It owns 2 freight locomotives, 1 2nd class and 1 combination passenger car, 1 box and 6 flat freight cars. Hon. W. E. Foster, Premier of New Brunswick, is President.

The Salisbury & Albert Ry. is the name given in 1910 to the Salisbury & Harvey Ry., which company acquired it from the liquidators of the old Albert Ry. in 1888. The Albert Ry. was incorporated by the New Brunswick Legislature to build a railway from Salisbury on the Intercolonial Ry. through Albert County. The line extends from Salisbury to Albert, 45 miles, and all of which is laid with steel rails, 56, 58 and 60 lb. It received \$29,391.01 as cash subsidy, and 726 tons of used iron rails and fastenings, valued at \$14,665.45, in 1888 at the time of reconstruction. It also received altogether as subsidies from the New Brunswick Government, \$455,000, and \$70,000 from municipalities. The Albert Southern Ry. was incorporated to build a line from the southern terminal of the S. & A. Ry. to Alma, 16 miles, and from Albert to Harvey Bank, 3 miles. The A.S. Ry. received \$50,460 from the Dominion Government and \$48,680 from the New Brunswick Government, for this number of miles of extension of the S. & A. Ry. After being operated unsuccessfully for several years from 1887, the extension was abandoned and the rails taken up. The S. & A. Ry. has \$150,000 of capital stock outstanding, and no bonded or other indebtedness. It owns 2 freight locomotives, 1 1st class and 1 combination passenger car, 3 box and 25 flat cars. For the year ended June 30, 1916, its earnings were \$42,076.97; operating expenses, \$32,983.58; net earnings of \$9,093.39. It carried 13,328 passengers and 43,687 tons of freight during the year, its trains running 30,620 miles in so doing. The two



latter roads were originally promoted by A. A. Killam, who is now aged 84. E. M. Sherwood, Hillsboro, N.B., is Manager.

The York & Carleton Ry. was built under a charter granted by the New Brunswick Legislature in 1887. The line starts at Cross Creek station on the old Canada Eastern Ry., subsequently taken over by the Intercolonial Ry., and runs to Stanley, 5.85 miles. In 1903 a Dominion subsidy was voted towards an extension from Stanley to Ryan Brook, 4.5 miles, but construction was not undertaken until 1906, when it was completed to Glippen Glen, 3.5 miles, and to Ryan Brook, early in 1907. In 1908 a project was initiated by Dr. D. Moore, President Y. & C. R., and his associates under the title of the Stanley Ry. & Manufacturing Co., for the establishment of industries at Ryan Brook and the extension of the line from there to a junction with the National Transcontinental Ry. at Nappedoggin Lake, 9 miles. Towards the construction

of this line the Dominion Government in 1908 voted a subsidy at the usual rate. Surveys were made, but nothing was done in the way of construction, and the line has continued to be operated from Cross Creek to Ryan Brook, 10.35 miles. This mileage is reported to be laid with steel rails; there do not appear to be any bridges on the line, but there are 11 level crossings, all of which are reported to be unguarded. Its equipment consists of 1 locomotive engine and 1 car. Its earnings for the year ended June 30 were \$4,987.54; operating expenses, \$3,835.38, and net earnings \$1,152.16. It carried 7,461 passengers, and 5,994 tons of freight, its trains making 7,112 miles of mixed train running. The company received \$32,896.00 from the Dominion Government, and \$25,247.00 from the New Brunswick Government as subsidies. Its capital stock outstanding is \$105,900, and there is no bond or other outstanding indebtedness.

## Birthdays of Transportation Men in July.

Many happy returns of the day to:

A. A. Allen, Vice President, Holden Co., Ltd., Montreal, formerly Master Mechanic, Timiskaming & Northern Ontario Ry., born at Grafton, Ont., July 7, 1870.

J. H. Black, ex-Superintendent, Timiskaming & Northern Ontario Ry., now at Toronto, born near Smiths Falls, Ont., July 8, 1874.

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., born at St. Thomas de Montmagny, Que., July 25, 1877.

D'Alton C. Coleman, Assistant General Manager, Western Lines, C.P.R., Winnipeg, born at Carleton Place, Ont., July 9, 1879.

G. C. Conn, ex-Freight Traffic Manager, Pere Marquette Ry., Detroit, Mich., now General Traffic Manager, Buick Motor Co., Flint, Mich., born at Woburn, Mass., July 1, 1867.

H. Darling, Locomotive Foreman, G.T. Pacific Ry., Smithers, B.C., born in Northumberland, Eng., July 27, 1873.

S. E. Dewey, General Eastern Freight Agent, G.T.R., New York, born at Beckenham, Kent, Eng., July 4, 1879.

A. H. Eager, Assistant Superintendent of Rolling Stock, Western Lines, Canadian Northern Ry., Winnipeg, born at Waterloo, Que., July 15, 1868.

F. C. Foy, ex-Canadian Passenger Agent, New York Central Lines, Toronto, now on company's Buffalo staff, born at Toronto, July 5, 1881.

S. J. Hungerford, General Manager, Eastern Lines, Canadian Northern Ry., Toronto, born at Bedford, Que., July 16, 1872.

C. W. Johnston, Assistant General Passenger Agent, G.T.R., Montreal, born at Actonville, Que., July 27, 1879.

M. Kelly, Resident Engineer, Farnham Division, Quebec District, C.P.R., Farnham, born at Thamesville, Ont., July 6, 1874.

T. King, Superintendent, Detroit Division, Western Lines, G.T.R., Detroit, Mich., born at Dunbarton, Ont., July 18, 1869.

A. E. Lock, Superintendent Car Service, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born at Albany, N.Y., July 14, 1879.

G. A. McNicholl, Assistant General Freight and Passenger Agent, Grand Trunk Pacific Ry., Prince Rupert, B.C., born at Montreal, July 31, 1876.

H. D. Mackenzie, Master Mechanic, Canadian Government Railways, Edmundston, N.B., born at Churchville, N.S., July 22, 1864.

J. M. Macrae, District Freight Agent, Canadian Northern Ry., Saskatoon, Sask., born at Stornoway, Scotland, July 31, 1884.

W. G. Manders, General Freight Agent, Western Lines, Canadian Northern Ry., Winnipeg, born at Owen Sound, Ont., July 24, 1876.

Neil Marple, Master Car Builder, Canada Southern Division, Michigan Central Rd., St. Thomas, Ont., born in McKillip Tp., Ont., July 1, 1860.

G. A. Mills, Electrical Engineer, Winnipeg Electric Ry., born at Indianapolis, Ind., July 5, 1885.

J. E. Morazain, Superintendent, District 1, Intercolonial Division, Canadian Government Railways, Levis, Que., born at Wheatland, Que., July 31, 1875.

R. E. Perry, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Drayton, Ont., July 5, 1876.

J. E. Quick, General Baggage Agent, G.T.R., Toronto, born at Richmond, Ontario Co., N.Y., July 10, 1851.

G. G. Ruel, Chief Solicitor, Canadian Northern Ry., Toronto, born at St. John, N.B., July 5, 1866.

George Stephen, Freight Traffic Manager, Western Lines, Canadian Northern Ry., Winnipeg, born at Montreal, July 5, 1876.

Sir Thos. Tait, President, Fredericton & Grand Lake Ry. & Coal Co., Montreal, born at Melbourne, Que., July 24, 1864.

M. M. Todd, Vice President, Grand Valley Ry. and Lake Erie & Northern Ry., Galt, Ont., born there July 22, 1891.

G. A. Walton, General Passenger Agent, Western Lines, C.P.R., Winnipeg, born at Montreal, July 17, 1881.

**Railway Lands Patented.**—Letters patent were issued during May, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Alberta & Great Waterways Ry. ....	13.91
Calgary & Edmonton Ry. ....	2,226.20
Canadian Northern Ry. ....	1,766.00
Edmonton, Dunvegan & British Columbia Ry. ....	85.91
Grand Trunk Pacific Ry. ....	2.68
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. ....	320.00
Total . . . . .	4,414.70

## Report of the Railways Department for 1916-17.

The report of the Railways and Canals Department for the year ended Mar. 31, 1917, was issued recently, in a very much abridged form, as compared with previous years. All maps, plans and illustrations of railway and canal works, and all detail reports of engineers and other officers are omitted, only the direct reports of the chiefs being inserted. Several statistical tables and miscellaneous information relating to previous years, valuable only for reference, are also omitted. The reports of the department's accountant, and of the Comptroller and Treasurer of Government Railways are given in a compressed and rearranged form. The whole report is contained in 79 pages, compared with 416 the previous year, which had maps and illustrations in addition.

The total railway expenditure for the year, including the Quebec Bridge, was \$41,895,886.53, of which \$14,737,326.70 was charged to capital, \$25,799,906.54 to revenue, and \$1,358,653.29 to income. The expenditure on capital account included \$4,490,472.56 for the Intercolonial Ry., \$609,751.71 for the Prince Edward Island Ry., \$3,916,586.20 for the National Transcontinental Ry., \$2,604,279.94 for the Hudson Bay Ry., \$2,733,677 for the Quebec Bridge, \$3,724.98 for the International Ry., \$46,579.38 for the New Brunswick & Prince Edward Island Ry., and \$332,254.93 for the Quebec & Saguenay Ry. The expenditure on income account included \$959,583.88 paid as subsidies on railways, \$215,947.14 for the Board of Railway Commissioners, \$46,630.53 for railway grade crossing fund, and \$44,149.09 for surveys and inspections. The total government expenditure on railways prior to and since Confederation to Mar. 31, 1917, on capital account was \$391,884,025.79, which includes the expenditure on Quebec Bridge account; \$25,000,000 granted to the C.P.R., and \$660,683.09 expended on the Annapolis & Digby Ry. In addition there has been expended out of the consolidated fund \$267,997,373.17, covering the operating expenses of the government lines, and \$75,117,415.47 on subsidies other than that for the C.P.R. main line. Of this amount there was expended prior to Confederation \$10,766,765.54 upon Intercolonial Ry., and \$3,144,735.11 on Prince Edward Island Ry. construction.

**Canadian Northern Ry. Headquarters.** In connection with the change in C.N.R. ownership, and the appointment of all the directors by the Dominion Government, the question of the location of the company's head office is being discussed, at least by press correspondents, some of whom predict a removal from Toronto to Montreal. Sir Robert Borden, in speaking in the House of Commons on May 15, said it might be desirable to bring the National Transcontinental, the Intercolonial and the Prince Edward Island Railways under the same corporate ownership as the Canadian Northern. The opinion prevails that should this be done it might be followed by the removal of the C.N.R. headquarters from Toronto and of the Canadian Government Railways headquarters from Moncton, N.B., and their concentration at Montreal, which would be more in the centre of the system.

**Canadian Government Railways Working Expenses.**—The following sums were voted at the Dominion Parliament's recent session under the supplementary estimate. For year ended Mar. 31, 1918, further amount required, \$8,500,000. For year ending Mar. 31, 1919, \$37,000,000.



## New Rules for Interswitching Freight Traffic.

The Board of Railway Commissioners passed general order 230, May, 17, as follows:—The board hereby rescinds order 4988 (general order 11), dated July 8, 1908, and orders as follows:

1. For the interpretation, application and operation of this order—

(a) "Interswitching" means the movement of freight in cars between the unloading or loading tracks of one carrier, hereinafter called the "terminal carrier," and the point of interchange with another carrier, by whom, singly or jointly with a further carrier, the said traffic has been carried from its point of shipment or is to be carried to its destination, hereinafter called, singly or jointly, the "line carrier," both the terminal carrier and the line carrier which interchanges with the terminal carrier being subject to the board's jurisdiction; the said movement being performed with or without the aid of an intermediate carrier, whether subject or not subject to the board's jurisdiction, hereinafter called the "intermediary."

(b) The "interchange" means the junction between the terminal carrier and the line carrier, or between the terminal carrier and the intermediary, nearest to the point of loading or unloading of the car.

2. This order does not apply—

(a) to tracks used by the terminal carrier for the transfer of freight between cars and its freight warehouse, or for the purpose of trans-shipment from car to car, nor to tracks otherwise set apart for its own working purposes, except team tracks;

(b) to joint movements which both begin and end in the same terminal or group of terminals or adjoining switching districts;

(c) to cars which, having been once properly interswitched for unloading, are reconsigned for unloading elsewhere within the same terminal or group of terminals.

3. Subject to the provisions of sec. 14, carriers shall at all times, according to their powers, furnish an interswitching service equal to the service accorded their own traffic, at all points where interswitching facilities are, or may hereafter be, provided, under the circumstances and at the tolls herein prescribed; provided that no terminal carrier or intermediary shall be obliged hereunder to make any movement exceeding the distances herein specified at the tolls herein prescribed, and that the said distances be irrespective of the location of the interchange and of yard limits or boundaries.

4. The toll of an intermediary subject to the board's jurisdiction shall not exceed, irrespective of weight, \$3 a car for any distance within and including three miles, or \$3.50 a car for any distance exceeding three miles to and including four miles.

5. If the traffic is loaded or unloaded upon private sidings connecting with the terminal carrier's railway, or directly from or into an industry, elevator or yard abutting upon its tracks (commonly known as industrial sidings), or in any public stock yard, the toll of the terminal carrier shall not exceed 1c per 100 lb. for the actual weight thereof, subject to the minimum weight of the line carrier's tariff, for any distance within and including four miles from the interchange; except that the terminal carrier shall be entitled to a minimum charge of \$3 a carload of traffic included in the 7th, 8th and 10th classes of Canadian Freight Classi-

fication, and \$5 a carload of all other traffic.

6. The toll of the terminal carrier upon all traffic other than that referred to in sec. 5, including traffic to or from team tracks, shall not exceed 2c per 100 lb. for the actual weight thereof, subject to the minimum weight of the line carrier's tariff, for any distance within and including four miles from the interchange, except that the terminal carrier shall be entitled to a minimum charge of \$6 a car.

7. Not less than the following proportions of the tolls herein prescribed shall be absorbed in the rate of the line carrier and the remainder shall be an addition thereto:—(a) One-half of the tolls charged by the terminal carrier under sec. 5, as qualified by sec. 9. (b) Of the tolls prescribed in sec. 6, one-half of the tolls permitted under sec. 5, as qualified by sec. 9, as if the movement were to or from private sidings. (c) One-half of the herein prescribed or lower tolls of each intermediary, if any, whether subject or not subject to the board's jurisdiction. Provided that the line carrier may, unless its tariff rate is lower, charge and collect \$12 a car for its haul between the interchange and the point of shipment, or destination, when by reason of such absorption its line charges would otherwise be less than that amount.

8. The appropriate tolls hereinbefore prescribed shall not be exceeded, for the distances herein specified, in each direction, for the movement from and the return to the line carrier of so-called off line transit traffic, and the line carrier shall be subject to the absorption provisions of sec. 7 only when its through rates are the sum of its published rates to and from the stop over point.

9. If an extra car, commonly known as an idler, is used solely to take care of an overhang of long articles loaded on an open car, it shall be charged by the terminal carrier not more than two-thirds of the herein prescribed appropriate toll for the minimum weight of the line carrier's tariff, except that the terminal carrier shall be entitled to a minimum charge of \$3 a car. If interposed between two cars in the same shipment to protect an overhang from each, the idler shall be charged for once only.

10. No charge shall be made for the accessory interswitching of the empty car. If the car is loaded in both directions, the interswitching toll shall be charged for each movement.

11. Subject to the provisions of sec. 14, nothing herein contained shall prevent the line carrier from absorbing the entire toll or tolls charged for interswitching competitive traffic, provided that the traffic and movements so treated are clearly defined in its tariffs.

12. Traffic to or from the United States shall be subject to the provisions of this order at the point of shipment or destination in Canada.

13. If an exceptional rate is published to apply to or from the tracks of the carrier line only, the ordinary rate, which includes the right of interswitching, shall be plainly indicated in the same schedule, and the latter rate shall not exceed the former by more than the appropriate toll herein prescribed for the interswitching service.

14. Except as hereinafter provided, the tolls herein prescribed shall not apply to deprive the initial carrier of the line haul by a reasonable route of traffic loaded or to be loaded on its railway, including sid-

ings connecting therewith, provided it furnishes at the destination, itself or through its connections or by interswitching, the same delivery and facilities as the competing carrier at no greater charge. If a car is expressly ordered by the shipper to be interswitched to another railway, notwithstanding that the initial carrier can furnish the services as above provided, the said initial carrier may, in lieu of the tolls otherwise prescribed herein, charge and collect its ordinary published tariff rate to the interchange, which rate shall be an additional charge against the shipment. Provided, however, that if the said initial carrier fail or neglect to furnish the shipper with a car within 48 hours after it has been requested, or should through movement by the route of the initial carrier be embargoed, the shipper may require the initial carrier to accept and place, and the said carrier shall so accept and place, an empty car of any other carrier, in which case the movement of the empty car in and the loaded car out shall be effected under the provisions of sec. 10 and 5 or 6, as the case may be.

The schedule to give effect to this order shall be published and filed to come into force on July 1, 1918.

### Railway Employees Voting at Ontario Municipal Elections.

Owing to the nature of their employment, a large number of railway employees are, because they are absent from home, precluded from voting at municipal elections. This has been remedied in Ontario by the passing of an act to enable employees, whose employment is such that they are absent from home from time to time, and who have reason to believe that they will be absent on the polling day, to cast their vote at municipal elections before the regular polling day. A polling place is to be kept open in the municipalities, whose councils have passed a bylaw bringing the act into force, for three days prior to the date of polling, exclusive of Sunday, between 9 a.m. and 5 p.m. The clerk of the municipality or his appointee is to be the special returning officer, and separate ballot boxes are to be provided where the municipality is divided into wards. Every person offering himself as a voter must be on the last revised voters' list for the municipality and must subscribe a declaration, showing the railway company by which he is employed, and that he expects to be absent in the course of his employment from the municipality on the regular polling day. The penalty for making a false statement is not less than \$25 nor more than \$100. The ballot box or boxes are to be sealed at the close of the poll, and are not to be opened until the close of the regular poll, when they will be opened and the ballots counted in the regular way.

**Jurisdiction over Taxicabs in Stations.** Outside taxicab drivers at Winnipeg laid a complaint before the Board of Railway Commissioners recently, that some of them were not allowed to enter the station there to do business, but that two or three of them were so allowed. The company operating the Fort Garry union station contended that arrangements for governing the interior of the building was in its hands, and this view was upheld by the commission and the complaint dismissed.



## Summary of Work Done by the Canadian Railway Association for National Defence.

Following is a summary showing the work done by Canadian railways under the direction of the Canadian Railway Association for National Defence (now called the Canadian Railway War Board) from its establishment on Oct. 23, 1917:

**Increases in freight traffic by diversion of cars from over-burdened routes.**—On orders issued by the association, and arrangements made with the railways interested, a total of 14,759 loaded cars have been diverted from congested routes to others which were comparatively free. These cars, many of which were loaded with grain and coal, contained approximately 516,563 tons of freight. Included in the diversions were 2,180 cars which were billed eastbound via the C.P.R. through Fort William for points in Ontario and Quebec and diverted via the "Soo" Line from Emerson to Sault Ste. Marie, being returned to the C.P.R. at the latter point, thus relieving the heavily taxed line east from Fort William.

Diversions of freight routed via C.P.R. from Fort William for Eastern Canada points and overseas were made to the Canadian Northern Ry. at Port Arthur, the cars being returned to the C.P.R. at Sudbury and Ottawa. These diversions via Port Arthur total up to date 403 cars and the arrangement calls for continued diversion as necessary up to 40 cars a day.

One result of these two switches in the movement of eastbound freight is an increase in the movement of grain by rail from the head of the lakes of approximately 3,500,000 bush., in addition to avoiding congestion at the terminals in that territory, and expediting the general movement of cars through that gateway.

The handling of traffic from the Niagara frontier to Ontario points during the winter, when the entire burden is thrown upon the railways operating between Buffalo and Toronto, owing to the suspension of ferry service across Lake Erie, up to this year caused a great deal of delay to freight and cars and interfered with the requisite coal deliveries for consumption in Ontario to such an extent as to have been partly responsible for the fuel shortage in that province during the winter of 1916-1917.

This year, at the first hint of trouble, the association's administrative committee, after going over the situation in detail, delegated one of its members F. F. Backus, General Manager, Toronto, Hamilton & Buffalo Ry., as the association's representative to take full charge of operation of lines between the frontier and Toronto, with authority to switch traffic and locomotives from one line to another as the conditions day by day might demand. Under Mr. Backus' direction, cars were diverted from the over-burdened G.T.R. route to the joint line furnished by the M.C.R., T.H. & B.R. and C.P.R., to the number of 5,081, which means that the total movement of freight from the U.S. to Canada via the Niagara gateway was increased to that extent. These diversions extended over the period from Jan. 6 to Mar. 6, when conditions became practically normal and the necessity for further transfer of cars from the routing prescribed on the billing disappeared. About 60% of the 5,081 cars by which the movement from the frontier was increased as described above contained coal, so that the coal receipts in Ontario during the two months mentioned

were increased by approximately 150,000 tons.

Arrangements were made with the U.S. railway authorities at Washington whereby empty box cars ordered to Canada to assist in making up the number of cars due Canada on the interchange with U.S. lines were diverted to the Delaware and Hudson Co.'s railway, where they are loaded with coal, principally for points in the Province of Quebec, thus increasing the coal receipts in this province, as well as providing box cars for the movement of exports to the U.S. Under this arrangement 5,800 empty box cars were turned over to the Delaware and Hudson, and up to Mar. 20, 3,835 had been loaded with coal as above, containing approximately 135,000 tons of coal. It is the intention to continue this arrangement as long as empty cars are being sent to Canada as at present.

During the latter part of the winter the movement of shipments from points in Ontario to Quebec and Maritime Provinces was increased by the diversion of 1,641 carloads from the C.P.R. and Grand Trunk Ry. to the Canadian Northern at Toronto, in order to relieve the two former companies' lines between Toronto and Montreal and hasten recovery from conditions arising from the series of severe storms from which the railways suffered in Ontario during January and early February.

Another object sought by the association was the avoidance of a repetition of the shortage of foodstuffs which existed in the Maritime Provinces during the winter of 1916-1917, owing to the heavy movement of overseas supplies, which had to be given preference over the lines east of Montreal, and tended at times to crowd out domestic shipments. With this end in view, cars were transferred from the C.P.R. route from Montreal to St. John to the Canadian Government Railways at Quebec and Ste. Rosalie, the movement of freight to the Maritime Provinces being increased in this way by 1,565 carloads, or approximately 45,000 tons of freight.

Diversions of cars from one line to another similar to those given in detail above were made at Sudbury, Ottawa, North Bay, Winnipeg and Saskatoon.

**Handling of Grain, Flour and Coal.**—In Western Canada the activities of the association were directed chiefly to keeping up the deliveries of grain and flour to the east, both for domestic consumption and shipment overseas, and maintaining the requisite movement of cars from the Alberta mines. It is admitted that, in the face of a winter of operating conditions of almost unprecedented severity, when locomotives froze upon the road, water supplies disappeared overnight and at times the men remained on duty only at greatest hardship, the demands of the transports and eastern millers were met and coal was delivered to the prairie cities and towns with a regularity and promptness that could hardly have been expected by the uninitiated had they been able to foresee the obstacles which had to be overcome. Preparations which have been made in the for improvements during this summer, will, it is anticipated, permit of a still better service being provided next winter.

The arrangements made by the association's western committee included the distribution of grain and coal cars between lines as they were required regard-

less of ownership, and the same action was taken in the case of water cars when water supplies failed on account of the severe weather, and water for locomotives had to be hauled long distances.

**Car Supply.**—When the association was formed in October, 1917, one of the first tasks with which it was confronted was the recovery from the U.S. railways of some 20,679 Canadian owned freight cars located in the U.S. in excess of the number of cars of U.S. ownership in this country, that is, the Canadian lines had less than 30% of the number of cars owned by them and required to handle traffic currently. The railways individually had been pressing their U.S. connections to return their cars, but had been unable to make satisfactory progress.

After numerous communications had taken place between the association and the headquarters of the U.S. railways at Washington without the desired result, a committee representing the association proceeded to New York and Washington in an endeavor to establish a working arrangement which would provide for a constant return movement of empty cars from the U.S. to Canada of sufficient magnitude to offset the Canadian losses which had taken place during the previous spring and summer and balance the southbound movement of loaded cars. A result of this conference was an immediate increase in the movement of cars to this country, which continued until the U.S. lines became involved in the aggravated traffic congestions resulting from the unusually severe winter difficulties. The movement was resumed for a time with the advent of more favorable weather and continued until the pressure from Western States, which had millions of bushels of potatoes, corn and grain awaiting cars, became so great that the U.S. Railroad Administration felt it necessary to issue a preference order for movement of empty cars to the lines west of Chicago, which again had the effect of curtailing the deliveries to Canada. Some progress continued to be made however as congestions at U.S. terminals were worked off and delayed cars with freight for Canada reached us. The association was advised by the Car Service Section of the U.S. Railroad Administration that it anticipated a general resumption of the movement of empty cars to Canada early in April.

Following is a table giving particulars of the adverse car balance against Canadian railways on interchange with the U.S. at various dates since Oct., 1917:

	Box cars.	Other cars.	Total cars.
Oct. 1, 1917.....	19,000	1,679	20,679
Dec. 15, 1917.....	19,872	2,247	22,119
Jan. 15, 1918.....	19,898	774	20,672
Feb. 15, 1918.....	16,681	108	16,789
Mar. 1, 1918.....	14,907	3,118*	11,789

\*Balance in favor of U.S. lines.

The balance of 3,118 other cars in favor of U.S. railways is accounted for by the heavy receipts of coal cars, principally via the Niagara frontier, many of which had accumulated on U.S. lines during the severe weather and were moved in abnormal numbers when weather conditions improved. These cars have not yet had time to be made empty and return to the U.S. in sufficient numbers to offset the heavy receipts.

As a result of the negotiations between the association and the U.S. railway authorities at Washington, 14,500 empty box cars were ordered to Canada up to



Mar. 20, in addition to empty cars received in the ordinary course of interchange and distributed principally in Eastern Canada, where the demand for equipment for loading to U.S. points is heaviest.

In addition to empty cars ordered and received, as described in the preceding paragraph, 5,800 empties were ordered to the Delaware and Hudson Co. to be loaded with coal for Canadian points, making the total number of extra cars ordered to Canada, 20,300. Of the 5,800 cars, 3,835 had been received to Mar. 20, the total number of the specially ordered cars received therefore, being 14,260.

Aside from the orders which have been issued by Washington to the U.S. railways covering the movement of empties to Canada as above, the association had requests placed at Washington for 11,770 cars which had not been confirmed to the U.S. railways by the Director General's staff when this was written, on Mar. 20, but which they expect to begin to place early in April.

The heavy demand placed upon Canadian railways during the past winter for transportation of foodstuffs and other supplies for overseas has made it extremely difficult to furnish shippers of hay, pulp, pulpwood, newsprint, lumber and other commodities for export to the U.S. with all the cars for which they have asked. The imperative demand for providing an adequate number of cars for war materials and the continued holding of Canadian cars in the U.S. made it necessary last autumn to prohibit the use of Canadian owned box cars for loading to points beyond the Canadian lines and for our U.S. shipments we are dependent upon what U.S. owned cars are obtainable. The situation as regards equipment for shipments going to the U.S. was further aggravated with the close of navigation on the St. Lawrence River and the Great Lakes on account of the larger number of cars required to handle war supplies the greater distance around Lake Superior and between Montreal and the Atlantic seaboard, which meant that a certain number of U.S. owned cars had to be placed in this traffic which prior to this time had been available for loading to the U.S. The opening of navigation this spring permitted the withdrawal of these cars from overseas business and they are now available for loading to U. S. points.

**Increased Car Efficiency.**—The car shortage with which shippers and railways alike were confronted last autumn, and up to the present time, inability to obtain sufficient additional cars, longer haul of freight during the winter season, increasing traffic, shortage of locomotives and men and necessity for saving coal, called for economy in the use of cars to the greatest possible extent. The association therefore immediately inaugurated a campaign amongst both the shipping public and the railways to ship goods in larger units and thereby reduce the number of cars, engines, men and amount of coal required to move a given amount of traffic. What has been accomplished in this department of the association's activities is outlined in the following figures, showing the average weight of contents per loaded car handled on Canadian railways:

Year 1916 .....	20.91 tons
October, 1917 .....	20.76 "
January, 1918 .....	23.71 "

Taking the Canadian Railway Statistics for the year 1916 as a basis, the increase of approximately three tons a car means that if the record is maintained during 1918, as we have every reason to expect

it will, if not improved upon, 260,663 less car trips will be required this year to handle the number of tons of freight loaded on Canadian railways equivalent to that loaded in 1916 than were required in the latter year. The haulage of that number of cars less to handle the same amount of freight means a saving of approximately 79,000 tons of coal, 13,271 less trains, the use of 122 locomotives and the time of 350 locomotive men and trainmen during the year. Further effects of reduction in the number of cars to be handled will be seen in more expeditious handling of traffic in terminals and a general improvement in transportation conditions in this country, which even now are admitted to be better than in any other country of size engaged in war work.

The campaign for increased loading of cars embraces not only carload traffic, which is controlled to a very great extent by shippers, but to less than carload shipments as well, the handling of which is performed by railway employees. A few months ago a revised plan of handling of this class of traffic was inaugurated with a view to not only reducing the number of cars required, but eliminating rehandling at intermediate points which took place under the old methods, and at the same time delivering the goods at destination in less time. Under this system it is anticipated that the average weight of contents of l.c.l. cars will be increased from about 11,000 lb., as it was formerly, to at least 14,000 lb. For January, when the new system was but partially adopted the record was 12,459 lb. This improvement in car service will mean a saving of approximately 10,000 cars a month.

The general use of interline billing of cars received attention. Under this system a car moving over two or more lines may travel through from shipping point to destination on the original billing, instead of having to be held at junction joints for the preparation of new papers. The adoption of the new system, while meaning radical changes in the accounting methods of some of the railways, is being placed in operation. It is estimated that the delay to cars at junction points which will be avoided is about 500,000 car days a year, and the elimination of this delay represents the service of 44,754 cars.

**Fuel Conservation.**—The efforts of the individual lines to economize in the use of coal were co-ordinated at the formation of the association, and advantageous methods which had existed on one line were circulated amongst others so that the saving in consumption might be increased. The greatest room for fuel conservation, however, was to be found in connection with passenger services, which, during a period years, had grown through competition, and to that phase of transportation special attention was directed. Frequent conferences of the association's committee on passenger transportation have been held, and this committee has painstakingly analyzed the services throughout the Dominion so that unnecessary or duplicate services might be dispensed with and trains on the various lines re-arranged so that reductions made would cause the minimum inconvenience to the travelling public.

Further savings in coal were made through the reduction of speed of both passenger and freight trains, discontinuance of the operation of special passenger travel by elimination of reduced rates and excursions, fully loading freight trains and cars. As a result of arrangements made up to this time, on a per an-

num basis, the reductions in passenger trains are equivalent to 8,000,000 passenger train miles, representing about 400,000 tons of coal, in addition to 100,000 tons additional through increased efficiency in the handling of freight.

**Summary.**—Following is a summary of what the association has accomplished:

Fuel conservation—Saving through reduced passenger services and heavy loading of cars and trains during this year under practices now in vogue (estimated), 500,000 tons.

Increased movement of freight by diversions during congestions arising from unusually severe winter weather, 516,565 tons.

Increase in delivery of empty box cars from United States to Canada under arrangements made by association, 14,260.

Estimated increase in car efficiency during this year through improved handling and heavier loading of cars equivalent to 300,000 car trips.

Freedom from serious congestion in both eastern and western Canada such as was experienced in the winter of 1916-1917, and in the U.S. during the winter of 1917-1918.

Prompt filling of requirements of overseas transports at ports served by Canadian railways.

Increase in coal deliveries to Canada from U.S., 285,000 tons.

### Canadian Government Railways Coal Supplies.

The Minister of Railways gave the following information to the House of Commons recently:—During the year ended Mar. 31, there were purchased in the U.S. for the Canadian Government Railways 568,971 net tons of coal, which were delivered at St. John, N.B.; Quebec, St. Hyacinthe, St. Lambert and Montreal, Que., and at Fort William, Ont. The prices paid per net ton at the points of delivery were:—At Montreal, St. Lambert and St. Hyacinthe, average price, \$6.90 a net ton, f.o.b. cars, all charges paid, including duty and war tax. At Quebec, average price a net ton, \$7.85, delivered f.o.b. cars, all charges paid. At Fort William, Ont., prices, \$5.35½ to \$5.50½ a net ton, delivered f.o.b. cars, all charges paid. Special purchases made owing to coal shortages: At St. John, N.B., 9,352 tons at \$6.40 a net ton, delivered f.o.b. piers, Port Richmond or Greenwich, Pa. This coal was carried by boats owned by the department. For delivery at Fort William, 80,000 tons at \$4.75 a net ton, delivered f.o.b. mines, U.S. points—cost delivered f.o.b. cars at Fort William, average price \$7.44 a net ton, all charges paid.

Of the coal delivered at Montreal, 32,179 tons were transported to points east of that place, the furthest being Campbellton, N.B., 406 miles, at a cost of \$1.65 a ton; the average haul being 108 miles at an average cost of 45c a ton. The price per ton paid to Nova Scotia coal mines for coal during the same year were: \$3.79, \$4.13, \$4.25 and \$4.50 a net ton for run-of-mine coal, and 22.4c a ton additional for screened coal.

**Western Grain Routes.**—The Senate passed a resolution recently for copies of any representations that have been made to the Government as to the alleged diversion of two-thirds of Canada's western grain trade to Buffalo, New York and other United States seaports, for export, and showing the steps taken by the government to turn this traffic to Canadian seaports.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta & Great Waterways Ry.**—J. D. McArthur, president, on returning to Winnipeg, May 3, after a trip of inspection over the line, is reported to have said that the washed out section at Clearwater River had been temporarily repaired, and will be permanently put in order before August, by which time it is expected to complete track laying into McMurray, Alta. It is also hoped to have the line fully ballasted by the autumn. A. McGregor is the sub-contractor on the work. It is not intended to start any further construction at present. (June, pg. 240.)

**Algoma Central & Hudson Bay Ry.**—A press report, June 5, states that owing to heavy floods two bridges, a considerable piece of line, etc., have been carried away, and that traffic has been suspended pending temporary repairs.

**Burrard Inlet Tunnel & Bridge Co.**—The Dominion Parliament has granted an extension of time for two years for starting construction on this projected undertaking. The application for the extension of time was made by the municipalities forming the company in order to protect their interests in the project, upon which they have spent some \$200,000 upon plans for a bridge across the second narrows of Vancouver Inlet and certain preliminary work in connection therewith. (Jan., pg. 12.)

**Canadian Niagara Bridge Co.**—The Dominion Parliament has incorporated a company with this title to build a railway and general traffic bridge across the Niagara River with approaches and terminal facilities. The Canadian end of the bridge is to be located in Bertie or Welland Townships, between Chippewa and Fort Erie, Ont. The provisional directors are: Lord Shaughnessy, Montreal; J. N. Beckley, Rochester, N.Y.; E. S. Cahill, Hamilton, Ont.; W. P. Torrance, Toronto. (May, pg. 186.)

**Central Canada Ry.**—The steel for the superstructure of the bridge across the Peace River at Peace River Landing is being delivered and the preliminary work for its erection is well advanced. It is proposed at present to plank over the railway bridge so as to permit vehicles and foot passengers to cross it, and provision has been made so that when traffic warrants it brackets can be put into position to carry roadway and footpaths. It is expected to have the grading on the 15-mile extension from the further side of the bridge ready for track laying in the autumn. Tracks will not be laid until the completion of the bridge, some time in the spring of 1919. The Dominion Parliament at its recent session voted \$175,000 towards the construction of the bridge referred to above. (May, pg. 186.)

**Edmonton, Dunvegan & British Columbia Ry.**—No further new construction will be done this season, but it is expected to have the ballasting to Spirit River and to Grande Prairie City fully completed by the autumn. (June, pg. 240.)

**The International Bridge & Terminal Co.**, which was incorporated by the Dominion Parliament in 1905 to build a bridge across the Niagara River near Niagara Falls, Ont., and to lay out terminals there, in conjunction with a United States company, has now been given power by the Dominion Parliament to connect its bridge with any railway lines now built or hereafter to be built, and to build branch lines, not exceeding in any

one case 6 miles, and to issue bonds for \$40,000 a mile of such lines. (April, pg. 147.)

**Intercolonial Ry.**—Tenders are under consideration for the construction of a piece of railway 2.7 miles long from Mofatt station, on the I.C.R. main line, to a junction with the International Ry. of New Brunswick, near Christopher, about 7 miles from Campbellton, N.B.

**Kettle Valley Ry.**—The Dominion Parliament has extended for two years the time within which the company may start building a branch from Penticton to the International Boundary at Osogoos Lake; a line to the Copper Mountains and Voight Mining Camp, 15 miles southwest of Princeton; a line from Vernon to Kelowna and Penticton, a line from near Tulameen for 50 miles up the Tulameen River Valley, and a line from Otter Summit to Aspen Grove mineral district, 30 miles.

We are officially advised that the contract let to W. P. Tierney, Vancouver, for construction of the Copper Mountain Branch from Princeton, B.C., covers clearing the right-of-way and grading and building bridges. The contractor started work at the end of April. It was reported that some sub-contracts would be let. The track laying and ballasting will be done by the company by day labor.

A press report states that the company has purchased the buildings at East Princeton, formerly used as a cement plant, and will convert them into repair and machine shops, and that a spur line is to be built to connect them with the main line. (June, pg. 240.)

**Montreal, Joliette & Transcontinental Ry.**—The Dominion Parliament has incorporated a company with this title to build a railway from Montreal, northerly through the counties of Hochelaga, L'Assomption, and Montcalm to Joliette, thence northwesterly to St. Michel des Saints, Berthier County, and thence to a junction with the National Transcontinental Ry., 180 miles. The provisional directors are:—E. J. Walsh, T. F. Delaney, H. S. Short, C. W. Butler, L. J. Kehoe, Ottawa.

The Joliette & Lake Manuan Colonization Ry. Co., which had power to build through the same territory, went into liquidation some time ago, and its assets were offered for sale under a court order in Sept., 1917. (April, pg. 146.)

**Port Canada Docks Ry.**—The New Brunswick Legislature has extended until 1920 the time within which the company may build its projected railway from L'Etang Harbor to St. Croix, N.B. (April, pg. 146.)

**St. John & Quebec Ry.**—At a meeting of directors at Fredericton, N.B., June 6, dissatisfaction was expressed with the progress being made by the Nova Scotia Construction Co. on the section of the line in progress, and a resolution was passed calling upon the contractors to complete the work by Oct. 31. (April, pg. 147.)

**Toronto Terminals Ry.**—Work on the new union station on Front St., Toronto, is being gone on with rapidly. The exterior stone work was completed May 28, with the placing in position of the final stone of the coping, and the interior stone work was started in June. About 15,000 cubic ft. has to be put in position in the ticket lobby. Other work has been in progress continuously, and it is expected that the building will be ready

for occupancy to some extent in September. (Dec., 1917, pg. 471.)

**Van Buren Bridge Co.**—The Dominion Parliament has confirmed an agreement between the Railways Department and the company under which the department leases certain lands owned by the Bridge Co. lying between the International Ry. of New Brunswick and the National Transcontinental Ry. at St. Leonards, N.B., and the track thereon, to Aug. 1, 1934, for \$1,200 a year. The object is to rearrange traffic on the International and the National Transcontinental at St. Leonards by concentrating it at the National Transcontinental station. (June, pg. 248.)

## Rules for Wires Erected Along or Across Railways.

The Board of Railway Commissioners passed general order 231 May 6 as follows:—Upon the recommendation of the board's Electrical Engineer, it is ordered:

1. That the conditions and specifications set forth in the schedule hereto annexed, under the heading, "Rules for wires erected along or across railways," be adopted and confirmed as the conditions and specifications applicable to the erection, placing, or maintaining of electric lines, wires or cables along or across all railways, part 1 being applicable where the line or lines, wire or wires, cable or cables, is or are carried along or over the railway; part 2 being applicable where the line or lines, wire or wires, cable or cables, is or are carried under the railway.

2. That any order of the board granting leave to erect, place, or maintain any line or lines, wire or wires, cable or cables, along or across the railway and referring to "Rules for wires erected along or across railways," shall be deemed as intended to be a reference to the conditions and specifications set out in that part of the said schedule which is applicable to the mode of crossing authorized.

3. That any order of the board granting leave to erect, place, or maintain any line or lines, wire or wires, cable or cables, along or across any railway subject to the jurisdiction of the board, shall, unless otherwise expressed, be deemed to be an order for leave to erect, place and maintain the same according to the conditions and specifications set out in that part of the said schedule applicable thereto, which conditions and specifications shall be considered as embodied in any such order without specific reference thereto, subject, however, to such change or variation therein or thereof as shall be expressed in such order.

4. That general order 113, Nov. 5, 1913, approving of "Rules for wires crossing railways," and the conditions and specifications adopted thereby, be rescinded.

Want of space prevents the publication of the rules here. They can be obtained from the board, at Ottawa.

**U. S. Government Operation of Short Lines.**—The Director General of Railroads has requested Congress to extend the time for the Government to take over short lines, from July 1 to Jan. 1. He also informed the Senate recently that no agreements had been reached with any railway taken over by the government, as to the rate of compensation to be paid, and that no carrier had declined to execute contracts.



## Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

**Canadian Railway Troops' Work.**—A London, Eng., cablegram says: Canadian Railway troops working under machine gun fire, within 600 ft. of the Hun line, have removed nearly 20 miles of standard rail track which is being relaid for a new strategical spur in the fresh zone. Australians and Canadians worked together in accomplishing this. The Australians carried out successful raids which made it possible for the Canadian Railway Troops to get at this line, which previously had been for some time behind the front of the German posts, owing to the British line having been forced back. Each night the Canadians quietly hauled off hundreds of rails, the Australians meanwhile stalking out against the Hun machine gun post. The Canadian Railway Troops were in the heavy fighting in the northern sector, and gained special mention in French orders.

One of the most noted French generals issued the following order:—I wish to express my appreciation and admiration of the splendid way in which ammunition was brought to our guns, and the rapidity with which the old lines were repaired, and new ones constructed.

### PERSONAL NOTES.

**Lieut. F. X. Amoss**, Canadian Railway Troops, who was awarded the Military Cross recently, was in charge of a party engaged on railway work, which suffered severe casualties during an enemy bombardment. After bringing his wounded men back to a place of safety, he found that one man was missing. He went back through intense shell fire, found the man, who was unable to move, and conveyed him to safety. His good judgment and cool behavior saved many casualties.

**Wm. M. Armstrong**, formerly Locomotive Foreman, Canadian Northern Ry., Edmonton, Alta., and later at Port Mann, B.C., who enlisted with the Canadian Railway Troops, and left Canada early in 1917 for France, with the rank of sergeant, has been given a commission as a lieutenant, and is still in active service.

**Lieut. J. Bourke**, Canadian Railway Troops, who was decorated with the Military Cross recently, was engaged on urgent railway construction, and so encouraged his men by his splendid example, that the work was completed under heavy shell fire. On one occasion, during a heavy bombardment, after ordering his men back to a safer place, he found that two men were missing, and at once went back, through intense shell fire, found the men, who were suffering from shock, and brought them to safety, showing great coolness and resource.

**D. M. Brown**, at present on active service overseas, and who has been elected an associate member of the Engineering Institute of Canada, was, from 1906 to 1913, in Grand Trunk Pacific Ry. service, and from 1913 to 1916 with the Edmonton, Dunvegan & British Columbia Ry.

**Major Maurice Burbank**, Canadian Railway Troops, has been given the Distinguished

Service Order. He completed two bridges in 10 hours, under heavy shelling and bombing, and superintended the withdrawal of large quantities of railway material across a river, showing magnificent skill and dash in a most difficult situation.

**F. D. Burpee**, Superintendent, Ottawa Electric Ry., who was granted extended leave of absence, for military service, and went overseas towards the end of 1916, as Major in command of No. 1 Company, 207th Battalion, subsequently reverted in rank, in order to get to France, and was attached to the Canadian Railway Troops as a temporary lieutenant. He has now been gazetted as acting captain.

**Capt. Michael Chapman, M.C.**, reported recently as killed in action in France, was at one time President of Chapman and Walker, Ltd., electrical engineers, Toronto, and prior to that was in Canadian General Electric Co.'s service.



**Lieut. R. S. Richardson**, No. 13 Light Railway Company, R.E., British Expeditionary Force, formerly Superintendent, Canadian Government Railways, Fort William, Ont., placing a wreath on the grave of Lieut. Bruce H. A. Burrows, 12th Field Company, Canadian Engineers, in Bapaume Military Cemetery, Albert, France, Nov. 25, 1917, on the first anniversary of the latter's death.

**Norman P. Dalziel**, formerly Assistant Controller, Canadian Northern Ry., who has been with the Imperial Munitions Board at Ottawa, since early in the war, has been made an officer of the Order of the British Empire.

**D. N. Gill**, heretofore Purchasing Agent, Ottawa Electric Ry., Ottawa, Ont., is training at Niagara camp, Ont., preparatory to going overseas to join the Canadian Railway Troops.

**Lieut.-Col. J. A. Hutchison**, who has been appointed Consulting Surgeon, Canadian Army Medical Corps, in London, Eng., is Chief Medical Officer of the G.T. R. He has been overseas since 1916, and was, for some time, attached to No. 1 Canadian General Hospital at Etaples, France, as Consulting Surgeon. In the same year he was appointed acting Com-

manding Officer and Chief Surgeon of that hospital. After about a year of service in France, he was called to England as Chief Surgeon of the Moore Barracks Hospital, Shornecliffe, and Consulting Surgeon for the Folkestone area.

**H. A. Irving**, formerly chief clerk to Superintendent, Canadian Government Railways, Fort William, Ont., is serving in France with the Canadian Railway Construction Corps.

**F. E. Jackson**, formerly Chief Dispatcher, Canadian Government Railways, Graham, Ont., is serving in France, with the Canadian Railway Construction Corps.

**Lieut. H. Kennedy**, of the Canadian Engineers, was awarded the Military Cross recently for conspicuous gallantry and devotion to duty, in repairing a railway track in spite of very heavy barrage, which broke the track afresh in many places. The work took six hours to complete, during which he was twice blown up by shells and partially buried.

**Lt.-Col. W. B. Kingsmill**, of Saunders, Torrance and Kingsmill, Toronto, solicitors, Michigan Central Rd., who went overseas in command of the 123rd Battalion from Toronto, has been given the Distinguished Service Order.

**Lt.-Col. D. E. MacIntyre, D.S.O., M.C.**, reported wounded recently, is a son of the late D. F. MacIntyre, railway contractor, and prior to enlisting was in C.P.R. service, being engaged on construction on western lines. He went overseas with a Saskatchewan regiment in 1915, and was awarded the Distinguished Service Order in Mar., 1916, and the Military Cross in Nov., 1916. He was in command of a party, who, in the earlier stages of the war, went out on a wire cutting expedition with blackened faces, which is mentioned as one of the earliest uses of camouflage in the war.

**Capt. Clarence Marpole**, who left Canada with the 239th Railway Construction Corps in 1915, and was later transferred to the 3rd Canadian Railway Transport in France, returned to British Columbia early in June on a short furlough.

**Lt.-Col. L. T. Martin, D.S.O.**, who was mentioned in dispatches recently, commands the 7th Canadian Railway Troops. Prior to the war he was in with railway construction work, as a partner in O'Brien and Martin, and is a director of Great Lakes Dredging Co., Thunder Bay Contracting Co., Port Arthur, Ont., and Kennedy Construction Co., Montreal. He was born at Arnprior, Ont., June 11, 1884, and in 1901 was instrument man on the Timiskaming and Northern Ontario Ry., North Bay, Ont.; 1905, Resident Engineer, same road, Englehart, Ont.; 1906 to 1911 contracting on the National Transcontinental Ry.

**E. McDonald**, General Baggage Agent, Canadian Government Railways and Grand Trunk Pacific Ry., Winnipeg, has enlisted for overseas military service.

**Lt.-Col. C. H. Mitchell, C.M.G., D.S.O.**, of Toronto, who has won great distinction in the intelligence branch on the western front, and who was appointed to the British staff on the Italian front towards the end of 1917, has been made a Companion of the Bath, for services in Italy.

**Lieut. Bernard Moberly**, of the Canadian Railway Construction Corps, and son of Frank Moberly, M.Can.Soc.C.E., Barrie, Ont., is reported missing since Mar. 25.

**Major Leslie Mower**, Canadian Rail-



way Troops, has been awarded the Distinguished Service Order for showing great skill and judgment in handling his company amid intense fire, and keeping the lines open until being ordered to withdraw. He then brought back all the railway stock and stores.

W. R. Smith, who is, at present, at the Engineers' Training Depot, St. John's, Que., as a lieutenant, was formerly a resident engineer on the Edmonton, Dunvegan & British Columbia Ry.

W. H. Stewart, formerly Assistant Superintendent, C.P.R., Farnham, Que.,

who has been with the Imperial Munitions Board for two and a half years, first at Ottawa and latterly at Washington, has been appointed Assistant Director of War Supplies, British War Mission, at Washington, D.C.

Lieut. B. L. Reid, Canadian Railway Troops, was awarded the Military Cross recently, for conspicuous gallantry and devotion to duty when in charge of a repair party maintaining a railway track. The track was broken in 28 places, and he succeeded in repairing all the breaks under heavy shell fire.

## Steam Railway Statistics for Year Ended June 30, 1917.

Tables prepared by the Comptroller of Statistics, of the Railways Department at Ottawa, as to steam railway operations in Canada for the year ended June 30, 1917, give the following details:—

Operating Mileage.		
	1916-17.	1915-16.
Ontario . . . . .	11,049	11,320
Saskatchewan . . . . .	6,124	5,378
Quebec . . . . .	4,734	4,733
Alberta . . . . .	4,444	3,894
Manitoba . . . . .	4,194	4,310
British Columbia . . . . .	3,885	3,604
New Brunswick . . . . .	1,959	1,957
Nova Scotia . . . . .	1,422	1,436
Prince Edward Island . . . . .	278	275
Yukon . . . . .	102	102
United States . . . . .	413	426
Total . . . . .	38,604	37,434

An additional 37.98 miles of second track and of 828 miles of yard track and sidings were laid during 1916-17, against 186 miles of second track, and 828 miles of yard track and sidings in 1915-1916.

Capitalization.		
	June 30, 1917.	June 30, 1916.
Stocks . . . . .	\$ 872,829,993	\$ 848,269,488
Consolidated debenture stock . . . . .	216,284,882	176,284,882
Funded debt . . . . .	896,005,116	869,323,449
Total . . . . .	\$1,985,119,991	\$1,893,877,819

Cash subsidies paid during 1916-1917 amounted to \$74,285.68, against \$1,240,434.97 during 1915-1916. The total amount of guaranties authorized is \$407,092,064.

Passenger Traffic.		
	1916-1917.	1915-1916.
Passengers carried . . . . .	53,749,680	49,027,671
Passengers carried 1 mile . . . . .	3,150,127,428	2,727,122,648
Passengers carried 1 mile per mile of road . . . . .	79,829	72,611
Passengers per mile of line . . . . .	1,326	1,309
Receipts per passenger per mile (cents) . . . . .	1.946	1.954
No. of passengers per train . . . . .	59	53
No. of passengers per car . . . . .	16	14
No. of cars per passenger train . . . . .	5.7	5.5
Passenger journey (miles) . . . . .	59	54

Freight Traffic.		
	1916-1917.	1915-1916.
Products of agriculture . . . . .	25,127,453	27,105,711
Products of animals . . . . .	3,980,887	3,906,359
Products of mines . . . . .	42,534,637	37,850,084
Products of forest . . . . .	19,090,682	16,558,529
Manufactures . . . . .	21,921,309	16,867,782
Merchandise . . . . .	6,070,858	4,622,224
Miscellaneous . . . . .	3,151,203	2,748,399
Undistributed . . . . .	39,244	
Total freight carried . . . . .	121,916,272	109,659,088

Tons carried 1 mile.		
	1916-1917.	1915-1916.
Tons carried 1 mile . . . . .	31,186,707,851	28,195,364,264
Tons carried 1 mile per mile of line . . . . .	807,946	753,202
Receipts per ton per mile, cents . . . . .	0.690	0.653
Average train load, tons . . . . .	436	411
Loaded cars per train . . . . .	19.59	19.65
Tons per loaded car . . . . .	22.24	20.91
Average haul, miles . . . . .	256	199

Earnings and Expenses.		
	1916-1917.	1915-1916.
Gross earnings . . . . .	\$313,492,949	\$263,527,157
Less earnings by units		

like Pullman Co. . . . .	2,721,470	1,638,504
Gross earnings used for returns . . . . .	\$310,771,479	\$261,888,653
Operating expenses . . . . .	\$222,890,637	\$180,542,258

Analysis of rail line earnings.		
	1916-1917.	1915-1916.
Freight . . . . .	\$215,245,256.49	\$184,099,887.30
Passengers . . . . .	61,290,290.70	53,097,642.59
Excess baggage . . . . .	569,566.07	478,393.91
Sleeping cars . . . . .	2,832,750.58	2,478,864.56
Parlor and chair cars . . . . .	268,875.33	259,622.10
Mail . . . . .	3,169,910.97	3,049,539.96
Express . . . . .	8,999,073.85	6,845,234.69
Other passenger trains . . . . .	72,110.40	60,728.85
Milk . . . . .	538,486.82	493,234.12
Switching . . . . .	2,380,706.18	1,706,280.33
Special service trains . . . . .	113,832.01	94,954.08
Other freight trains . . . . .	27,652.04	108,893.40
Water transfer freight . . . . .	41,518.50	
	\$295,550,029.94	\$252,773,275.89

Distribution of operating expenses.		
	1916-1917.	1915-1916.
Way and structures . . . . .	\$41,154,193.11	\$36,040,945.06
Equipment . . . . .	46,371,178.39	35,822,494.20
Traffic . . . . .	6,236,810.91	5,560,515.12
Transportation rail line . . . . .	114,327,393.71	92,882,661.24
Transportation water line . . . . .	3,271,892.62	184,824.13
Miscellaneous operations . . . . .	3,962,543.94	3,279,588.42
General expenses . . . . .	7,584,881.55	6,781,574.19
Transportation for investment (Cr.) . . . . .	18,207.15	10,333.38
	\$222,890,637.08	\$180,542,258.98

Train mileage.		
	1916-1917.	1915-1916.
Passenger trains . . . . .	44,083,575	42,449,022
Freight trains . . . . .	62,863,724	60,036,984
Mixed trains . . . . .	8,746,811	8,499,073
Special trains . . . . .	102,990	90,811
Total mileage . . . . .	115,797,100	111,075,890

Equipment.		
	1916-1917.	1915-1916.
Locomotives . . . . .	5,626	5,490
Passenger cars . . . . .	6,377	6,326
Freight cars . . . . .	203,499	201,614
Cars in companies' service . . . . .	18,641	17,708

Accidents.			
Killed.		Injured.	
1916-17	1915-16	1916-17	1915-16
Passengers . . . . .	24	20	291
Employees . . . . .	177	149	1909
Trespassers . . . . .	150	191	124
Non-trespassers . . . . .	64	77	193
Postal clerks and others . . . . .	4	—	46
Totals . . . . .	419	437	2682

Canadian Northern Ry. Freight Clerks, Etc.—A board of conciliation and investigation has been appointed to deal with a dispute between the company and its freight clerks, etc., the members being Chief Justice Mathers, Winnipeg, chairman; C. E. Dafoe, Winnipeg, representing the company; and F. Urry, Port Arthur, Ont., representing the employees.

The Board of Railway Commissioners concluded its western sittings at Winnipeg, June 17, and left the same evening for eastern points.

## Notes to Steam Railway Statistics.

(1) The Bedlington & Nelson Ry. was abandoned and the track removed in 1916.

(2) The Detroit River Tunnel is operated by the Michigan Central Rd., which controls the Canada Southern Ry.

(3) The Inverness Ry. & Coal Co. is operating its railway in Nova Scotia, but no particulars except mileage are given in the statistical table. The Klondike Mines Ry. in Yukon Territory; the North Shore Ry. (formerly the Beersville Coal & Ry. Co.), in New Brunswick, and the Northern New Brunswick & Seaboard Ry. are not being operated.

(4) The Magnetawan Ry. and the St. Clair Tunnel are operated by the Grand Trunk Ry. The earnings of the first named are included in those of the G.T.R., while those of the tunnel are reported in a separate table.

(5) The Nobonsing & Nipissing Ry., 5.50 miles, was taken up several years ago.

(6) The Wabash Ry., while operating in Canada, does not own any railway in the country, but runs over the G.T.R. from Windsor to the Niagara River under a lease. It does both a through and local business in Canada, the officials and agents acting jointly for the G.T.R. and Wabash Ry.

International Railways:—The Dominion railways statistics for the year ended June 30, 1917, contain a new table giving information as to the following companies, all of which are of an international character, operating across the International Boundary. The Detroit River Tunnel is owned by the Michigan Central Rd.; the International Bridge Co. and the St. Clair Tunnel are owned by the Grand Trunk Ry., and the Pullman Co. operates sleeping and parlor cars over several lines in Canada.

	Total revenue.	Total operating expenses.	Total operating revenue.
Detroit River Tunnel . . . . .	\$1,050,000		\$1,050,000
International Bridge Co. . . . .	447,908	\$52,855	395,052
St. Clair Tunnel . . . . .	339,618	135,107	244,510
Pullman Co. . . . .	865,668	487,589	378,078
Van Buren Bridge Co. . . . .	18,275	8,408	9,866

The Dominion Power Board has been constituted for the purpose of co-ordinating the activities of all the government departments in the investigation of fuel and power resources of the Dominion. It consists of Hon. A. Meighen, Minister of the Interior, chairman; A. St. Laurent, Assistant Deputy Minister of Public Works, vice chairman; C. N. Monsarrat, Consulting Engineer, Department of Railways and Canals; W. J. Stewart, Consulting Engineer, Department of External Affairs, regarding International Waterways; John Murphy, Electrical Engineer, Department of Railways and Canals and Board of Railway Commissioners; H. G. Acres, Chief Hydraulic Engineer, Hydro Electric Power Commission of Ontario; O. Higman, Chief Electrical Engineer, Department of Inland Revenue; D. B. Dowling, Geologist, B. F. Haanel, Chief Engineer, Fuel Testing Division, Department of Mines; and J. B. Challies, Chief Engineer and Superintendent Water Power Branch, Department of the Interior, who acts as Secretary.

The Grand Trunk Ry. has entered into an agreement with the Quebec, Montreal & Southern Ry. by which there will be a joint use of the G.T.R. tracks between Napierville and Noyan Jct., Que. The agreement, which is dated Sept. 26, 1917, has been deposited with the Secretary of State at Ottawa only recently.



## The Canadian Railway War Board's Work.

**Accidents to Employes Switching.**—The board does not think that the adoption of an additional rule, as suggested by the Board of Railway Commissioners recently, would be beneficial. Every endeavor is being made to enforce employes compliance with existing regulations. Safety first departments, and local officers of railways, have been directed to bring forcibly before the employes the fact that the latter must not be on the track unnecessarily and that when their work calls for their being so located a sharp look out for approaching trains must be maintained.

**Cars Owned in Canada.**—In the case of Canadian owned cars being received by a Canadian owned line, on car service section orders, for furtherance to another railway, the board considers that such cars, if belonging to the line receiving them should be retained, or if not belonging to the line receiving them should be forwarded to the owner without undue delay, in accordance with car service rules governing in Canada. Such diversions leaving a deficit in the orders as placed by the car service section, a report of the principal cars diverted, with full particulars of the order concerned, should be reported to the board so that the matter may be adjusted with Washington.

It having been reported that arrangements are in effect whereby Canadian owned cars are being placed for loading shipments to U.S. points, and that goods on arrival at boundary points are being transferred to foreign cars, it is the board's opinion that, in view of the present plentiful supply of U.S. cars, such arrangements should be cancelled.

As Canadian owned box cars are being loaded to U.S. points, contrary to instructions, by certain member lines, and the cars are accepted by the Canadian connections of such lines, the previous instructions have been amended to prohibit the acceptance by any member line of a Canadian owned car from a connection coming within the board's jurisdiction, loaded to a point in the U.S. in violation of existing regulations. The responsibility and expense of transferring the goods to a U.S. owned car will then devolve upon the railway at fault. This applies to cars offered in switching as well as road haul service.

**Cars owned in United States.**—The Canadian Fuel Administration has communicated with the board as to still further accelerating the return of coal cars to the U.S., and as some of the railways are still using these cars for return loading, which in many instances results in the equipment travelling long distances from coal mining territory, the board has again pointed out to lines at fault, the urgent necessity for expeditious return of cars to mines, and has notified the lines that their connections have been directed to refuse coal cars used for return loading in violation of the board's regulations. Steps have been taken to stop the practice of some industrial organizations, of using railway owned open top cars in intra-plant service, when such cars are needed for road haul movement of coal, ore, steel, etc.

**Custom Delays.**—Steps have been taken to have customs offices remain open on Saturday afternoons, Sundays and holidays, where necessary to avoid delay to traffic, and in the case of reputable firms for placing of customs cars for delivery on arrival at destination without waiting for clearance.

**Demurrage.**—In reference to the board's ruling on April 29 that demurrage is not properly assessable where shipper was unaware of embargo at time of commencement of loading of car, it has been learned that the practice on U.S. lines calls for assessment of demurrage where car is loaded or partly loaded in violation of embargo and bill of lading not signed by railway representative. It is felt that the adoption of a similar rule in Canada would greatly reduce delays to cars containing embargo shipments.

**Exemptions for Railway Employes.**—Reports having been made by a number of member lines, that there is danger of their operations being seriously impeded by the large number of employes drafted for military service, or who are enlisting voluntarily in anticipation of being drafted, the board decided to present the matter to the Dominion Government, and to seek exemption for railway employes to the extent necessary to ensure satisfactory handling of the country's commerce.

**Explosives on Passenger Trains.**—Application having been made that the regulations for movement of explosives by express in case of emergency remain as heretofore, the board feels that there is danger to passengers' lives when explosives are moved on passenger trains. If an emergency should arise, calling for express service in the movement of explosives, the shipment should be handled by special train.

**Extra charges on freight diverted on account of congestion of billed route.** Protests having been made against the charging of additional tolls for extra movement of diverted traffic, consignees contending that as the congestion which resulted in diversion was not due to any fault of theirs, the rate applicable via original or billed routing should govern, the board holds that when more freight is billed via a certain route than can be handled currently, action has to be taken to relieve congestion, either by embargo or diversion of overflow traffic to open route, and that as consignees undoubtedly benefit by having their goods delivered by some route other than that designated on the billing, rather than to have the movement shut off entirely by placement of embargo, a reasonable charge for extra services performed by the railways can be properly and justly assessed.

**Competition for Labor.**—Member lines have been requested to instruct superintendents and other officers to refrain from competing for employes, by offering increased rates of pay or shorter hours, in view of the interference with railway work and the unrest among labor that would be caused thereby.

**Returned Soldiers Rates.**—The Soldiers Employment Commission, having applied for reduced railway rates for returned soldiers travelling to take up farms, and for their effects, the board has declared itself in sympathy with any movement aiming to facilitate the settlement of returned soldiers on the land, and will deal with any properly established organization, recognized by the Dominion Government as such, on the question of reduced rates, etc.

**Special Trains.**—Several applications for running of special passenger trains for picnics, business excursions, etc., have been refused recently, it being felt that departure from the general policy of avoiding special passenger train movement, except in cases of extreme urgency, could not be made without creating a

precedent which would in all probability result in the operation of special trains for various other objects. The running of special trains to carry circuses has also been refused.

**Suspension of M.C.B. Rules.**—The U.S. Railroad Administration, having suspended the M.C.B. rules, governing interchange of cars, handling of repair bills, and similar matters, J. Coleman, Superintendent, Car Department, G.T.R.; C. V. Van Buren, General Master Car Builder, C.P.R., and G. E. Smart, Superintendent, Car Department, Canadian Government Railways, have been appointed a sub-committee to consider and recommend to the administrative committee what action should be taken to protect the interests of Canadian lines.

**Vestibule Doors, Platforms, Guard Rails, etc.**—The Canadian Railway War Board is not in favor of the Board of Railway Commissioners' proposed regulation, to require that on trains making frequent stops, vestibule doors and platforms are to remain open, and considers that, in the interest of safety of passengers, it is as necessary to have doors and platforms on local trains closed between stations as on through trains. Railway officials having practical knowledge in the matter do not consider the Board of Railway Commissioners' proposal feasible.

**Wages of Railway Employes.**—The negotiations between the railways, represented by a sub-committee of the board, of which S. J. Hungerford, General Manager, Eastern Lines, Canadian Northern Ry., is chairman, and representatives of car and locomotive shop employes, which was referred to in Canadian Railway and Marine World for June, page 238, were resumed at Montreal during June. No result had been announced up to the time of writing (June 22).

The board is prepared to give consideration to the establishment of equivalent working conditions and rates of pay in Canada, to those allowed in corresponding territory in the U.S., but arrangements to be made now with the Federation Trades Committee will refer only to war time conditions and during the war only. The board is willing for present yearly agreements to be amended to permit of cancellation upon 30 days notice by either party.

It is probable that in order to deal effectively with minor and local questions which may arise after the adoption of arrangements which may be made between the sub-committee on wage agreements and representatives of the railway employes' unions, an adjustment committee, somewhat similar to Railway Board of Adjustment No. 1, as described in the Director General of U.S. Railroads order of Mar. 22, will be appointed in Canada, to consist of four representatives of the railway companies and four employes' representatives, with an independent referee.

Geo. Hodge, Assistant to General Manager, Eastern Lines, C.P.R., and Robt. Patterson, representing the G.T.R. on the board's sub-committee on wage agreements, visited Washington recently to ascertain first hand the status of the U.S. wage situation.

The Toronto Transportation Club has decided not to hold its annual outing this year, on account of the abnormal conditions and the restrictions in many directions.



# Steam Railway Statistics for Year Ended June 30, 1917.

In the following table the column head gross earnings includes passenger and freight earnings, as well as miscellaneous earnings from operation; the latter not being shown separately; the next four columns give the operating expenses classified under their various headings, while the last gives the net operating earnings, which are arrived at by deducting the totals of the four columns referred to from the figures in the gross earnings column. The minus (—) mark before figures in the net columns shows that there was a deficit in the operation of the line to the extent of the figures given. The cents have been omitted in all cases, and the figures in the totals show the aggregate earnings, etc., including the cents, omitted from the detailed items.

Name of Railway	Mileage	Passenger earnings	Freight and switching earnings	Gross earnings from operations	Maintenance of way and structures	Maintenance of equipment	Traffic and transportation expenses, etc.	General expenses	Net operating earnings
Alberta & Great Waterways.....	113.20	\$ 22,176	\$ 32,994	\$ 61,992	\$ 21,801	\$ 16,754	\$ 57,106	\$ 5,675	—39,345
Algoma Central & Hudson Bay...	347.80	70,949	809,003	1,156,478	286,489	147,253	416,292	119,476	186,996
Algoma Eastern.....	89.45	46,183	537,042	626,640	72,765	82,213	183,926	16,715	271,020
Atlantic, Quebec & Western.....	103.08	38,039	99,331	139,421	46,887	21,977	67,564	16,309	—13,316
Bedlington & Nelson. (1).....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brandon, Saskatchewan & H.B....	69.45	22,405	20,845	48,107	60,145	16,235	51,994	4,125	—84,391
British Yukon.....	101.12	51,862	219,570	283,888	38,816	19,373	69,136	19,140	137,377
Canada Southern.....	380.54	3,371,483	9,440,972	13,529,977	1,127,943	1,361,934	4,789,677	314,187	5,936,234
Canada & Gulf Terminal.....	35.80	16,680	26,653	46,284	9,668	4,018	19,091	9,210	4,295
Canadian Government Railways									
Intercolonial.....	1,510.40	4,900,673	11,022,539	18,023,955	2,699,393	2,835,778	10,505,880	344,762	1,638,139
International of N. B.....	111.30	36,523	96,206	135,960	70,281	24,261	83,217	3,609	—45,409
St. John and Quebec.....	119.87	28,409	50,271	82,935	32,671	3,959	60,662	3,730	—18,115
Prince Edward Island.....	277.78	162,105	235,746	666,995	167,491	81,325	647,870	15,490	—245,183
National Transcontinental....	2,003.03	832,243	6,095,722	7,113,246	1,535,581	1,720,010	3,826,389	113,296	—82,032
Canadian Northern System.....	9,405.44	6,718,575	32,126,913	42,999,976	7,160,338	5,231,772	17,112,590	1,335,533	12,159,742
Canadian Pacific.....	12,895.40	27,936,712	101,482,004	146,713,115	16,828,216	21,654,950	55,265,923	2,908,351	50,055,673
Cape Breton.....	31.00	6,774	4,928	12,361	8,279	847	11,797	3,284	—11,847
Caraguet.....	84.78	22,904	53,621	80,741	18,344	9,061	44,119	8,433	782
Central Canada.....	48.50	4,192	6,619	11,300	12,616	2,827	12,207	2,785	—19,137
Central Vermont.....	125.20	115,764	191,745	340,645	88,739	31,573	144,447	8,980	66,305
Crows Nest Southern.....	74.18	12,358	83,458	100,762	117,661	19,643	64,346	6,058	—105,174
Cumberland Ry. & Coal Co.....	32.00	13,765	79,435	99,053	24,550	8,708	49,688	4,222	11,882
Detroit River Tunnel (2).....	1.45	.....	.....	.....	.....	.....	.....	.....	.....
Dominion Atlantic.....	274.16	447,767	614,285	1,152,274	200,133	83,088	493,100	53,955	321,996
Eastern British Columbia.....	14.00	1,697	25,894	29,466	9,703	7,655	15,628	1,967	—5,488
Edmonton, Dunvegan & B.C.....	406.80	186,099	265,426	487,605	176,099	61,027	235,063	24,179	—8,764
Elgin & Havelock.....	27.00	1,707	7,450	10,285	5,099	1,287	5,033	481	—1,616
Esquimalt & Nanaimo.....	199.20	180,391	428,910	656,711	110,958	94,769	212,585	9,972	228,426
Essex Terminal.....	11.00	.....	79,795	98,528	15,164	4,352	27,791	18,597	32,441
Fredericton & G. L. Coal & Ry. Co.	35.00	7,681	86,031	94,694	11,371	3,125	34,593	4,369	41,233
Grand Trunk.....	3,567.12	11,134,954	31,735,443	46,951,270	4,502,001	7,625,842	20,416,687	1,182,702	13,179,038
Grand Trunk Pacific.....	1,776.91	1,047,245	4,579,516	6,651,298	1,766,066	1,897,366	2,983,838	209,760	—205,734
Grand Trunk Pacific branch lines..	1,032.06	314,709	1,142,796	1,593,019	504,529	315,400	903,479	72,937	—203,327
Hereford.....	53.06	18,638	50,378	73,187	40,325	16,083	68,311	4,304	—55,837
Inverness Ry. & Coal Co. (3)....	60.91	.....	.....	.....	.....	.....	.....	.....	.....
Kent Northern.....	27.00	7,735	14,692	25,357	7,337	1,333	7,328	1,858	7,500
Kettle Valley.....	355.68	151,258	388,463	569,134	306,133	70,539	278,362	14,259	—100,159
Klondike Mines (3).....	31.81	.....	.....	.....	.....	.....	.....	.....	.....
Lotbiniere & Megantic.....	30.00	4,034	28,867	34,788	11,262	4,368	11,493	6,612	1,052
Magnetawan River (4).....	1.91	.....	.....	.....	.....	.....	.....	.....	.....
Maine Central (Princeton Branch)	5.10	11,618	7,037	19,767	2,113	2,171	11,291	761	3,429
Manitoba Great Northern.....	91.77	5,502	36,016	42,421	71,973	10,556	39,773	3,336	—83,218
Maritime Coal, Ry. & Power Co...	15.00	6,134	90,136	97,543	16,199	6,150	30,052	2,960	42,260
Massawippi Valley.....	35.46	66,812	147,176	221,550	73,718	40,004	158,240	11,354	—61,767
Midland of Manitoba.....	6.40	96,774	178,047	334,502	52,002	60,209	219,180	12,920	—9,810
Montreal & Atlantic.....	184.40	193,474	1,030,397	1,301,293	283,533	289,947	618,166	32,090	77,555
Moncton & Buctouche.....	34.00	12,368	21,024	35,963	11,326	4,083	16,606	5,177	—1,230
Morrissey, Fernie & Michel.....	10.85	11,307	69,931	88,964	9,613	15,494	33,996	21,131	8,729
Napierville Junction.....	27.06	10,215	147,092	158,752	20,195	6,420	56,923	4,866	70,346
Nelson & Fort Sheppard.....	55.42	17,501	28,962	52,559	44,036	8,621	43,481	4,251	—47,830
New Brunswick Coal & Ry. Co....	58.00	12,733	17,341	37,845	23,166	7,638	14,825	5,805	—13,591
New Brunswick & P.E.I.....	36.05	8,403	37,086	50,803	19,769	9,781	46,511	1,852	—27,112
New Westminster Southern.....	15.18	1,934	21,039	23,307	13,392	4,138	10,347	1,401	—5,971
North Shore (3).....	8.63	.....	.....	.....	.....	.....	.....	.....	.....
Northern New B. & Seaboard (3)...	19.80	.....	.....	.....	.....	.....	.....	.....	.....
Nosbonsing and Nipissing (5)....	5.50	.....	.....	.....	.....	.....	.....	.....	.....
Ottawa & New York.....	56.90	79,331	178,931	295,243	78,035	39,375	180,329	10,867	—13,364
Pacific Great Eastern.....	180.27	40,742	93,331	179,671	51,366	61,175	152,407	22,931	—108,209
Pere Marquette.....	198.81	112,974	3,032,750	3,203,336	300,858	258,048	1,078,070	76,668	1,489,691
Phillipsburg Ry. & Quarry Co....	6.00	.....	.....	.....	.....	.....	.....	.....	.....
Quebec Central.....	277.00	445,919	1,215,001	1,758,437	244,664	173,146	721,313	53,230	566,082
Quebec, Montreal & Southern....	192.18	159,019	282,179	462,768	122,963	180,441	189,230	15,189	—45,055
Quebec Oriental.....	100.00	56,628	157,941	222,834	73,057	30,413	84,814	14,411	20,173
Quebec Ry., Light & Power Co....	30.82	8,608	91,361	100,291	9,656	22,013	37,137	11,933	19,550
Red Mountain.....	9.59	2,501	15,294	19,395	11,733	2,437	18,681	941	—14,398
Roberval-Saguenay.....	36.80	12,551	119,819	200,694	38,290	18,269	75,447	21,149	47,357
Rutland & Noyan.....	3.39	9,245	6,440	16,043	3,958	1,969	6,292	755	3,068
Salisbury & Albert.....	45.00	8,758	33,013	45,955	17,126	2,739	15,313	3,995	6,779
St. Clair Tunnel (4).....	1.23	.....	.....	.....	.....	.....	.....	.....	.....
St. Lawrence & Adirondack.....	46.12	222,998	768,884	1,045,605	118,669	57,432	400,026	12,209	457,268
St. Martins.....	30.00	3,694	14,499	19,544	9,744	906	10,750	952	—2,809
Sydney & Louisburg.....	70.27	48,994	691,339	765,763	108,327	205,009	291,385	33,194	127,846
Temiscouata.....	113.00	48,385	162,299	224,561	53,850	29,920	95,003	16,920	28,866
Thousand Islands.....	6.33	7,765	26,701	43,327	4,453	3,504	19,489	3,629	12,241
Timiskaming & Northern Ontario.	328.50	674,048	1,356,276	2,236,299	344,795	270,578	984,698	110,677	525,577
Toronto, Hamilton & Buffalo....	100.30	427,156	1,653,548	2,192,093	213,299	306,436	719,359	68,050	884,948
Vancouver, Victoria & Eastern....	271.22	119,620	334,313	547,186	299,200	104,304	454,465	23,196	—333,980
Victoria & Sidney.....	15.97	25,373	18,985	47,027	4,643	4,055	23,048	2,895	12,383
Victoria Terminal Ry. & Ferry Co.	0.99	1,860	1,035	3,138	469	86	1,345	192	1,044
Wabash (6).....	.....	383,060	3,372,555	3,969,001	307,332	652,744	1,698,321	103,641	1,207,668
York and Carleton.....	10.50	1,653	4,629	6,521	1,846	228	3,223	.....	1,223
<b>TOTALS.....</b>	<b>38,604.20</b>	<b>\$61,200,200</b>	<b>\$917,625,962</b>	<b>\$310,771,479</b>	<b>\$41,154,193</b>	<b>\$46,371,178</b>	<b>\$127,708,501</b>	<b>\$7,584,881</b>	<b>\$97,000,842</b>



# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1914, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 231. May 6.—Confirming conditions and specifications of rules for wires erected along or across railways, and rescinding general order 113, Nov. 5, 1913.

General order 232. May 14.—Prescribing minimum carload weights of tan bark, in box or stock cars under special commodity tariffs, and rescinding general order 221.

General order 233. May 11.—Amending order 227, Apr. 12, 1918, to provide that prescribed time during which Daylight Saving Act, 1918, shall be in force shall be until 2 a.m. on Sunday, Oct. 27, the day fixed in the U.S. for returning to usual time.

General order 234. May 22.—Ruling re protection of old rates on grain shipped prior to Mar. 15, 1918, to interior mills and elevators with published transit privileges and reshipped after new rates came into effect.

General order 235. May 22.—Instructions to agents and conductors for receiving and delivering freight at flag stations.

General order 236. May 20.—Revising rules governing protection of railway employees. This order is given fully on another page.

General order 237. May 31.—Ordering railway companies to adopt, for protection of employees, the rule that where two main tracks parallel each other and are less than 20 ft. from center to center, whether double or single track operation, employees in every instance, when stepping out of way of approaching trains, must move to right of way and not to other track.

27219. May 17.—Authorizing British Columbia Public Works Department to make highway crossing over C.P.R. near Wardner.

27220. May 18.—Dismissing complaint of Nanaimo Board of Trade against withdrawal of Pacific Coast terminal rates to Nanaimo and substitution of an arbitrary over Vancouver rates, with leave to move for further consideration when traffic conditions warrant.

27221. May 18.—Approving proposed location of C.P.R. A2 standard station at Hayter, Alta.

27222. May 15.—Ordering C.P.R. to restore relationship between international rates on wood-pulp from Ottawa on one hand and Sturgeon Falls and Espanola on the other, by filing same rates from Sturgeon Falls and Espanola as concurrently in effect from Ottawa through same frontier gateways to destinations in Central Freight Association territory.

27223. May 18.—Authorizing C.P.R. to make highway over its track on part of Sec. 35, Tp. 8, Osyoos Division, Yale District, B.C.; cost to be paid by Spallumcheen Tp., B.C.

27224. May 20.—Authorizing Canadian Northern Ry. to build spur for Port Arthur Pulp & Paper Co., Port Arthur, Ont.

27225. — May 15.—Ordering that storage yard at Current River, Port Arthur, Ont., consisting of 6 tracks connected with C.P.R. service track at west end and Canadian Northern Ry. track at east end, between points marked A and B on plan, of Dec. 6, 1917, hereby approved, be considered joint yard to be used by both companies for storing, switching and sorting in operation of elevator plants and tracks connected therewith; cost to be determined by board after hearing.

27226. May 21.—Approving Quebec Ry. Light & Power Co.'s Standard Passenger Tariff of Maximum Mileage Tolls, C.R.C. 34, effective June 2.

27227. May 20.—Authorizing C.P.R. to build extension to spur for B. Shragge Iron & Metal Co., and additional spur on Lot 1, Block 3, Parish Lot 35, St. John, Winnipeg.

27228. May 14.—Authorizing G.T.R. to build additional siding facilities for Dominion Steel Foundry Co., Hamilton, Ont.

27229. May 23.—Authorizing Mackenzie, Mann & Co. to build highway over Canadian Northern Ry. at First St. West, Canwood, Sask.; cost of construction to be paid by applicants and maintenance by Canwood municipality.

27230. May 21.—Approving revised location of Hull Electric Co.'s track at Montcalm St. and Chelsea Road, Hull, Que.; and authorizing it to build additional track on Montcalm St. and Chelsea Road and loop on Mountain Road, Fortier St. and Montclair Ave., Hull, and to cross C.P.R. at grade, at Montcalm St.

27231. May 21.—Authorizing Southern Canada Power Co. to erect wires along C.P.R. right of way at Eastman, Que.

27232. May 22.—Approving Crowsnest Southern Ry. bylaws, June 5, 1916, re tariffs of tolls.

27233. May 22.—Approving New Westminster Southern Ry. bylaw, June 2, 1916, re tariffs of tolls.

27234. May 16.—Ordering Canadian Northern Ry. to fence right of way on north side from mileage 62.8 to 65, west of Tollerton, Alta.; to erect cattle guard and return fencing from cattle guard to river on south side at end of fence, mileage 65; work to be completed by June 20, and relieving it from fencing right of way on south side from mileage 62.5 to 65.

27235 to 27237. May 22.—Approving Manitoba Great Northern Ry. bylaw, May 5, 1916; Victoria Terminal Ry. & Ferry Co. bylaw, May 22, 1916, and Victoria & Sidney Ry. bylaws, dated May 22, 1916, re tariffs of tolls.

27236. May 21.—Ordering Michigan Central Rd. to install gates at crossing of Main St., Hagersville, Ont., to be operated by day and night watchmen; 20% of cost to be paid out of railway grade crossing fund; 75% by M.C.R. and balance by Hagersville village; maintenance to be paid, 85% by M.C.R. and balance by Hagersville; work to be completed within 90 days.

27239. May 18.—Amending index 68, p. 6 of proposed Supplement 11 to Canadian Freight Classification 16. This order is given fully on another page.

27240. May 14.—Ordering Kitchener & Northern Ry. to install half interlocking plant at crossing of G.T.R. spur on Lancaster St., Bridgeport, Ont., to be installed by Aug. 31, and rescinding orders 21780 and 22121, respectively May 7 and 26, 1914.

27241. May 21.—Ordering C.P.R. and Ottawa & New York Ry. to arrange train service for connection of certain trains at Finch, Ont., and rescinding orders 23657, May 4, 1915; 23738, May 25, 1915, and 26996, Feb. 16, 1918.

27242. May 23.—Approving Cumberland Ry. & Coal Co.'s Standard Freight Mileage Tariff C.R.C. 6. This order is given fully on another page.

27243. May 27.—Approving agreement, May 10, between Bell Telephone Co. and South Leeds & Pittsburgh Rural Telephone Co., Leeds and Frontenac Counties, Ont.

27244. May 22.—Ordering Kettle Valley Ry. to lay pipe culvert at least 12 in. diameter under its track on north side of public road, Lot 104, at Three Mile, B.C., as soon as Penticton municipality completes culverts under public road east and west of track; to lay similar culvert on north side Fairview Ave.; latter work to be completed by June 30, and rescinding order 26802, Dec. 6, 1917.

27245. May 28.—Authorizing London & Port Stanley Ry. to build siding for Beatty Bros., London, Ont.

27246. May 25.—Dismissing complaint Retail Merchants Association of Canada, Provincial Coal Section of Ontario, against reconignment switching charges by C.P.R. This is quoted fully on another page.

27247. May 27.—Authorizing C.P.R. to build spur for Leaside Munitions Co., Leaside, Ont.

27248. May 27.—Authorizing C.P.R. to build spur for Imperial Oil, Ponoka, Alta.

27249. May 28.—Authorizing C.P.R. to build spur for Vancouver Machinery Depot, Ltd., Vancouver, B.C.

27250. May 28.—Authorizing Winnipeg Electric Ry. to build second track across Canadian Northern Ry. at Portage Ave., Assiniboia municipality, near Westside station, Man.

27251. May 29.—Ordering Esquimalt & Nanaimo Ry. to continue passage of pedestrians over bridge across portion of Victoria harbor, where sidewalks have been built and used for that purpose.

27252. May 20.—Ordering C.P.R. to build two spurs for Imperial Oil, Swift Current, Sask.

27253. May 28.—Recommending to Governor in Council for sanction, agreement between Essex County, Ont., and Michigan Central Rd., Dec. 31, 1917, and dispensing with consent of shareholders and publication as required by sec. 364 of Railway Act.

27254. May 28.—Ordering Quebec, Montreal & Southern Ry. to restore train service in effect prior to Jan., 1918, between Montreal and Sorel; effective June 10.

27255. May 28.—Authorizing C.P.R. to remove regular agent at Oxford, Sask., pending further order.

27256. May 29.—Extending to June 30, time within which G.T.R. shall install gates at Rectory St., London, Ont.

27257. May 28.—Extending for two months from date time within which G.T.R. shall lower roadway at subway at Main St., Komoka, Ont., 1 ft., and raise track 1½ ft.

27258. May 29.—Relieving G.T.R. from providing further protection at first crossing south of Tansley station, Ont.

27259, 27260. May 28.—Extending to July 1, time within which G.T.R. shall install gates at St. Philippe and Ste. Marguerite Sts., Montreal.

27261. May 30.—Prescribing Dominion Express Co.'s delivery limits in Trail, B.C.; and rescinding order 25954, Mar. 22, 1917.

27262. May 30.—Authorizing Henry Ray, March Tp., Ont., to withdraw from Bank of Toronto, \$500 with accrued interest, from date of deposit.

27263. May 30.—Extending to July 31 time within which Great Northern Ry. shall complete rebuilding and repairing of right of way fences and install cattle guards at highway crossings in use on Victoria & Sidney Ry. from northern boundary of Victoria to McKenzie Ave., and make necessary repairs between McKenzie Ave. North and Sidney, B.C.

27264. May 30.—Authorizing C.P.R. to rebuild bridge 77.6 over Little Magog Lake, Que., and

rescinding order 26443, Aug. 18, 1917.

27265. May 30.—Authorizing Canadian Northern Ry. to build across highway between Secs. 20-29, Tp. 50, Range 10, west 4th meridian, Alta.

27266. May 31.—Authorizing Canadian Northern Ry. to make highway crossing over road allowance on Secs. 28 and 33, Tp. 36, Range 27, west principal meridian; cost to be paid by Swan River rural municipality, Man.

27267. May 28.—Ordering Canadian Northern Ry. to make clean out, deepen and widen certain ditches along its right of way in Worthington Tp., Ont., by July 1.

27268. May 23.—Ordering Michigan Central Rd. to divert North Talbot Road, Maidstone Tp., Ont., to Naylor Side Road by diversion to north side of its tracks; 20% of cost to be paid out of railway grade crossing fund; 35% by Maidstone Tp., and balance by M.C.R., also within 60 days to install bell at Naylor Side Road, 20% of cost to be paid out of railway grade crossing fund.

27269. May 31.—Extending for six months from date time limited by order 26784, Nov. 29, 1917, during which Lake Erie & Northern Ry. was authorized to operate cars and trains over Toronto, Hamilton & Buffalo Ry. at Brantford, Ont., pending installation of interlocking plant; crossing to be protected by watchmen.

27270. May 30.—Authorizing Brantford & Hamilton Ry. (electric) to increase its freight rates, except on coal and coke, by 15%, and rates on coal and coke by 15c a ton; increases not effective until it company complies with sec. 327 of Railway Act.

27271. May 21.—Authorizing Canadian Northern Ry. pending further order, to remove regular agent at Malvern station, Ont., caretaker to be appointed to see station is kept clean and heated for passengers on arrival and departure of trains, and care for L.C.I. freight and express matter.

27272. June 4.—Approving U.S. Government express bill of lading for shipments of munitions, war materials and supplies. This order is given fully on another page under "Among the Express Companies."

27273. June 4.—Authorizing G.T.R., for 90 days from date, to build temporary track across Alma and Simpson Sts., Campbellford, Ont.

27274. June 4.—Approving plan showing interchange between G.T.R. and Toronto & York Radial Ry. on Lot 76, Con. 1, Whitechurch Tp., Ont., and authorizing Town of Aurora, Ont., to build said track, a derail to be installed and semaphores placed on G.T.R., and rescinding order 25616, Nov. 3, 1916.

27275. June 4.—Approving changes in location of G.T.R. sidings for Goodyear Tire & Rubber Co. of Canada, New Toronto, Ont., as authorized by order 25418; authorizing G.T.R. to build extension siding on Ninth St., and rescinding order 27186, May 6.

27276. June 1.—Ordering Chatham, Wallaceburg & Lake Erie Ry. to move derrails 200 ft. from crossing at Cedar Springs, Ont., by July 15.

27277. June 1.—Authorizing Quebec & Lake St. John Ry. (C.N.R.) to use bridge over Ste. Anne River at St. Raymond, Que.

27278. June 1.—Extending for one month from date time within which G.T.R. shall install bell at Main St., Komoka, Ont., as required by order 26942, Jan. 28.

27279. June 4.—Approving changes in location of G.T.R. sidings and spurs for Dominion Shipbuilding Co., Toronto.

27280. June 5.—Authorizing Southern Canada Power Co. to erect wires along C.P.R. right of way near Delaire station, Que.

27281. June 5.—Authorizing C.P.R. to build spur for Peters Coal Co. in Lot 20, Con. 13, Medonte, Tp., Ont.

27282. June 1.—Extending for six months from date time limited by order 26758, Nov. 22, 1917, during which Lake Erie & Northern Ry., pending installation of interlocking plant, was authorized to operate cars over G.T.R. at Brantford, Ont., crossings to be protected by L.E. & N.R. watchmen.

27283. June 5.—Authorizing Canadian Northern Ry. to open its revised location from Lot 1017, St. Theophilus parish, to Lot 87, St. Flore Parish, 356 ft.; and use bridge over St. Maurice River at mileage 81.12; speed of trains not to exceed 8 miles an hour.

27284. June 6.—Approving location and plans of James Bay & Eastern Ry. (C.P.R.) station at St. Prime, Que.

27285. June 6.—Authorizing Grand Trunk Pacific Branch Lines Co. to divert road in s.w. ¼ Sec. 20 and s.e. ¼ Sec. 19, Tp. 22, Range 7, west 2nd meridian; and to build across highway, Yorkton District, Sask.

27286. June 7.—Authorizing Quebec, Montreal & Southern Ry. to discontinue Sunday trains, in effect prior to Jan. 1.

27287. June 6.—Ordering that speed of Grand Trunk Pacific Ry. trains operated over bridges at mileage 674.2, 675.0, 676.3, 680.2, 681.8, and 682.5 between Wainwright and Irma, Alta., shall not exceed 8 miles an hour.

27288. June 6.—Amending order 27269, May 31, re crossing of G.T.R. at Brantford, Ont., by Lake Erie & Northern Ry.

27289. June 7.—Relieving Chatham, Wallace-



burg & Lake Erie Ry. from providing further protection at Fourth Concession about 3 miles north of Chatham, Ont.

27290. June 5.—Ordering that clearance order for westbound trains from Stoney Creek, B.C., be not issued until agent there is advised by fan operator at west portal of tunnel that fans are actually, and have been for 10 minutes immediately prior thereto, in operation, order to provide that fans continue until arrival of train at Glacier.

27291. June 6.—Authorizing Canadian Northern Ry. to cross and divert highway in n.w. ¼ Sec. 17, T. 43, Range 11, west 3rd meridian, near Speers, Sask.

27292. June 6.—Authorizing C.P.R. to operate trains over crossing at Delson Jct., without first stopping.

27293. June 7.—Authorizing C.P.R. to build spur for John Coughlan & Sons, Ltd., Vancouver, B.C.

27294. June 7.—Authorizing C.P.R. to carry highway over its track ordered at mileage 84.75, Three Rivers Subdivision, Quebec District, 20% of cost to be paid out of railway grade crossing fund.

27295. June 6.—Authorizing C.P.R. to build spur for John Lucas, Toronto.

27296. June 8.—Ordering Canadian Northern Ry. to stop train on flag at Camden East for passengers beyond Trenton, Ont.

27297. June 7.—Authorizing C.P.R. to build spur for Chisholm Milling Co., Toronto.

27298. June 7.—Approving clearances through warehouse doors on Dryden Timber & Power Co.'s siding at Dryden, Ont.

27299. June 10.—Approving Canadian Northern Ontario Ry. revised location at Achray, Ont.

27300. June 11.—Authorizing C.P.R. to build two additional tracks across road allowance connecting its terminals in Swift Current, Sask.

27301. June 11.—Authorizing Toronto, Hamilton & Buffalo Ry. to take lands in Saltfleet Tp., Ont., for second main track between Stoney Creek and Kinnear stations, and passing siding and other facilities, and for enlarging station grounds at Stoney Creek.

27302. June 12.—Approving agreement, May 15, between Bell Telephone Co. and Soulanges Rural Telephone Co., Soulanges and Vaudreuil Counties, Que.

27303. June 12.—Authorizing G.T.R. to build spur for Imperial Oil, Ltd., Hamilton, Ont.

27304. June 6.—Relieving G.T.R. from providing further protection at Queen St., Mount Forest, Ont.

27305. June 8.—Dismissing Canadian Manufacturers Association applications for reduction in classification of stove putty in barrels, and for order requiring railway companies to carry asbestos cement at 4th class rate, L.C.I.

27306. June 14.—Approving Brantford & Hamilton Ry. (electric) Standard Freight Mileage Tariff C.R.C. 4, effective July 1.

27307. June 12.—Dismissing complaint of Beaver Stove & Machinery Co., Grandmère, Que., against C.P.R. rates on stoves from Grandmère to points on Quebec Central Ry.

27308. June 15.—Authorizing Windsor, Essex & Lake Shore Rapid Ry. to increase freight rates, except coal, by 15%, and coal rates by 15c a ton; rates not to become effective until requirements of sec. 327 of Railway Act have been complied with.

27309. June 15.—Authorizing Chatham, Wallaceburg & Lake Erie Ry. to increase freight rates, except coal, by 15%, and rates on coal by 15c a ton; also passenger rates by 15%; not to become effective until requirements of secs. 327 and 331 of Railway Act have been complied with.

27310. June 15.—Approving Toronto, Hamilton & Buffalo Ry. location of shelter at Gerrie's Crossing near Dundas, Ont.

27311. June 15.—Rescinding order 26911, Jan. 16, and ordering C.P.R. to limit trains over Sanche St. crossing, Ste. Therese, Que., to 10 miles an hour.

**T. & N.O. Railway Commission.**—The Ontario Legislature at its recent session, by sec. 9 of the Statute Law Amendment Act, added a subsection to sec. 2 of the Timiskaming & Northern Ontario Ry. Act, under which a member of the executive council without portfolio may be appointed as one of the commissioners managing the railway, and may be paid a salary therefor without having to vacate his seat in the Legislature or incurring any of the penalties imposed by the Legislative Assembly Act for sitting or voting as a member of the assembly.

The Board of Grain Commissioners applied to the Board of Railway Commissioners at Winnipeg, recently, for an order fixing a uniform allowance to cover invisible loss or natural shrinkage of grain in transit on railways, in respect of which railways will not be held liable for claims for shortage.

## The Necessity of Fuel Conservation.

By Thos. Britt, General Fuel Agent, Canadian Pacific Railway.

[Sir George Bury, Vice President, C.P.R., was invited to address the International Railway Fuel Association's annual convention in Chicago, May 23 and 24, under the auspices of the U.S. Railroad Administration and U.S. Fuel Administration, but being unable to go, sent the company's General Fuel Agent, who read a paper from which the following are extracts.—Editor.]

There is an apparent annual shortage of over 50,000,000 tons to be made up by elimination of wastage, and this is the main topic of my talk. What are we going to do, in other words, to conserve fuel and thus help to win the war? First of all, what are we doing? The most drastic feature of our programme has been the reduction in passenger service, with a simultaneous increase in freight traffic; this, of course, as a matter of sheer necessity to meet war requirements. In the handling of freight, we are seeking to apply the well established principle, that the greater the speed, the greater the consumption of coal. Hence fast freights are by no means a desideratum. In addition, we have endeavored to run our freights at full capacity tonnage, thus securing the maximum results with the minimum of fuel consumption. Another feature of fuel conservation is the elimination of needless delays by a careful arrangement of schedules and rapid dispatching.

To say that good engineering is an essential element in the process of conserving fuel is to mention a basic principle. Our locomotive and boiler house firemen cannot be too well instructed on this point; as with them, in the final analysis, rests the successful issue of our present campaign. Mechanical devices, such as superheaters, automatic fire doors, etc., may accomplish a great deal in the matter of avoiding unnecessary wastage, but certainly the human element is the dominant factor—we cannot get away from it. Give us a body of expert and conscientious firemen, and I dare say the problem is solved. You will understand me well. I would not for one moment impugn their motives. Our firemen are as loyal as any group in the service, but quite frequently they fail to grasp the seriousness of the situation that confronts us, as well as the importance of the occupation which is theirs.

Another tangible means of saving coal to win the war is to substitute wherever possible, utilizing gas house coke for heating stations, etc. A considerable amount of scrap wood can be utilized as fuel in shop boilers, old ties can be gathered up and burned for the same purpose. In many communities dead wood can be used to advantage instead of coal for domestic purposes, in this way affording economy both to the user and the country as a whole. In wooded districts the same suggestion may apply. If we stop to consider that one cord of hard wood is equivalent to a ton of coal, it is easily understood that for every cord of wood so substituted, a ton of coal is released for use in war work.

I might more earnestly ask in exchange for our share in this worthy enterprise that our railways be not overburdened any longer with a lot of foreign matter under the guise of coal. I have found it necessary to have whole carloads of this extraneous matter dumped into the ditch, it being absolutely worthless as fuel for any purpose. There is certainly no econ-

omy there. The situation is infinitely worse if such matter finds its way into ships' bunkers, transports especially, for then the lives of thousands are placed in needless jeopardy. A remedy must be found for all this, and I have no doubt that the government will insist upon the proper cleaning of coal at the mines.

The overloading of tenders has been the cause in the past of an incalculable waste. Thousands of tons have been lost by thus scattering coal along the line. Measures have been taken to avoid this frightful deficit, and yet observation along the right of way of our railways would indicate that there is still room for improvement. Ashpits also are frequently a source of wastage.

Now, looking at the question in a broad way, is it not quite evident that we are just beginning to wake up to the necessity of economy? Have we not been spoiled by a foolish idealism in relation to the resources of our respective countries? Moreover, have we not literally squandered our inheritance by failing to economize? Now that the times are critical, we are endeavoring to amend matters. The pinch of want, together with the soaring of prices, are making us all realize that our only salvation lies in saving.

There are two slogans, which we have all heard quite frequently. One is "Win the war" and the other "Business as usual." Permit me to suggest that one will have to be abandoned. To win the war, we cannot afford to have business as usual. Only a maximum of effort on our part can achieve the desired result. It is with that spirit that I appeal to all the people in the United States, as well as in Canada, to do their bit generously, wholeheartedly, fearlessly. To all those connected in any way with the railways in the United States and in Canada, I would say in closing: "Help Garfield to save fuel and thus bring victory to the allies," or "Keep the home fires burning" wisely.

**International Railway Fuel Association.** The annual convention was held at Chicago, Ill., May 23 and 24. The officers for this year are:—President, L. R. Pyle, Fuel Supervisor, Minneapolis, St. Paul & Sault Ste. Marie Ry., Minneapolis, Minn.; Vice Presidents, C. M. Butler, Supervisor of Fuel, Atlantic Coast Line; J. B. Hurley, General Foreman of Locomotives, Wabash Ry.; H. B. MacFarland, Engineer of Tests, Atcheson, Topeka & Santa Fe Ry. Executive Committee, for two years: B. P. Phillippe, Pennsylvania Rd.; A. N. Willsie, Chicago, Burlington & Quincy Rd.; T. Duff Smith, Grand Trunk Pacific Ry.; R. R. Hibben, Missouri, Texas & Kansas Ry.; for one year, H. B. Brown, Lehigh Valley Rd.; L. J. Joffray, Illinois Central Rd., and H. Woods, Colorado & Southern Ry.

The Association of American Railway Accounting Officers held its annual convention at St. Louis, Mo., May 29 and 30. The officers for this year are:—President, R. E. Burger, Assistant Auditor, Wabash Ry.; Vice Presidents, A. D. McDonald, Vice President, Southern Pacific Co., and J. G. Drew, Vice President, Missouri Pacific Rd. J. Welch, Assistant General Auditor, Chicago, Milwaukee & St. Paul Ry., and John Leslie, Comptroller, C.P.R., Montreal, were elected to the executive committee in place of retiring members.



## Mainly About Railway People Throughout Canada.

Thomas Russell, who was for several years agent C.P.R. at Glasgow, Scotland, died there, June 16.

F. C. Salter, European Traffic Manager, G.T.R., London, Eng., arrived in Canada recently on a short visit.

Edward F. Fauquier, railway contractor, who died in Ottawa May 5, left an estate valued at \$862,924.

F. H. Crockard, President, Nova Scotia Steel & Coal Co., has been elected a member of the Engineering Institute of Canada.

Hon. Frank Cochrane, M.P., ex Minister of Railways and Canals, has rented Hayter Reed's house at St. Andrews, N.S., for the summer.

Mrs. Bassett, wife of W. J. Bassett, of the Bassett Steamship Co., Toronto, died there June 25, aged 59. She was buried at Collingwood, Ont.

Lady Mann, who has been staying in Montreal for some months with her son, has rented Lt.-Col. G. B. Winans' house on Cote St. Antoine Road there.

John Leslie, Comptroller, C.P.R., Montreal, has been elected a member of the Association of American Railway Accounting Officers' executive committee.

C. M. Odell, Chief Engineer, Sydney & Louisburg Ry., Glace Bay, N.S., addressed the Sydney Steel Works Engineering Society recently, on transportation.

J. H. Kerr, for 15 years Secretary of Canadian Westinghouse Co., Hamilton, Ont., died there June 24, after a short illness. He was buried at Pittsburg, Pa., his birthplace.

T. Duff Smith, Fuel Agent, Grand Trunk Pacific Ry., Winnipeg, has been elected a member of the International Railway Fuel Association's executive committee for two years.

R. H. Fish, Superintendent, Strafford Division, Ontario Lines, G.T.R., was presented with a silver cigarette case, by the Governor General, in appreciation of services rendered during a tour through that district recently.

G. R. Pratt, mechanical and fuel engineer, C.P.R., Winnipeg, has been elected an associate member of the Engineering Institute of Canada. He was formerly inspector and engineer on construction, C.P.R. Winnipeg shops.

J. G. McHattie, employed by the Imperial Munitions Board at Ottawa, who there, June 14, aged 28, after a short illness, was fourth son of T. McHattie, formerly Master Mechanic, Eastern Lines, G.T.R., Montreal.

G. B. Harris, Chairman of the Board, Chicago, Burlington & Quincy Rd., died at Chicago, Ill., June 10. He was born at Brookline, Mass., in 1848, and entered railway service in 1866. He was President of the road from 1901 to 1912, since when he was Chairman of the Board.

Stanley W. Crabbe, whose appointment as Superintendent, Schreiber Division, Ontario District, C.P.R., Schreiber, Ont., was announced in a recent issue, was born at Teeswater, Ont., Aug. 9, 1885, and entered C.P.R. service in 1903, since when he has been, to Mar. 11, 1918, section laborer, telegraph operator and agent, consecutively.

Acton Burrows, Managing Director, Canadian Railway and Marine World, and Honorary Secretary-Treasurer, Canadian Electric Railway Association, has been unanimously re-elected, for the

fourth successive year, as chairman of the Canadian Press Association's Trade and Class Paper Section, and as a director of the association.

H. B. Walkem, Assistant Engineer, C.P.R., Vancouver, B.C., was born at Montreal July 31, 1858, which should have been mentioned under "Birthdays of Transportation Men in July," on pg. 281 of this issue. He joined the C.P.R. engineering staff in British Columbia in 1881 and has been in that company's service continuously ever since.

F. M. Holland, General Manager of the Dominion Permanent Loan Co. up to the time of its assignment a short time ago, died at Toronto June 4. The company was concerned in the early construction of the Kettle Valley Ry., and made heavy investments in the Spokane & British Columbia Ry., which ultimately brought about the company's downfall. Mr. Holland was on bail at the time of his death



S. W. Crabbe,  
Superintendent, Schreiber Division, Ontario District, Canadian Pacific Railway.

charged with breaches of law in connection with the conduct of the business.

Charles Clarke, Assistant Commissioner of Industries, G.T.R. lines west of Detroit and St. Clair Rivers, Detroit, Mich., died there May 27. He was born at Clarkson, Mich., Apr. 17, 1848, and entered railway service with the Detroit & Milwaukee Rd., Apr. 1, 1872, since when he was, consecutively, Commercial Agent at Detroit, Mich., and at Buffalo, N.Y., and since Dec. 1, 1912, Assistant Commissioner of Industries at Detroit, for the G.T.R. and subsidiary companies.

J. Louis Santerre, whose appointment as acting Locomotive Foreman, Canadian Government Railways, Doucet, Que., was announced in our last issue, was born at St. Roch, Que., Oct. 10, 1891, and has been, from Feb. 22, 1913, to Aug. 13, 1915, fireman, C.P.R., Quebec, Que.; Aug. 13 to Dec., 1915, laborer Quebec Engineering Co., Quebec, Que.; Dec., 1915, to Jan. 14,

1916, in other service at Toronto; Jan. 14, 1916, to Feb., 1918, fireman, Canadian Government Railways, Parent, Que.; Feb. to May, 1918, hostler, C.G.R., Parent, Que.

Cesaire Senay, who has been appointed General Agent, C.P.R., Quebec, Que., was born at St. Cesaire, Que., Jan. 31, 1873, and entered C.P.R. service in Oct., 1894, since when he has been, to June, 1902, freight clerk and telegraph operator, Mile End, Que.; Mar., 1904, to July, 1912, agent, Atwater, Que.; July, 1912, to Jan., 1913, agent, St. Henry, Que.; Jan. to Dec., 1913, agent, Mile End, Que.; Dec., 1913, to May, 1916, General Agent, Quebec, Que.; May, 1916, to May, 1918, Assistant Superintendent, Laurentian Division, Quebec District, Montreal.

Maurice B. Helston, who has been appointed Superintendent, Division 3, Western District, Canadian Northern Ry., Edmonton, Alta., was born at Michigan City, Ind., Aug. 24, 1869, and entered railway service in 1885, since when he has been, to 1890, operator, Michigan Central Rd.; 1890 to 1898, dispatcher, same road; 1898 to 1909, dispatcher, and chief dispatcher, Northern Pacific Ry.; 1909 to 1914, chief dispatcher, Canadian Northern Ry.; 1914 to Feb. 1, 1917, Superintendent, Duluth, Winnipeg & Pacific Ry., Virginia, Minn.; Feb. 1, 1917, to June 1, 1918, Superintendent, Division 4, Western District, Canadian Northern Ry., Calgary, Alta.

Edward Greig Bowie, who has been appointed General Foreman, C.P.R., McAdam Jct., N.B., was born at Winnipeg, Aug. 20, 1892, and entered C.P.R. service in May, 1907, since when he has been, to Aug., 1912, machinist apprentice, Winnipeg; May, 1912, to Sept., 1914, machinist, Winnipeg and on Western Lines; Oct., 1914, to Apr., 1915, Master Mechanic's clerk, Calgary, Alta.; Apr. to July, 1915, machinist, Angus shops, Montreal; July to Oct., 1915, dynamometer car operator, Eastern Lines; Oct., 1915, to Apr., 1916, Assistant Locomotive Foreman, Ottawa; Apr. to Nov., 1916, Assistant Foreman and Locomotive Foreman, Outremont, Que.; Nov., 1916, to May, 1917, Locomotive Foreman, Sherbrooke, Que.; May, 1917, to June, 1918, Locomotive Foreman, Smiths Falls, Ont.

P. R. Todd, heretofore President, Bangor & Aroostook Rd., Bangor, Me., who has been appointed Assistant to District Director, U.S. Railroad Administration, and General Manager, Bangor & Aroostook Rd., Bangor, Me., was born at Toronto, Dec. 4, 1859, and educated at Ottawa. He commenced railway work as clerk and telegraph operator, St. Lawrence & Ottawa Ry., now part of the C.P.R., and from 1875 to 1882 was Canadian Agent, Ogdensburg & Champlain Ry.; to 1885, General Travelling Agent, National Despatch Line, Chicago, Ill.; July to Dec., 1885, Commercial Agent, New York, West Shore & Buffalo Ry., Albany, N.Y.; to Oct., 1886, chief clerk, General Freight Department, same road, New York; Oct., 1886, to Dec., 1889, General Freight and Passenger Agent, Canada Atlantic Ry., now part of the G.T.R., Ottawa; Dec., 1889, to Feb., 1901, General Freight Agent, West Shore Rd.; Feb., 1901, to Nov., 1903, Second Vice President, New York, New Haven & Hartford Rd.; Nov., 1903, to 1905, First Vice President, same road; Jan., 1907, to Jan., 1913, Vice President, Bangor & Aroostook Rd., and subsequently President, same road, Bangor, Me.



# Canadian Northern Railway Construction, Betterments, Etc.

The Dominion Government has authorized the expenditure of \$7,185,300 for construction and betterment work on various parts of the C.N.R. system during this year. Following are details of the various works proposed to be done:—

The Montreal Terminals are reported to be over 90% completed, and it is expected that they will be ready for operation by the end of August. It is important that the small amount of work yet to be done be completed in order to make the terminal ready for use. The temporary station on Lagachetiere St. was reported practically completed at the end of April, and the tunnel work was very nearly finished at the end of May. The principal work to be done consists of the final completion of the various sections and the linking together of the whole work.

The Duncan-Toronto connecting line which the C.N.R. has partially completed extends from the Duncan station, 11.1 miles from Toronto on the Toronto-Sudbury line to the east end of the C.P.R. bridge over the west Don River. Track has been laid, but before the line can be operated it requires to be ballasted and otherwise finished up, and the interlocking appliance with the C.P.R. tracks have to be installed. The C.P.R. tracks between Leaside Jct. and North Toronto and westerly for a short distance will be used by the C.N.R. as a joint section under an agreement. The completion of the line from Duncan to the C.P.R. line will enable the C.N.R. to operate its trains into North Toronto station, and to utilize its terminal yards at Leaside.

The Leaside Terminal adjoins the C.P.R. freight yard at Leaside Jct., Toronto, and the expenditure will provide for laying out the yards and building shops, etc., for taking care of the equipment on eastern lines.

The buildings to be erected will comprise a 10 stall locomotive house of solid brick on concrete foundation. Each stall will be 14 ft. wide in front, 30 ft. wide at the rear, and 100 ft. long, with drop-pits for drivers, tender trucks and locomotive trucks. It will be steam heated from the boiler room attached, which will also be built of solid brick on concrete foundation and will contain 4 locomotive type boilers. In connection with these buildings will be a turntable 80 ft. in diameter, built on concrete with air tractor. An office for the locomotive foreman, and store house for petty stores will be in close proximity. It will be of solid brick on concrete foundations, and will be one story high with basement. It will be 27 x 46 ft., and will contain locomotive foreman's private office, general office and booking office. The petty stores room will be equipped with an oil storage system. A 60,000 gall. water tank, of wood on concrete foundations, will adjoin. The last building of this group will be a bunkhouse for locomotive men, a one story frame building, 24 x 32 ft., on post foundations, and will contain washroom, with shower baths, lavatories, sitting and bedrooms.

The other terminal buildings will consist of a passenger car yard work shop, a one story frame structure on post foundations, 21 x 48 ft., for car cleaners, etc., and a 2,000 ton capacity frame ice house, 30 ft. wide, 176 ft. long and 24 ft. high at wall plate. It will be built of  $\frac{7}{8}$  in. outside t. and g. sheathing, insulation paper,  $\frac{7}{8}$  in. t. and g. sheathing, 2 x 6 in. studs,  $\frac{3}{4}$  in. t. and g. sheathing, insula-

tion paper, 2 by 3 in. studs, and  $\frac{7}{8}$  in. t. and g. interior sheathing.

The office building will be a 2-story frame structure, 36 x 60 ft., on concrete foundation. The basement will contain a boiler room, coal room, vault, locker room and lavatories for train crews. On the first floor will be the yardmaster's office, agent's office, local office, supervisor's office, lunch room, officers' and men's lavatories, and on the upper floor will be offices for the superintendent, assistant superintendent, chief and other train dispatchers, general office, rest room and women's lavatories.

The stores and office building will be of brick on concrete foundations, 60 x 180 ft.; the stores section will be 2 stories high, and the offices section will be 3 stories high.

There will be three shops, a locomotive shop, 151 x 300 ft., of brick on concrete foundation, with 12 pits; a car shop, 140 x 283 ft., of brick on concrete foundation, and containing 12 tracks; a blacksmith shop, 70 x 100 ft., also of brick on concrete foundation. In connection with these buildings will be a transfer table, 80 x 372 ft., on concrete.

Construction was started early in February, and it is expected to have the whole work completed by the autumn. The yards, etc., have been planned under the direction of A. T. Stewart, Chief Engineer, Eastern Lines. The plans for the buildings were prepared by G. C. Briggs, Supervisor of Buildings, and they are being built direct by the company under his supervision. The site was graded by Franceschini & Co.

**Central District.**—On the Port Arthur-Winnipeg section of the line, the 129 miles between Twin City Jct. and Atikokan will be relaid with 85 lb. steel. The traffic on this section is very heavy. The present rails will be utilized on branch lines.

The Thunderhill branch extends from Swan River, Man., to Preeceville, Sask. An extension of 27 miles has been graded from Preeceville westerly, on which track is to be laid and the extension completed. This work has been delayed hitherto owing to inability to obtain rails.

From Avonlea, Sask., on the Moose Jaw-Radville line, a line is in operation westerly to Gravelbourg and it is proposed to complete the extension to mileage 93 this year, to give facilities to settlers.

A branch from the Saskatoon-Calgary line runs from Delisle, mileage 25.6 from Saskatoon, southerly to Elrose Jct., 50.7 miles from Delisle, and then another branch runs 8.9 miles easterly to Dunblane. The latter extension, known as the Luck Lake branch, is partly graded and it is expected to complete 14 miles this year. It is stated that the settlers have petitioned the company to have the whole of the branch completed, and that they have offered to purchase bonds for \$300,000 to enable this to be done.

A line from Elrose Jct. westerly is in operation to Eston, 84.4 miles, and it is intended to extend it 43 miles to Alsask, where the Saskatoon-Calgary line crosses the Saskatchewan-Alberta boundary. There is a large settlement along the projected route, and some grading has been done. The difficulty of obtaining rails having been overcome, it is expected to have the extension completed in the autumn.

**Moose Jaw Station.**—The Minister of Railways for Saskatchewan is reported to have stated June 2 that an agreement

between the C.N.R. and the Grand Trunk Pacific Ry. for the erection of a union station at Moose Jaw had been approved and only awaited the Board of Railway Commissioners' formal approval. It is expected that the work of linking up the G.T.P.R. tracks with those of the C.N.R. will be taken in hand at once, and that the station will be located on Main St.

**Alberta District.**—Some grading has been done from Hanna, Alta., on the Saskatoon-Calgary line, southeasterly, the branch being intended ultimately to reach Medicine Hat, Sask. It will serve a considerable area of territory north of the Red Deer River, in which there has already been a large settlement. It is intended to complete the first section of 47 miles to the Red Deer River. We were officially further advised recently that tenders for construction have been asked. An Alberta Government official was reported subsequently to have stated that a contract has been let to W. A. Dutton, Winnipeg, for the grading on this branch, and that it is expected to have track laid this year.

On the Goose Lake line, which is another name for the Saskatoon-Calgary branch, it is proposed to lay heavy steel rails from Hanna westerly to Drumheller, 52.2 miles, with a double track from Wayne to Manson Jct., 20.1 miles, to properly service the Drumheller coal district, the mines in which 21,376 tons for the three months ended Mar. 31, and are capable of increasing their output considerably if adequate facilities are provided.

The line from Oliver, Alta., 8 miles east of Edmonton, northerly and easterly to St. Paul de Metis has been graded to mileage 100, and track has been laid on 44 miles, but owing to the difficulty of obtaining rails, nothing more could be done. It is intended to complete the track laying to mileage 100, and to provide a train service to the settlers. The ultimate aim is to extend the line easterly, in order to meet the branch from North Battleford, now running north westerly to Turtleford, 55.7 miles.

**Vancouver Terminals.**—It is proposed to complete the False Creek terminals at Vancouver at the earliest date possible. The funds accruing from the British Columbia bonds are lying at the credit of a trust account in a bank. Tenders are under consideration for additional filling to be done on this site.

**Entrance Into Vancouver.**—The Dominion Parliament has ratified an agreement dated Aug. 11, 1913, made between the Vancouver, Victoria & Eastern Ry. & Navigation Co. (a subsidiary of the Great Northern Ry., U.S.) and the Canadian Northern Pacific Ry. The V.V. & E.R. & N. Co. grants to the C.N.P.R. the equal joint possession and use of its line from the International Boundary at Sumas to the southerly approach of the Fraser River bridge at New Westminster, owned by the Province of British Columbia, and from the northerly approach of the bridge to Vancouver, at a rental of  $2\frac{1}{4}\%$  a year upon a capital value of \$3,985,448.75, to be increased by  $2\frac{1}{4}\%$  a year on any additional capital expenditure necessary and agreed upon, provided always that if similar facilities shall be granted to any other railway company, the rental shall be reduced to 2% for the first additional company, and to  $1\frac{1}{2}\%$  for additional companies. The C.N.P.R. is also to pay on a mileage basis the cost of maintenance and operation of the property leased. Either company may connect branch lines with



the railway, but the C.N.P.R. is not to use the V.V. & E. Ry. spur tracks, or industrial sidings in New Westminster, except to reach its own station and team tracks. The agreement contains provisions as to the operation of trains, the settlement of differences by arbitration, and the declaration that the C.N.P.R. shall make its own agreement with the B.C. Government for the operation of its trains across the Fraser River Bridge.

**Dominion Legislation.**—The Dominion Parliament has extended the time within which the Toronto, Niagara & Western Ry. may build its projected railway from Toronto to Hamilton and thence to the International Boundary at Grand Island or Niagara Falls, Ont., and with the consent of the authorities, to a point in the State of New York, with a branch from St. Catharines through Thorold to Welland. The bill met with considerable opposition, but was passed on a statement by the Minister of Railways that the company is absolutely owned by the C.N.R., and that therefore all its property and rights will pass to the Dominion Government on the taking over of that company; and that all restrictions heretofore made with regard to the route of the line in Toronto still exist and will be observed by the government. No construction has been done on the line, but \$1,500,000 has been expended upon surveys and right of way.

The Dominion Parliament has authorized the company to build a line from near the head of Long Lake, near Longue-lac, by the shortest possible route northerly and westerly to a junction with the National Transcontinental Ry. east of Lake Nipigon, Ont.

**Expenditures Necessary for Completion.** In connection with the second reading of the bill supplementary to chap. 24 of the statutes of 1917, respecting the Canadian Northern Ry. and the Dominion Government relationship thereto, during the recent parliamentary session, Hon. A. K. Maclean, acting Minister of Finance, gave a great many details respecting the company's affairs. One of the tables gave estimates of the amounts necessary to complete lines and terminals in Western Canada which were under construction at Sept. 30, 1917. It is as follows:—

	Miles	Estimated cost.
<b>Manitoba—</b>		
Portage Jct.—Paddington.....	4.58	\$681,822
<b>Saskatchewan—</b>		
Swift Current .....	55.75	825,771
Elrose extension .....	50.00	353,673
Vonda north easterly .....	25.00	240,212
Thunderhill branch .....	47.27	452,772
Luck Lake Branch .....	35.00	473,626
N. Battleford—Turtleford ....	5.21	52,876
<b>Alberta—</b>		
Hanna—Medicine Hat .....	144.76	3,344,296
Calgary—MacLeod .....	103.28	1,609,392
Strathcona—Calgary .....	32.66	566,029
Peace River .....	42.52	571,178
Oliver northerly .....	115.00	911,978
MacLeod—Pincher Creek .....	34.00	463,836
<b>British Columbia—</b>		
Vancouver Island lines (ABC) ..	100.00	682,368
(D) .....	45.57	1,182,603
Okanagan branches .....	141.00	4,460,335
New Westminster to Steveston ..	13.35	138,049
<b>Total .....</b>	<b>994.95</b>	<b>\$17,040,236</b>

Following are the details as to terminals, etc.:—

	Miles	Estimated cost.
<b>Moose Jaw, Sask.</b> .....	<b>7.95</b>	<b>\$461,794</b>
<b>British Columbia—</b>		
Vancouver .....	2,162,309	
Car ferry .....	99,169	
Steveston .....	60,745	
Port Mann .....	54,679	
New Westminster .....	226,085	
Victoria .....	853,125	

**Total .....** \$3,917,906

The grand total of the estimated cost of the completion of the lines is therefore \$20,958,142.

## Freight and Passenger Traffic Notes.

The Canadian Northern Ry. is reported to have resumed its train service from Quebec to Valcartier Camp, Que.

The Reid Newfoundland Co. put an increased passenger fare schedule in operation on its railway June 1, by authority of an order-in-Council.

The C.P.R. has not, up to the time of writing, made any provision in its summer time-table for running a special boat train between Fort William and Winnipeg.

The C.P.R. in its summer schedule for the B.C. coast steamship service has provided for a stopover of an hour and a half at Victoria. The steamship continues to arrive at Victoria from Seattle at 1.15 p.m., but leave for Vancouver at 2.45 o'clock instead of 2 p.m. as formerly.

The Canadian Northern Ry. is giving up to Sept. 30, in conjunction with the Grand Trunk Pacific Ry., a special passenger rate from Calgary, Edmonton and intermediate points, under which a rail and steamship trip may be taken to Prince Rupert, Victoria, Seattle and Vancouver, the return journey to be completed by Oct. 31.

The United States Shipping Board held a sitting at Seattle, Wash., June 5, when the position of the Grand Trunk Pacific Steamship Co., in relation to the Alaska freight and passenger rate question was discussed. Members of the board started work on May 11, and visited every Alaskan port and the several ports in the State of Washington interested in the Alaskan traffic.

The Grand Trunk Pacific Ry. started, on June 1, to issue at Calgary, Edmonton and intermediate points round trip tickets to Vancouver, Victoria or Seattle, good to return to Oct. 31. The are available on G.T.P.R. to Prince Rupert, and on the G.T.P.R. steamships to Vancouver, etc., and from Vancouver back to starting point by Canadian Northern Ry. They will be issued to Sept. 30.

The railways starting from Edmonton,

Alta., of which J. D. McArthur is president, are running a series of settlers excursions to the Grande Prairie, Pouce Coupe and Peace River districts of Alberta. The first excursion, which left Edmonton June 4, consisted of about 50 men, representing groups of farmers in various parts of Canada and the United States desirous of investing money and settling in the new country.

A regular train service was put in operation for the first time for some months on the Pacific Great Eastern Ry.'s North Vancouver - Whytecliffe section, with Sergt.-Major Jas. Robinson, a returned soldier, in charge of traffic. The company, which is now owned by the British Columbia Government, also put in operation on June 2 a tri-weekly train service between Squamish and Clinton, B.C., connecting at Squamish with steamboat to Vancouver. The trains to Clinton leave Squamish on Tuesdays, Thursdays and Saturdays, and the return trains on Mondays, Wednesdays and Fridays.

The car ferry service between Tormentine, N.B., and Port Borden, P.E.I., was discontinued June 15, but it is expected it will be resumed early in August. Trains 13 and 14 running to and from St. John in connection with the car ferry, are discontinued as between Moncton and Tormentine. Through rail and steamer service between New Brunswick and Prince Edward Island, via Point du Chene and Summerside, was resumed June 24. The steamship leaves Summerside at 9.10 a.m. and arrives at Point du Chene about noon, connecting there with a train leaving for Moncton at 12.45 p.m., and connecting with the Ocean Limited for Montreal, and train 13 for St. John and Boston. The steamship leaves Point du Chene for the return trip to Summerside at 5.30 p.m.

**Coal Production in Alberta.**—During the three months ended Mar. 31, 810,972 tons of coal were mined in Alberta against 744,700 tons for the same period of 1917. The quantity shipped to Manitoba increased from 33,003 tons to 98,195; the quantity shipped to Saskatchewan and British Columbia is not given.

## Canadian Pacific Railway's Honor Roll 35.

Beaumont, Harold Sykes	Cranesman	West Toronto	Gas poisoning
Bird, John	Storeman	Crabbrook	Gas poisoning
Breen, Joseph	Locomotive fireman	Kenora	Wounded
Brown, Joseph A.	Clerk	Winnipeg	Killed in action
Colyer, Walter	Freight carpenter	North Bay	Wounded
Cook, Daniel	Boiler maker	West Toronto	Shell shock
Currie, Walter A.	Cook	Montreal	Wounded
Daniel, George	Clerk	Winnipeg	Died of wounds
Davidson, Walter	Trainman	Schreiber	Killed in action
Donaldson, David	Clerk	Calgary	Killed in action
Elliott, Sidney	Checker	Toronto	Wounded
Favreau, Hector	Car carpenter	Angus	Gas poisoning
Gerhart, Albert Howard	Apprentice	Vancouver	Gassed
Gordon, Henry Hartley	Material delivery man	West Toronto	Killed in action
Greenwood, R. J. A.	Laborer	West Toronto	Gassed
Halliday, Wm. Charles.	Fireman	Kenora	Killed in action
Harrison, Alfred G.	Bridgeman	Ontario District	Wounded
Harrison, Geo. Jerod	Boiler washer's helper	Moose Jaw	Wounded
James, William	Fireman	West Toronto	Killed in action
Johnson, Jas. Albert	Porter	Fort William	Died of wounds
Kelly, Benjamin.	Sheeter	Winnipeg	Wounded
MacDonald, Angus Norman	Conductor	Moose Jaw	Wounded
McDonald, Hugh John	Fitter	Lambton	Wounded
McLardy, Frank Edgar	Night operator	Woodstock, N.B.	Killed in action
McLeod, John	Wiper	Regina	Wounded
Matthews, George	Locomotive fireman	Moose Jaw	Wounded
Murphy, James	Train clerk	Kenora	Killed in action
Murray, Jack Beattie	Brakeman	MacLeod	Gassed
Ogilvy, Ralph Wardlaw	Clerk	Vancouver	Wounded
Owen, William	Fitter's helper	Lambton	Killed in action
Reinstein, Louis Frederick	Biller	Montreal	Wounded
Rothwell, John G.	Clerk	Ottawa	Killed in action
Seaton, William	Messenger	Edmonton	Wounded
Stewart, Charles	Section foreman	Milverton	Wounded
Stewart, Robt. Henry	Fitter	Winnipeg	Wounded
Stiles, Bedford Allen	Locomotive fireman	British Columbia Dist.	Killed in action
Thorogood, T.	Ice man	Winnipeg	Wounded
Ward, John Charles	Brush hand	Winnipeg	Wounded
Watt, John	Car repairer	Vancouver	Wounded

Shown on Honor Lists to June 1: Killed 633; Wounded 1,478; Total 2,111.



# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Algoma Eastern Ry.**—W. H. FARRELL, heretofore Superintendent Toronto Terminals, G.T.R., has been appointed General Manager, A.E.R., vice A. L. Smith, resigned. Office, Sudbury, Ont.

**Boston & Maine Rd.**—WOODWARD HUDSON, General Counsel, has been elected President and director, B. & M.R. and its subsidiaries, vice J. H. Hustis, Temporary Receiver, resigned. Office, Boston, Mass.

**Canadian Government Railways.**—W. A. DUFF, heretofore Assistant Superintendent, District 2, Transcontinental Division, Grant, Ont., has been appointed Assistant Superintendent, District 1, Transcontinental Division, vice J. J. McManus, who has left the service. Office, Parent, Que.

W. G. WILSON has been appointed acting Assistant Superintendent, District 2, Transcontinental Division, vice W. A. Duff, transferred. Office, Grant, Ont.

W. A. HILL, heretofore dispatcher, Graham, Ont., has been appointed Chief Dispatcher there, vice S. A. Lawless, transferred to Quebec, Que.

W. F. CRESSALL, heretofore accountant, Cochrane, Ont., has been appointed chief clerk to Superintendent, Fort William, Ont., vice H. A. Irving, now in military service.

W. J. QUINLAN, District Passenger Agent, C.G.R. and Grand Trunk Pacific Ry., Winnipeg, has also been appointed acting General Baggage Agent, C.G.R. and G.T.P.R. there, vice E. McDonald, enlisted for military service.

See also Elgin & Havelock Ry., Moncton & Buctouche Ry., St. Martins Ry., Salisbury & Albert Ry., and York & Carleton Ry.

**Canadian Northern Ry.**—W. M. PUNTER, heretofore Manager, Saxby & Farmer, Ltd., Montreal, has been appointed Signal Engineer, lines east of Port Arthur, Ont., reporting to Chief Engineer. Office, Toronto.

P. K. HUNT, heretofore Manager, Prince Edward Hotel, Brandon, Man., has been appointed Manager, Prince Arthur Hotel, Port Arthur, Ont., vice G. A. Keeler, resigned.

J. VAN WYCK has been appointed Manager, Prince Edward Hotel, Brandon, Man., vice P. K. Hunt, transferred.

J. IRWIN, heretofore Superintendent, Division 3, Western District, Edmonton, Alta., has been appointed Superintendent, Division 4, Western District, vice M. B. Helston, transferred. Office, Calgary, Alta.

M. B. HELSTON, heretofore Superintendent, Division 4, Western District, Calgary, Alta., has been appointed Superintendent, Division 3, Western District, vice J. Irwin, transferred. Office, Edmonton, Alta.

**Canadian Pacific Ry.**—E. BOWIE, heretofore Locomotive Foreman, Smiths Falls, Ont., has been appointed General Foreman, McAdam Jct., N.B., vice L. A. Cleary, transferred.

W. W. NOYES has been appointed Roadmaster, McAdam Jct., N.B., vice P. Chicoine, transferred.

C. SENAY, heretofore Assistant Superintendent, Laurentian Division, Quebec District, Montreal, has been appointed General Agent, Quebec, Que., vice J. S. Lalonde, transferred.

J. S. LALONDE, heretofore General Agent, Quebec, Que., has been appointed Assistant Superintendent, Laurentian Division, Quebec District, vice C. Senay, transferred. Office, Montreal.

L. A. CLEARY, heretofore General Foreman, McAdam Jct., N.B., has been appointed Locomotive Foreman, Smiths Falls, Ont.

P. CHICOINE, heretofore Roadmaster, McAdam Jct., N.B., has been appointed Roadmaster, Winchester Subdivision, Smiths Falls, Ont.

E. E. THACKER, heretofore Assistant Passenger Car Yard Foreman, Winnipeg, has been appointed Car Foreman, Field, B.C., vice A. E. Chesterman, resigned.

J. W. MARSHALL, heretofore Assistant Car Foreman, Transcona, Man., has been appointed Freight Shop Foreman, Fort William, Ont., vice H. Dibley, transferred, and not Car Foreman there, as announced in our last issue, which position is held by T. E. Higgins.

G. A. DAVIDSON, heretofore Chief Dispatcher, Nelson, B.C., has been appointed Chief Dispatcher, Calgary, Alta., vice R. Douglas.

J. V. MURPHY, General Agent, Portland, Ore., having resigned, the work of that department is being carried on by B. E. CHACE, City Ticket Agent there.

**Central Vermont Ry.**—J. W. WARDLAW, heretofore Assistant to President, and Purchasing Agent, has been appointed General Manager, C.V.R., under the District Director, New England District, U.S. Railroad Administration. Office, St. Albans, Vt.

See also National Despatch—Great Eastern Line.

**Delaware & Hudson Co.**—F. P. GUTELIUS, heretofore Vice President and General Manager, has been appointed General Manager, D. & H. Co., under the Regional Director, Eastern Regional District, U.S. Railroad Administration. Office, Albany, N.Y.

**Elgin & Havelock Ry.**—The operation of this railway having been taken over by Canadian Government Railways, June 1, all employees now report to C.G.R. Eastern Lines officials.

**Grand Trunk Ry.**—L. G. COLEMAN, heretofore Superintendent, Ottawa Division, Eastern Lines, Ottawa, Ont., has been appointed General Manager, Grand Trunk Ry. in New England, under the District Director, New England District, U.S. Railroad Administration. Office, Portland, Me.

J. A. BURNETT, Electrical Engineer, has resigned, on appointment as technical assistant with the British War Mission at Washington, D.C.

F. L. LAMPLOUGH, heretofore Trainmaster, Ottawa, Ont., has been appointed Superintendent, Ottawa Division, Eastern Lines, vice L. G. Coleman, appointed General Manager, Grand Trunk Lines in New England under the District Director, New England District, U.S. Railroad Administration. Office, Ottawa.

W. E. WEEGAR, heretofore Passenger Trainmaster, Montreal has been appointed Trainmaster, Ottawa Division, Eastern Lines, vice F. L. Lamplough, promoted.

G. A. STOKES, heretofore Terminal Superintendent, Port Huron, Mich., has been appointed Terminal Superintendent, Toronto, vice W. H. Farrell, resigned to enter another company's service.

J. E. ELLIS, heretofore acting Locomotive Foreman, Hamilton, Ont., has been appointed Locomotive Foreman there.

JOHN VASS, heretofore Road Foreman of Locomotives, Nichols, Mich., has been appointed Assistant Master Mechanic, Ontario Lines. Office, Allandale.

H. E. WHITTENBERGER, heretofore General Superintendent, Western Lines, Chicago, Ill., has been appointed General Manager, Grand Trunk Western Lines, under the Regional Director, Eastern Regional District, U.S. Railroad Administration. Office, Chicago, Ill.

See also National Despatch—Great Eastern Line.

**Grand Trunk Pacific Ry.**—W. J. QUINLAN, District Passenger Agent, Canadian Government Railways, and G.T.P.R., Winnipeg, has also been appointed acting General Baggage Agent, C.G.R. and G.T.P.R. there, vice E. McDonald, enlisted for military service.

S. A. MILLER, heretofore conductor, has been appointed Assistant Superintendent, Edmonton, Alta.

W. E. SIMMONS, heretofore dispatcher, Biggar, Sask., has been appointed first trick dispatcher, Edmonton, Alta.

**Grand Trunk Pacific Coast Steamship Co.**—F. L. NORMAN, heretofore Commercial Agent, G.T.R., Seattle, Wash., has been appointed Commercial Agent, G.T.P.C.S. Co. there.

**Grand Valley Ry., Lake Erie & Northern Ry. (Electric).**—A. McL. CAMPBELL, heretofore Travelling Auditor, C.P.R., Montreal, has been appointed Chief Accountant, G.V.R. and L.E. & N.R., Galt, Ont.

**Hudson Bay Ry.**—ALEX. D. PORTER, Mechanical Engineer, having completed his work on the H.B.R., has been appointed to a position in the Imperial Munitions Board's service at Ottawa, under the Director of Shell Contracts. His position on the H.B.R. will not be filled for the present at least.

**Michigan Central Rd.**—E. D. BRONNER, heretofore Vice President, has been appointed Federal Manager, M.C.R. and Chicago, Kalamazoo & Saginaw Ry., under the Regional Director, Eastern Regional District, U.S. Railroad Administration. Office, Detroit, Mich.

**Moncton & Buctouche Ry.**—The operation of this railway having been taken over by Canadian Government Railways, June 1, employees now report to C.G.R. Eastern Lines officials.

The National Despatch-Great Eastern Line was abolished June 30. All matters affecting traffic waybilled over this line prior to June 1, have been dealt with by C. J. PIERCE, Manager, and all correspondence in respect to business transacted after June 1, is addressed to G.T.R. or the Central Vermont Ry. officers, as their interests appear.

**New York Central Lines.**—W. K. VANDERBILT, Jr., heretofore Vice President, has been elected President, vice A. H. Smith, resigned on account of his appointment as Regional Director, Eastern Regional District, under the U.S. Railroad Administration.

**Pere Marquette Ry.**—F. H. ALFRED, heretofore President and General Manager, has been appointed Federal Manager, P.M.R., under the Regional Director, Eastern Regional District, U.S. Railroad Administration. Office, Detroit, Mich.

**Rutland Rd.**—G. T. JARVIS, heretofore Vice President and General Manager, has been appointed General Manager, under the District Director, New England District, U.S. Railroad Administration. Office, Rutland, Vt.



**St. Martins Ry.**—The operation of this railway has been taken over by Canadian Government Railways, June 1; all employees report to C.G.R. Eastern Lines officials.

**Salisbury & Albert Ry.**—The operation of this railway having been taken over by Canadian Government Railways, July 1, all employees now report to C.G.R. Eastern Lines officials.

**York & Carleton Ry.**—The operation of this railway having been taken over by Canadian Government Railways, June 1, all employees now report to C.G.R. Eastern Lines officials.

### The Traveling Engineers' Association Convention.

The Railroad Administration has authorized the Traveling Engineers' Association to hold its next convention at Chicago, Ill., commencing Sept. 10. Following are the subjects to be discussed:—

Fuel economy, under the following heads: Value of present draft appliances; can they be improved to effect fuel economy. Best practice for handling locomotives at terminals to reduce coal consumption. How can locomotive men and firemen effect the greatest saving of fuel when locomotives are in their charge? Whether it is more economical to buy cheap fuel, at a low heat value or a higher price fuel at a greater heat value. The most economical method of weighing fuel when delivered to locomotives, in order that individual records of coal used by enginemen and firemen may be kept. Superheat applied to locomotives as effecting coal consumption.

Locomotive failures, causes and remedies, best methods of investigating same, and placing responsibility.

The use of superheat steam in slide valve locomotives. Drifting, relief, and by-pass valves, or the absence of any one or all, on superheated locomotives equipped with piston valves.

Cab and cab fittings on modern locomotives, from the viewpoint of the locomotive man.

How can the traveling engineer and general air brake inspector best co-operate to improve and maintain the air brake service.

Such other matters as may be considered of interest to the association and railways under the changed conditions.

### New York Central Railroad Report for 1917.

The New York Central Rd. directors' report for the calendar year 1917 shows a total of 5,685.43 miles of railway operated, of which 3,702.75 are main line and branches owned, 1,527.02 are leased lines and 455.66 are operated under trackage rights. The leased lines include the following in Canada:—St. Lawrence & Adirondack Ry., International Boundary to Valleyfield, Que., 20.17 miles, and Beauharnois to Adirondack Jct., Que., 13.27 miles, total 33.34 miles; Grand Trunk Ry., Valleyfield to Beauharnois, 12.70 miles; Ottawa & New York Ry., International Boundary to Ottawa, 56.90 miles. The lines operated under trackage rights in Canada are:—Canadian Pacific Ry., Adirondack Jct. to Montreal, 8.80 miles, South Junction to Outremont, Que., 5.46 miles, in Ottawa 1.09 miles, total 15.35 miles; Grand Trunk Ry., in Ottawa, 0.81 mile.

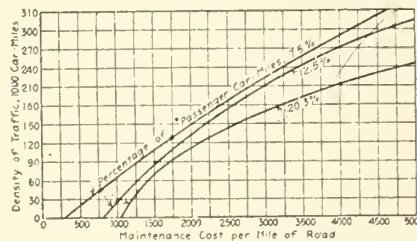
The report does not give details of the operations of Canadian railways, but includes them in the general statement.

Information as to the Ottawa & New York Ry. and the St. Lawrence & Adirondack Ry. for the year ended June 30, 1917, is given in the steam railways statistical table on another page. The financial statements, however, contain the following items:—Expenditures for improvements to property, \$31,795.37 on Ottawa & New York Ry., and \$45,706.29 on St. Lawrence & Adirondack Ry., the work on both lines being classified as bridge strengthening and track improvements.

The company's investments include:—Ottawa & New York Ry., \$64,362.67; St. Lawrence & Adirondack Ry., \$54,407.38, on account of improvements; Ottawa & New York Ry., \$1,000,000, par value shares of common stock; St. Lawrence & Adirondack Ry., \$1,615,000, par value of common stock, being in each case the entire share capital; Michigan Central Rd., \$16,819,300, out of \$18,738,000 par value common stock outstanding; Toronto, Hamilton & Buffalo Ry., \$1,676,600, par value out of \$4,512,500 common stock outstanding; Ottawa & New York Ry., \$8825,000 1st and \$275,000 2nd mortgage bonds; Toronto, Hamilton & Buffalo Ry., \$500,000 bonds. The rental paid to the St. Lawrence & Adirondack Ry. was \$64,000, being interest on 1st and 2nd mortgage bonds, and the rental paid to the G.T.R. was \$10,000.

### Railway Maintenance Cost Increased by Fast Trains.

That speed of trains affects the cost of maintenance of way and structures to the extent that the higher the proportion of passenger traffic, which may be assumed as high speed traffic, the greater the cost of maintenance, is the conclusion arrived



at in a preliminary report presented by the track committee at the American Railway Engineering Association's recent annual meeting.

In the accompanying diagram, the curved lines represent traffic of which the passenger-car miles constitute 7.5, 12.5 and 20.3% of the total car mileage. The vertical ordinates represent the annual cost of maintenance per mile of road; the horizontal lines represent the density of traffic in 1,000 car-miles per mile of road.

It is recognized by the committee that the assumption of high speed and low speed traffic, as synchronous with passenger and freight traffic, is not entirely correct, but this, the committee says, offers the only opportunity for classifying expenses in accordance with differences of speed. The car-mile was taken as the unit for comparison on the ground that it gives the best measure of the facilities required by each class of traffic.

The Grand Trunk Ry. car ferry will give a freight and passenger service between Cobourg, Ont., and Rochester, N. Y., daily except Sunday, from July 1 to Sept. 2, inclusive, and on Mondays, Thursdays and Saturdays from Sept. 5 to Sept. 30.

### Patronage on Canadian Government Railways.

J. H. Sinclair, M.P. for Antigonish and Guysboro, complained in the House of Commons recently of political patronage still being exercised in connection with employment on the Canadian Government Railways, and read a letter sent on April 22 by W. N. Ingram, Master Mechanic at Stellarton, to the Secretary of the Returned Soldiers' Employment Committee at Halifax, as follows:—"You letter of the 16th inst. to hand, in regard to the employment of returned soldiers. If you have two machinists, I could place them at Sydney. In regard to wipers and cleaners employed at the roundhouses, I would refer them to A. McGregor, M.P., New Glasgow, for a recommendation, as this has always been the practice when taking on employes on the railway."

The Minister of Railways said in reply: "I stated in the House a few days ago that I had informed the General Manager of the Intercolonial Ry., Mr. Hayes, that in operating the road he could employ any one he saw fit without regard to the political party to which the applicant belonged. I am sorry the party mentioned in that letter should take the stand he does as far as returned soldiers are concerned. The only recommendation any returned soldier wants to get a position on the Intercolonial or in any department of this government is himself. The returned soldier will be given preference over everybody else. With reference to patronage outside of returned soldiers, I gave instructions to Mr. Hayes that he was to employ people on their merits, and those instructions, I suppose, he would circulate among all the officials serving under him who had authority to employ help. I gave him instructions by letter only today, for I have received a copy of the letter my hon. friend has read, and I will expect those instructions to be carried out. I do not think the member for New Glasgow, hon. member for Guysboro, or any other member, wants to be bothered with patronage if he can get out of it; that is the way I feel about it, and I have not been bothered with patronage either on the railway or anywhere else since civil service reform was brought about. Neither Mr. McGregor nor any other member has recommended me to employ any person on the Intercolonial."

**Canadian Northern Rolling Stock Ltd.**, has been incorporated under the Dominion Companies Act, with authorized capital of \$100,000, and office at Toronto, to manufacture, own and deal in engines and locomotives, rolling stock of every description, rails, ties, machinery, tools, etc., for the building, operation, maintenance and renewal of railways, steamships and vessels of every description, and for other purposes. The incorporators are: D. B. Hanna, G. Ruel, A. J. Reid, R. H. M. Temple, R. P. Ormsby, all associated with the Canadian Northern Ry., Toronto. This company will be under Dominion Government control and will perform the same services for the C.N.R. in future as the Imperial Rolling Stock Co., a Mackenzie & Mann Company, has heretofore.

**St. John & Quebec Ry. Financing.**—The New Brunswick Legislature has passed an act providing for the initiation of legal proceedings against certain directors and others to secure the return of the company's funds which a royal commission found recently to have been improperly applied. The total amount particularly referred to is \$153,000.



## Railway Rolling Stock Orders and Deliveries.

The Canadian Copper Co. has ordered 12 special steel transfer cars, 200,000 lb. capacity for quick delivery, from Canadian Car & Foundry Co.

The C.P.R., between May 14 and June 15, received the following additions to rolling stock, from its Angus Shops: 12 express refrigerator cars, 80 steel under-frame coal cars, 1 snow plough, and 1 decapod locomotive.

The G.T.R. received between May 7 and June 12, the following additions to rolling stock:—10 mikado locomotives from American Locomotive Co.; 300 box cars, 80,000 lb. capacity, from American Car & Foundry Co., and 2 snow ploughs from Russell Snow Plow Co.

The G.T.R. has received 35 mikado locomotives ordered by the Dominion Government last year from Canadian Locomotive Co., and will get two more out of that order. Of the 60 mikado locomotives ordered by the government, 40 will go to the G.T.R. and 10 to the G.T.P.R.

The Dominion Government has ordered, for the Canadian Northern Ry., one rotary snow plough, from Montreal Locomotive Works, for \$48,500, f.o.b. Montreal, subject to an additional payment of \$7,500 for a locomotive tender for the plough, should one be required. Delivery is to be made in December. We have since been advised that a tender is not to be provided for this plough.

The Canadian Copper Co. has purchased from Hart-Otis Car Co., 125 improved ore and general service, all steel cars, 50 tons capacity. Following are the chief particulars:—

Length over end sills ..... 24 ft. 4½ in.  
Length inside ..... 22 ft. 6 in.  
Width over all ..... 9 ft. 11½ in.  
Width inside ..... 9 ft. 6 in.  
Height ..... 5 ft.  
Height from rail ..... 9 ft. 4 13/16 in.  
Number of doors on each side ..... 4

The Dominion Government's rolling stock orders placed during the last few months, for the Canadian Government, Canadian Northern and Grand Trunk Railways, amount to \$35,490,665, as follows:—

Cars and locomotives as detailed in Canadian Railway and Marine World for July .....	\$33,620,665
Further orders.	
Montreal Locomotive Works—	
15 Pacific locomotives at \$60,000....	900,000
20 switching locomotives at \$40,500..	810,000
1 rotary snow plough .....	48,500
Canadian Car & Foundry Co.—	
24 snow ploughs at \$8,000 .....	12,000
	\$35,491,165

In reference to the additional order given by the Dominion Government to Montreal Locomotive Works for 15 Pacific type locomotives, and 20 switching locomotives, as mentioned in Canadian Railway and Marine World for June, we are officially advised that the 15 Pacific locomotives and 10 of the switching locomotives are for the G.T.R. and the other 10 switching locomotives are for the G.T.P.R. They are all of the same types as the locomotives ordered recently for the Canadian Government Railways, except that the specifications for a number of parts have been changed to conform to G.T.R. standards, with a view to effecting economy and interchangeability of parts. The prices are the same as for those ordered for Canadian Government Railways, viz., \$60,000 each for the Pacifics and \$40,500 each for the switchers.

The Dominion Government has ordered 24 snow ploughs at \$8,000 each, f.o.b. Montreal, from Canadian Car & Foundry Co., subject to certain conditions as to price of steel plates over certain sizes,

and also to the furnishing to the car company, by the railways, of certain parts free of charge. They will be all steel ploughs, with drop point, and wings operated by compressed air, the type being similar to those ordered last year for Canadian Government Railways, with an improvement made on the wing of the plough to elevate snow, also a hand attachment for raising point, in case of air failure. They will be equipped with electric headlights and an improved form of ice cutter. The weight of each plough will be approximately 65,000 lb. Delivery is to be made in November, subject to reasonably prompt delivery of material. Fifteen of the ploughs are for Canadian Government Railways, Eastern and Western Lines, and 9 for Canadian Northern Ry., Eastern and Western Lines.

The Toronto, Hamilton & Buffalo Ry. has received 6 six wheel switching locomotives from Canadian Locomotive Co. Following are the chief details:—

Weight in working order, drivers.....	166,000 lbs.
Wheel base, rigid .....	11½ ft.
Wheel base, engine and tender .....	45 ft. 4½ in.
Heating surface, firebox and arch tubes.....	142 sq. ft.
Heating surface, tubes .....	1879 sq. ft.
Heating surface, total .....	2021 sq. ft.
Driving wheels, diam. ....	51 in.
Driving wheel centres .....	Cast steel
Driving journals .....	9 by 12 in.
Cylinders, diam. and stroke .....	21 by 28 in.
Boiler, type .....	Radial stayed
Boiler pressure .....	180 lbs.
Tubes, no. and diam.....	165-2 in.; 22-5½ in.
Tubes, length .....	16 ft.
Brakes .....	Westinghouse American
Packing .....	King metallic
Superheater, Locomotive Superheater Co.'s Type A	
Fire door .....	Franklin butterfly type
Brick arch .....	American Arch Co.
Valve gear .....	Walschaert
Reverse gear .....	Casey-Cavin power type
Weight of tender, loaded .....	110,000 lbs.
Water capacity .....	5,500 galls.
Coal capacity .....	8 tons
Tank, type .....	U shape, steel coal gate
Truck type .....	Arch bar
Wheels .....	Solid steel 33 in.
Journals .....	5 by 9 in.
Brake beams .....	Buffalo
Axle boxes .....	McCord

**Rules for wires erected along or across railways.**—The Board of Railway Commissioners having received inquiries in regard to the scope of General Order 231, May 6, 1918, containing rules for wires erected along or across railways, and as there appears to be some misunderstanding as to whether an order is necessary where construction is along the railway, it is announced officially that the amending provision, sec. 7, chap. 22, Statutes of 1911, dispensing with the necessity of an order where the railway company consents, as set forth in General Order 231, on page 2, as printed, applies only to construction across the railway. Where the wires or other conductors are to be erected along the railway an order of the board is therefore necessary.

## Fuel Consumption on Railways in 1916-1917.

The consumption of fuel of all kinds by locomotives on Canadian railways increased from 8,995,123 tons in the year ended June 30, 1916, to 10,130,799 tons

## Grand Trunk Pacific Railway Betterments.

We have been officially advised that the G.T.P.R. proposes to make the following betterments, etc., during this year:

Light ballasting on certain sections of the main line divisions and on branch lines.

Eight temporary bridges to be filled and permanent roadbed provided, including a diversion of the line over Pine and Mule Creeks, Man.

Water supplies to be developed at 14 points.

Seven new station buildings to be built, one of which will be Prince Rupert, B.C. In regard to Prince Rupert we were advised by another officer that other terminal buildings were projected there, but that no arrangements for their immediate construction had been made.

Additions are to be made to 5 locomotive houses; 20 bunk houses and section houses, and 12 portable bunk houses are to be built. Four coaling plants are to be installed; 2 store houses are to be built and an addition is to be made to another.

Additional yard tracks are to be laid at Biggar, Tofield, Edmonton and Calgary, Alta.; and Prince Rupert, B.C.

An entrance will be provided into Saskatoon, Sask., over the C.P.R.

A coal mixing plant will be installed at Edson, Alta., together with a yard.

A locomotive house and a freight shed is to be built at Calgary.

On the Mountain Division there will be a general cleaning of mud cuts, and riprap and crib protection will be provided.

A press report states that work has started completing the ballasting and finishing up of the line from Talmage, on the Regina-International Boundary line, into Weyburn, Sask., and that the work is estimated to cost about \$45,000. (June, pg. 240.)

**Deputy Minister of Railways.**—Graham Airdrie Bell, C.M.G., heretofore Assistant to the Minister, and Financial Comptroller, Department of Railways and Canals, has been appointed Deputy Minister of Railways and Canals, as well as Assistant to the Minister, the positions having been amalgamated. A. W. Campbell, heretofore Deputy Minister, will, it is said, be appointed to another position. Mr. Bell was born Aug. 13, 1874, and his first temporary appointment in Government service was dated Dec. 1, 1890, his first permanent appointment July 6, 1893. He was appointed Financial Comptroller Sept. 1, 1908, and Assistant to Minister June 1, 1917. He is also a Government director of the Canadian Northern Ry. He is a captain, Corps Reserve, 2nd Battalion, 43rd Regiment, Duke of Cornwall's Own Rifles.

in the year ended June 30, 1917. The average cost per tons for the latter year was \$3.63 a ton, against \$3.11 for the previous year. Following are the figures:

Class of locomotive.	Coal		Wood.	Other fuel.			Total.	Miles run.
	Anthracite.	Bituminous.		Soft.	Oil.	Charcoal.		
	Tons.	Tons.	Cords.	Cords.	Gallons.	Bushels.	Tons.	
Freight .....	2,700	5,474,665	366	20,351	31,460,382	62,130	1,675,606	68,983,629
Passenger .....	1,194	2,026,452	240	10,113	15,460,382	39,812	2,127,621	44,005,835
Mixed .....	1,000	515,564	125	4,643	995,070	3,965	524,917	8,612,666
Switching .....		1,436,563	100	7,916	3,871,171	20,747	1,463,820	28,509,069
Special .....		330,280	...	1,805	1,285,448	207	338,835	153,099
Total .....	4,900	9,783,524	825	44,828	53,471,269	126,861	10,130,799	150,264,298



## Widening Cuts Through Snow Drifts with a Spreader.

After heavy snow storms last winter, a Jordan spreader was used most successfully in widening cuts through drifts on the C.P.R. main line between Toronto and London. The prevailing wind, throughout the storm, was from the south, and at times attained a velocity of 60 miles an hour. The snow was sandy, and packed in heavy drifts, which were amazingly hard, as at no time during the storm was the temperature above zero. The snow ploughs kept the line open with fair success. The ploughs would go through the drifts, but the hard snow on the south side of the cuttings would force the wing on that side of the plough shut. Thus when the storm was over and normal traffic could be resumed, there were many drifts on the south side of the track with a vertical face, that barely cleared the sides of the passenger cars. These walls of snow were from 4 to 10 ft. high, and in many cases over half a mile long. In almost every case, the wing of the plough on the north side remained open, making a fairly wide cut.

The spreader served a double purpose in widening the narrow cuts through the snow, first by cutting back the side of the drift with the end of the main wing, by pulling the spreader backward through the cut with the wing partially open, and second, by pushing the spreader forward through the cutting and using the extension on the nose, all the snow cut from the bank was thrown to the wide side of the cut.

In widening a cut, the spreader was

ened snow to the wide side of the cutting, where it could later be winged out by the plough. This extension nose is supplied with the spreader, and can be attached in 10 minutes. After it is attached to the nose proper, it is raised and lowered with the nose, by compressed air, while running, without delay. Figs. 3 and 4 show the spreader being pushed forward,



Fig. 1. Spreader with wing chained for final widening of 6 ft. 4 in. from rail.

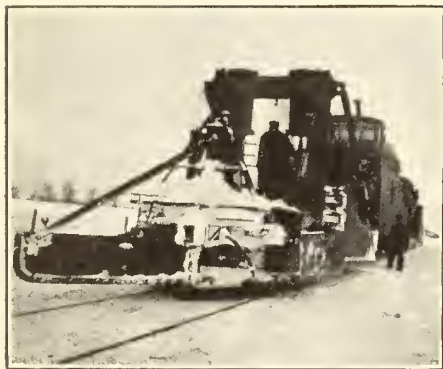
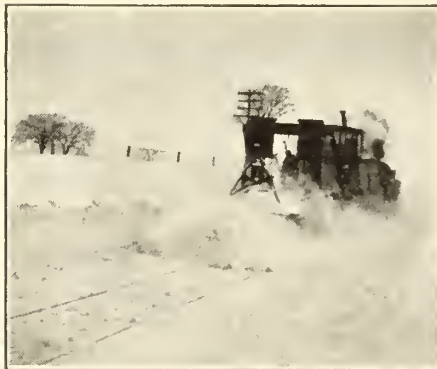


Fig. 2. Spreader with extension nose attached.



Figs. 3 and 4. Backing through cut, throwing loosened snow away from drift with extension nose.

heavy cut half a mile long could be completely cleared in 30 minutes, with only four men, beside the train crew.

The photographs from which the accompanying illustrations were made were taken while working in light drifts. When the snow wall was over 6 ft. high, it was necessary to break down the overhang with shovels, although this difficulty can be overcome by bolting a bar of steel to the end of the spreader wing, in an upright position, projecting 4 or 5 ft. above the top of the wing. This will cut off snow projecting inside of the end of the wing in the deeper drifts.

This method of cutting snow with the spreader was devised and carried out, with complete success, by J. M. Silliman, who was, at the time, acting Roadmaster Resident Engineer, C.P.R., London, Ont., on the Galt Subdivision.

### The Quebec and Saguenay Railway Purchase.

A press report from Quebec, on June 13, stated that all legal details in connection with the transfer of this line to the Dominion Government had been settled, and that the purchase price would be paid over by the end of the month.

The Dominion Parliament at its recent session appropriated \$3,489,313.53 to acquire, free and clear of all charges, encumbrances or claims at any public sale, the Q. & S. Ry., extending from its junction with the Quebec, Montmorency & Charlevoix Ry. to Nain Falls, Que., 62.3 miles. Sir James Lougheed stated in the Senate that the value placed upon the line by the judge of the Exchequer Court,



operated as follows: The main wing of the spreader was opened slightly, and held securely by a chain passed around the wing and frame of the car, the edge of the wing projecting about 6 in. wider than the cut through the snow. The spreader was then drawn backward through the drift, the end of the wing becoming a cutting edge and chiselling off about 6 in. of snow, which was forced to the track by the wing and passed out beneath the wing and nose of the spreader. The amount the wing was allowed to project, depended upon the height of the cutting, but more snow should not be cut loose at one time than will pass out beneath the nose of the spreader (about 6 in. above the rail) without clogging. Fig. 1 shows the wing open and chained for the final cut of 6 ft. 4 in. from the rail.

To clear the track of the snow cut down, the locomotive was reversed and the spreader pushed through the cut in the opposite direction with the nose down, cutting a full flange, while the plate attached to the nose (fig. 2) extended 3½ ft. outside the rail and threw all the loos-

throwing all the snow that has been cut, clear of the track, preparatory to the next widening.

The train undertaking this work was made up as follows: A snow plough ahead, followed by the locomotive, then the van with the spreader behind, the nose of the spreader to the rear of the train. The plough was operated as usual, until a heavy drift was encountered which the wings would not throw back. The wing of the spreader was opened slightly and secured by a chain, and the train run through the cut at the rate of 20 or 25 miles an hour, cutting off about 6 in. from the bank of snow. The locomotive was reversed, the nose lowered and the train backed through the cut at about the same speed. This was repeated three or four times, the wing being allowed to open about 6 in. further on each cut, until the snow had been cut back to over 6 ft. from the rail. The train was then backed up a quarter of a mile, and a run made through the cut, the wings of the plough throwing all the loose snow well back from the track. By this method a very

according to the terms of the reference to him, was \$2,886,939.06, to which has to be added interest amounting to \$228,519.63, and interest from July 1, 1916, to July 30, 1918, when the Government expected to take the line over, making altogether the amount appropriated.

Canadian Government Railways have received the following rolling stock since Mar. 1:—804 box cars from Eastern Car Co.; 5889 box cars from National Steel Car Co., completing contract; 1,380 box cars from Canadian Car & Foundry Co., Fort William, Ont.; 508 stock cars from Canadian Car and Foundry Co., Amherst, N.S.; 1,797 box cars from Canadian Car & Foundry Co., Montreal; 22 mikado locomotives from Canadian Locomotive Co., and 1 Santa Fe locomotive from Montreal Locomotive Works.

The Dominion Ex. Co. service has been withdrawn from the Canada & Gulf Terminal Ry., running between Mont Joli and Matane, Que., the railway company now operating its own express service at points along the line.



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money order, or bank draft, payable at par in Toronto,  
may be sent. Cheques or drafts not payable at par in  
Toronto cannot be accepted. Remittances should be  
made payable to Canadian Railway and Marine World.

## NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.  
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TORONTO, CANADA, JULY, 1918.

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## The Railway Gateways Between Canada and the United States.

Newspaper comment on a shipment of Chinese eggs received at Ogdensburg, N.Y., recalls to the student of railway work in Canada the fact that many of the most important gateways between this country and the U.S. are practically unknown to the general public, and even many railway men are not familiar with all of them. The observant reader, not knowing that Ogdensburg is one of these important gateways, wonders why Chinese eggs should be reported from that point instead of from New York or San Francisco, or some other well-known port of entry to the U.S. As a matter of fact, they land in Vancouver from China. Ogdensburg (opposite Prescott, Ont.) merely happens to be the end of their journey through Canada.

There are 34 railway gateways between Canada and the U.S. That does not mean mere points at which the boundary line is intersected by the railway lines, but points of exchange or clearance between Canadian and U.S. carriers. Out of these 34 gateways, 14 may be said to be main entrances and the balance of slightly less importance. The 14 main entrances are: Vanceboro, Me.; Island Pond, Vt.; Newport, Vt.; Rouse's Point, N.Y.; Malone, N.Y.; Niagara Falls, Windsor, Sarnia and Sault Ste. Marie, Ont.; Emerson, Man.; Portal, N.D.; Kingsgate, Huntingdon and Vancouver, B.C.

Vanceboro exchanges chiefly Canadian potatoes and pulpwood, for U.S. coal and general merchandise. It links the Canadian Government Railways, C.P.R., and Maine Central.

Island Pond, Vt., is a G.T.R. point, for general export—chiefly grain and munitions just now, and imports of general merchandise. U.S. interstate traffic passing over Canadian lines also crosses here.

Newport, Vt., is a very heavy focus of traffic, exports chiefly of flour and live-stock and imports of general merchandise. This is an important l.c.l. handling point, where the cars of l.c.l. are made up.

Rouse's Point, N.Y. (G.T.R., Q.M. & S., and D. & H.) exchanges Canadian forest products for U.S. coal.

Niagara Falls (including of course Black Rock, Victoria Park, Bridgeport and Niagara Falls) is common to G.T.R. and C.P.R. and handles all classes of traffic. The same is true of the Windsor-Detroit and Sarnia-Port Huron connection.

Sault Ste. Marie is noteworthy for the heavy paper, lumber, steel and ore, grain and flour traffic. One of the features of the gateway before the war was the danger of congestion due to speculation in flour. So long as flour prices remained high, the flour cars were kept moving east, but if the market dropped or looked weak, the shippers made Sault Ste. Marie a holding point—detaining the cars there so as to be able to divert them at a moment's notice to the most favorable market. This port, like Detroit, is also affected by U.S. interstate traffic crossing to Newport, Vt.

Portal, N.D., opposite North Portal, Sask., may never have been heard of in London or Berlin, but in the days of heavy export from Canada and the U.S. to Russia, it was the place where the Canadian railways accepted cars destined for the piers at Vancouver. In one day there have been as many as 800 cars of freight at Portal for Canadian roads to forward to Russia. This has always been a key posi-

tion in the handling of trade between Russia, China and Japan on the one hand and the U.S. on the other. Incoming trains of silks, lily bulbs, rattan, curios, antiques, from the celestial republic, and gunnies and sheepskins from Australia—all stop at this point. Fifteen cars of Chinese lily bulbs in one train passing through Portal, are on record. In addition to this trans-Pacific traffic there is also an important exchange of cattle, forest products and general merchandise.

Kingsgate, B.C., opposite Eastport, Idaho, is the western end of another short cut across Canada for U.S. interstate traffic. The eastern ends of this connection (so far as Canada is concerned) are Coutts, Alta., and North Portal, Sask. Much westbound traffic from Chicago for points on the U.S. west coast crosses at Coutts and North Portal and traverses Canadian territory as far as Kingsgate, and vice versa. Otherwise the traffic there consists of coal, ores and forest products southbound, and imports of general merchandise.

Vancouver and Huntingdon, B.C., like Windsor and Sarnia, Ont., are ports of general import and export.

Of the remaining 20 lesser gateways, several on the St. Lawrence River and Lakes Ontario and Erie are served by railway ferries, similar to the ferries on the Detroit and St. Clair rivers. These ferry points are Prescott-Ogdensburg; Cobourg-Charlotte; Port Maitland-Cleveland; Port Dover-Cleveland; Port Burwell-Ashtabula; and Port Stanley-Cleveland. The remaining 14 gateways are: Sherbrooke, Que.; Fort Frances on the C.N.R. opposite International Falls, Minn.; Coutts, Alta. (already mentioned) opposite Sweet Grass, Mont.; New Gate, B.C.; Creston, B.C.; Bonita, B.C. (opposite Boundary, Wash.); Peterson, Grand Forks, Midway, and Chopaka, B.C.

## Railway Finance, Meetings, Etc.

**Guelph Junction Ry.**—The directors, on May 27, declared a quarterly dividend at the rate of 6% per annum, after allocating \$1,700 of the quarter's revenue for taxes. The line is owned by the city and leased to the C.P.R.

**Minneapolis, St. Paul & Sault Ste. Marie Ry.**—This C.P.R. subsidiary shows the following results for the calendar year 1917:—

Gross earnings .....	\$34,540,491.39
Operating expenses .....	22,964,793.67
Net earnings .....	11,575,697.72
Income from other sources .....	1,652,231.40
Total income .....	12,227,929.12
Fixed charges, taxes, etc. ....	8,799,490.15
Surplus income .....	4,428,438.97

**Timiskaming & Northern Ontario Ry.** Passenger receipts for April, \$55,547.60; freight receipts, \$238,616.16; total receipts, \$294,163.76, against \$56,651.73 passenger receipts; \$142,236.20 freight receipts; \$198,977.93 total receipts for Apr., 1917. Aggregate receipts for four months ended Apr. 30, \$869,346.15, against \$658,493.91 for same period 1917.

**Toronto, Hamilton & Buffalo Ry.**—The annual meeting of shareholders was held at Hamilton, Ont., June 4. The directors elected for the current year are:—E. W. Beatty, K.C., J. N. Beckley, Sir George Bury, H. B. Ledyard, W. H. Newman, D. W. Saunders, W. L. Scott, Lord Shaughnessy, A. H. Smith, W. P. Torrance and W. K. Vanderbilt, Jr.



## Traffic Orders by Board of Railway Commissioners.

### Cumberland Railway and Coal Co.'s Tariffs.

27242. May 23. Re application of Cumberland Railway and Coal Co., under secs. 327 and 331 of the Railway Act, for approval of a standard passenger tariff to supersede its Standard Passenger Tariff C.R.C. 3, and for approval of Standard Freight Mileage Tariff C.R.C. 6 to supersede its Standard Mileage Freight Tariff C.R.C. 1, it is ordered that the Standard Freight Mileage Tariff C.R.C. 6, be approved subject to and upon the condition that the company publish and file carload mileage commodity rates on the following articles at the rates authorized by the board in the Eastern Rates Case as increased under the board's general order 212, Jan. 15, 1916, in the Fifteen Per Cent. Case; scale A to apply to all grains, also to grain products as enumerated in the proposed schedule filed by the company's General Traffic and Transportation Manager May 8, 1918; scale B to apply to lumber, lath and shingles; scale C to building sand, gravel and rubble, cobble and field stone; and scale D on other rough or partly dressed building stone, common brick and lime; the said rates to be as follows in cents per 100 lb.:—

Distances To 5 miles	Scale A Scale B Scale C Scale D				
	C.L.	L.C.L.	C.L.	C.L.	C.L.
" 10 "	3 1/2	4 1/2	3 1/2	2 3/4	3 1/2
" 15 "	4	6	4	2 3/4	3 1/2
" 20 "	4	7	4 1/2	3 1/4	4
" 25 "	5	8	4 1/2	3 3/4	4 1/2
" 30 "	5	8	6	3 3/4	4 1/2
" 35 "	5	9	6 1/2	4 1/4	5

It is further ordered that the company be permitted to file for the board's approval a standard maximum passenger tariff of one-way fares on the basis of 3.45c a mile. And it is further ordered that the Standard Freight Mileage Tariff herein approved may be made effective after it has been published, with a notice of this approval, in at least two consecutive weekly issues of the Canada Gazette, as required by sec. 327 of the Railway Act.

### Reconsignment Switching Charges.

27246. May 25. Re complaint of Retail Merchants Association of Canada, Provincial Coal Section of Ontario, against reconsignment switching charges assessed by C.P.R. for the replacement of cars loaded with coal from the United States, which is not consigned in the first instance direct to the unloading point, and the consideration of further submissions of Canadian Manufacturers' Association and Toronto Board of Trade, also of Robin Boyle, representing shippers of crushed stone under similar circumstances. Upon hearing the matter at Toronto, April 13, 1917, and at Ottawa, July 5, 1917, the Canadian Manufacturers' Association, the Montreal and Toronto Boards of Trade, the Coal Dealers' Association, the Dominion Millers Association, and the shippers of crushed stone, being represented at the hearing, and upon reading the further submissions filed, it is ordered that the complaint be dismissed.

### Stove Putty and Asbestos Cement.

27305. June 8. Re application of Canadian Manufacturers' Association for reduction in classification of stove putty, shipped in barrels; and for an order requiring railway companies to carry asbestos cement shipped by G. F. Sterne & Sons, Brantford, Ont., at 4th class rates in less than carloads: Upon hearing the application at Ottawa, April 16, 1918, the

complainant, the Canadian Freight Association, and the G.T.R. being represented, and upon reading the further submissions filed; and upon the report of the board's Chief Traffic Clerk, concurred in by its Chief Traffic Officer, it is ordered that the applications be dismissed.

### Rate on Stoves.

27307. June 12. Re complaint of Beaver Stove & Machinery Co., Grandmere, Que., against rates charged by C. P.R. on stoves from Grandmere to points on the Quebec Central Ry.: Upon hearing the complaint at Montreal, June 10, in the presence of counsel for the railway company, no one appearing for the complainant; and its appearing that the Quebec Central Ry. Company is not under the board's jurisdiction, it is ordered that the complaint be dismissed.

### Wooden Snow Shovels' Classification.

27321. June 15. Re application of Rugg-Ball Manufacturing Co., Ayers Cliff, Que., for reduction of classification of wooden snow shovels: Upon hearing the application at Montreal, June 10, 1918, the Canadian Freight Association and the Toronto Board of Trade being represented, and no one appearing for applicant, it is ordered that the application be dismissed, without prejudice to a renewal of the application at a later date if so desired.

### Interswitching of Freight Traffic.

General order 239, June 19. Re general order 230, May 17, 1918, in matter of interswitching of freight traffic (as published in full on page 282 of this issue): Upon reading what is filed on behalf of the Canadian Manufacturers' Association, it is ordered that the effective date of the schedules to give effect to general order 230 be postponed from July 1, 1918, to Aug. 1, 1918.

### Freight Facilities at Flag Stations.

General order 255, May 22, as amended by general order 283, May 31.—Re complaint of Ontario Associated Boards of Trade, alleging insufficient and inadequate facilities furnished by railway companies for receiving and delivering freight at flag stations: Upon hearing the complaint at Hamilton, Oct. 22, 1917, it is ordered that every railway company be directed to provide its agents with rubber stamps reading as follows:—

UNLOADED WITHOUT EXCEPTION  
EXCEPT AS NOTED

Conductor.

Date.....

and to issue a bulletin requiring agents issuing waybills for shipments of less than carload freight destined to flag stations to place the above stamp thereon; requiring conductors in charge to unload such freight on the platform at the flag station after the train has been brought to a full stop, and wherever shelters have been provided, to place therein all such freight as would be liable to damage from the weather or exposure, and to certify, as above, on the waybill; requiring conductors who have unloaded freight at flag stations to deliver the waybill therefor at the first agency station reached by the train after the unloading of such freight; notifying such conductors that they will be held responsible for the proper carrying out of the requirements set forth in this order and as covered by the said bulletin, and requiring the agent at the first agency station reached by the train after the unloading of the freight, as in this order provided, to notify the

consignee of the arrival of such freight by postal notice mailed within 24 hours after receiving the waybill from the conductor.

## Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—A press report states that work will be started at an early date on the rebuilding of the conveyor at the St. John, N.B., elevator. The material was reported to have been ordered at the beginning of June, and it was stated, June 12, that it was expected to have the conveyor ready for use at the opening of the winter navigation season.

C.P.R. officials have been discussing with the St. John, N.B., city authorities the agreement as to the removal of the tracks on Germain St. west. The agreement called for the removal of these tracks by May 1 in connection with plans for the development of the port. The reclamation of the area between Fort Dufferin and Sand Point was held up, consequently the company was not able to carry out the proposal. It is not possible to do so at present because the new lay out would be unsatisfactory and would have to be shifted when the dock work is taken in hand. It is suggested that the work be postponed until after the war.

Algonia District.—C.P.R. officials have been in Fort William, Ont., discussing with the city authorities the closing up of street ends and the opening of other streets in connection with necessary improvements of the company's terminal facilities there.

Alberta District.—Tenders are under consideration for the erection of farm buildings on two farms for returned soldiers, one near Chancellor, Alta., and the other near Coaldale, Alta. The buildings on each farm will consist of a house 38 x 26 ft.; a barn, 52 x 28 ft.; implement shed, dairy and bunk house.

British Columbia District.—The company has been directed to remove and replace the Kitsilano bridge span over False Creek, Vancouver, B.C., when necessary for ship launching, and the question of liability as between the Dominion Government and the company is to be settled later. The question at issue is whether the bridge was erected legally by the company. The draw span is not wide enough to let large vessels through, consequently a fixed span 100 ft. wide has to be removed to let through the vessels being built at the Coughlan yards and then replaced to permit of the operation of the C.P.R. Lulu Island Branch, which is leased to the British Columbia Electric Ry. (June, page 239.)

Railway Employees Statistics.—The total number of railway employees of all grades in Canada, classified under 65 groups, was 146,175, at June 30, 1917, against 144,770 at June 30, 1916. The total salaries and wages paid were \$129,626,187, against \$104,300,647 for 1915-16. The employees were on duty altogether 449,278,533 hours, the wages paid running from 11.7c an hour for messengers and attendants in the offices to 68.8c an hour for passenger locomotive men. The Railways Department report for June 30, 1917, for the first time uses the hour as the unit of compensation instead of the day, as formerly; the general classification is also changed. These two changes make it impossible to compare with previous years.



# Electric Railway Department

## Electric Railway Statistics for Year Ended June 30, 1917.

The figures in the following table are reproduced from statistics issued by the Railways Department at Ottawa. The following abbreviations are used in the names of railways:—E, electric; E.R., electric railway; E.S.R., electric street railway; S.R., street railway. The minus mark (—) in the column for net income or deficit, shows that there was a deficit in the operation of the line to the extent of the figures given.

Name of Railway	1st Main track mileage	Gross earnings from operation	Miscellaneous income	Operating expenses	Taxes funded debt, etc.	Net income or loss	Total car mileage	Fare passengers carried	Freight carried tons
Berlin and Waterloo S.R. (1)	3.28	\$ 55,673		\$ 39,489	\$ 7,832	\$ 8,351	199,303	1,229,753	
Berlin and Northern Ry.	3.15	7,962		6,589	2,721	—1,348	34,600	185,055	
Berlin, Waterloo, Wellesley & L. Huron Ry.	17.81	229,944	\$ 1,040	151,043	22,733	55,208	276,779	1,218,383	168,617
Brandon Municipal Ry.	10.31	39,323		32,450	22,550	—17,677	305,878	839,375	
Brantford and Hamilton Ry.	23.00	170,854		114,937	91,894	—35,977	365,779	624,560	6,026
Brantford Municipal Ry.	29.96	102,098		70,653		31,445	402,990	1,625,146	180
British Columbia E. R.	245.59	2,700,733	1,093,009	2,448,207	922,159	423,375	12,458,725	43,234,384	327,559
Calais S. R. (2)	7.00	42,411		34,138	5,790	2,481	183,960	758,065	
Calgary Municipal Ry.	55.50	585,466	16,542	387,934	133,138	100,936	2,587,233	13,909,238	7,707
Calgary Resources Development	1.75	204		1,128		—923	6,388	4,097	
Cape Breton E. R.	30.59	243,392	125,133	150,977	112,842	104,705	696,081	4,643,990	
Chatham, Wallaceburg & Lake Erie Ry.	36.94	134,274		89,628	39,353	5,291	468,705	348,774	106,390
Cornwall E. R.	4.00	34,443	81	28,268	1,168	5,088	223,273	438,996	93,318
Edmonton Radial Ry.	52.37	497,117		391,276	253,992	—148,150	1,905,922	10,148,382	260
Fort William S. R.	19.88	117,452		94,177	56,190	—32,914	629,688	2,672,114	
Guelph Radial Ry.	8.50	46,873	302	36,756	1,753	8,666	232,700	1,097,503	14,000
Halifax Tramways	12.29	399,105	224,651	249,230	61,848	312,678	1,380,474	8,935,380	
Hamilton and Dundas E. R.	7.00	74,628		61,945	6,265	6,417	157,464	935,628	361
Hamilton, Grimsby & Beamsville E. R.	22.00	133,235		130,222	14,598	—11,585	396,500	660,420	40,113
Hamilton S. R.	33.70	741,349		451,891	95,443	194,014	2,783,918	16,542,136	
Hamilton Radial Ry.	25.00	170,742		140,491	58,829	—28,578	503,467	1,322,615	29,026
Hull Electric Co.	15.67	197,785	35,190	129,849	78,723	24,393	817,016	3,102,929	8,583
International Transit Co.	4.30	140,625	914	76,261	10,695	54,583	283,129	2,121,868	
Kingston, Portsmouth & Cataraqui E. R.	8.00	52,429		38,865	10,075	3,489	199,680	1,055,982	
Lake Erie and Northern Ry (3)	51.00	169,211	128	124,463	5,396	39,479	942,613	373,299	—55,512
Lethbridge Municipal Ry.	11.00	48,540		42,439	27,031	—20,930	268,659	991,678	
Levis County Ry.	11.75	95,069	2,665	100,769	22,543	—25,578	435,437	2,061,998	2,260
London S. R.	36.02	416,366		301,937	40,401	74,027	1,932,316	11,234,977	
London & L. Erie Ry. & Transport'n Co.	29.75	60,516	48	70,181		—9,615		333,669	6,500
London and Port Stanley Ry.	23.60	516,685		207,356	71,833	37,495	844,062	726,799	471,114
Moncton Tramways, Elec. and Gas. Co.	4.47	16,883		16,873		9	100,838	414,781	
Montreal Tramways Co. (4)	124.26	7,725,498		4,601,771	2,248,373	875,353		179,974,549	
Montreal & Southern Counties Ry.	52.20	264,231	303	274,236	71,699	—81,399	767,918	2,057,574	10,450
Moose Jaw E. R.	9.00	104,982		80,733	6,389	17,859	445,814	2,347,484	
Nelson S. R.	2.13	14,092		12,532	3,355	—1,795	61,594	323,148	
Niagara Falls Park and River Ry.	11.91	173,404	6,211	92,941	35,518	15,155	262,221	1,335,579	
Niagara, St. Catharines & Toronto Ry.	61.58	756,590		547,174	71,721	137,694	1,461,776	5,643,150	405,051
Niagara, Welland & Lake Erie Ry.	1.87	32,011	27	12,521	3,254	16,262	87,834	693,843	
Nipissing Central Ry.	15.37	98,889	371	78,073	11,794	9,393	251,516	1,297,298	5,982
Oshawa Ry.	9.00	145,836	1,346	87,404	2,846	56,982	90,138	286,486	213,888
Ottawa E. R.	28.11	1,194,731		696,528	104,060	394,142	4,913,611	28,286,233	
Peterborough Radial Ry.	6.55	68,225		45,349	9,950	12,925	437,896	1,550,610	
Pictou County Electric Co. (5)									
Port Arthur Civic Ry.	12.43	114,609		91,986	69,097	—46,474	650,885	2,624,461	
Quebec Ry., Light and Power Co.									
Citadel Division	21.04	560,953		357,753		203,200	2,277,121	13,165,318	
Montmorency Division	28.60	229,109		186,126		42,983	473,406	1,947,667	
Regina Municipal Ry.	32.12	223,364		190,722	91,827	—59,185	943,162	4,914,140	25,618
Sandwich, Windsor and Amherstburg Ry	41.34	383,816	31,776	229,339	48,900	137,353	1,163,765	6,988,316	
Sarnia S. R.	8.25	70,333		50,739	5,565	14,048	209,196	1,270,288	207,801
Saskatoon Municipal Ry.	12.63	185,261		134,596	39,068	11,595	757,734	3,624,268	
St. Thomas S. R.	7.00	17,381		24,689		—7,307		436,332	
Schomberg and Aurora Ry.	14.40	17,087		21,210	28,747	—32,871	52,296	39,931	9,706
Shawinigan Falls Terminal Ry (3)	3.75	45,300		38,855	8,779	—2,334			22,398
Sherbrooke Ry. and Power Co.	9.00	55,333	61,997	52,054	64,152	1,124	390,681	1,237,760	
Suburban Rapid Transit Co. (Winnipeg)	21.02	64,307	27,516	84,509	35,310	—27,996	578,130	1,189,190	640
Sudbury-Copper Cliff Suburban E. R.	6.24	25,980		11,315	10,360	4,304	54,626	251,053	
Three Rivers Traction Co.	7.10	60,275		43,904	15,726	644	328,199	1,150,050	
Toronto Ry. (6)	60.69	6,081,604	90,000	3,403,846	1,381,895	1,385,862	20,585,398	152,782,659	
Toronto and York Radial Ry.	72.17	608,967		450,968	147,066	10,932	1,696,145	6,688,327	48,409
Toronto Civic Ry.	9.75	249,505		216,516	90,245	—57,255	1,334,650	14,696,841	
Toronto Suburban Ry.	18.79	207,317	1,863	104,406	58,545	46,230	502,357	3,534,616	866
Windsor, Essex & Lake Shore Rapid Ry.	36.17	180,809		104,508	59,050	17,249	401,716	701,066	
Winnipeg Electric Ry.	110.20	2,103,344	554,829	1,445,509	615,584	597,479	10,362,151	53,679,957	40,630
Winnipeg, Selkirk & Lake Winnipeg Ry.	40.69	131,920	16,205	90,760	43,490	13,873	420,663	697,594	4,574
Yarmouth E. R.	3.00	41,126	40	14,607	12,575	14,019	86,870	237,390	
<b>Total</b>	<b>1,743.54</b>	<b>\$30,237,663</b>	<b>\$2,292,200</b>	<b>\$20,098,634</b>	<b>\$7,552,368</b>	<b>\$5,528,763</b>	<b>84,073,046</b>	<b>629,441,997</b>	<b>2,333,539</b>

(4) Montreal Tramways Co., additional mileage	7.65
(5) Pictou County Electric Co.	9.10
(6) St. John Ry. (New Brunswick Power Co.)	18.15
<b>Total</b>	<b>1,178.34</b>

Less Deficits..... —649,902  
Total net income..... \$4,878,861

See notes on page 303.



## Snow Clearing on Ottawa Electric Railway.

During the last two winters the Ottawa Electric Ry. had considerable trouble about snow removal, teamsters demanding more pay whenever a specially heavy snowfall occurred. Early in February last the teamsters struck for 10c a load increase, and the management decided it was time to try some other method. A Ford truck, with a capacity of 1½ tons, was put into operation, and tests showed that it could dispose of twice as many loads in a day as the ordinary team of horses and a sleigh. The work of the truck was facilitated by the city authorities allowing the snow to be dumped through manholes into the sewers, and providing a list of manholes that could be so used at points where a very strong current of water was passing. The company followed this up by putting on 14 more trucks, which, with the help of its own teams, enabled it to get through the winter. It was intended to have 30 trucks ready for the first snowfall next winter. One advantage of the trucks will be that at the close of the day new drivers and a fresh gang of men can be put on to work

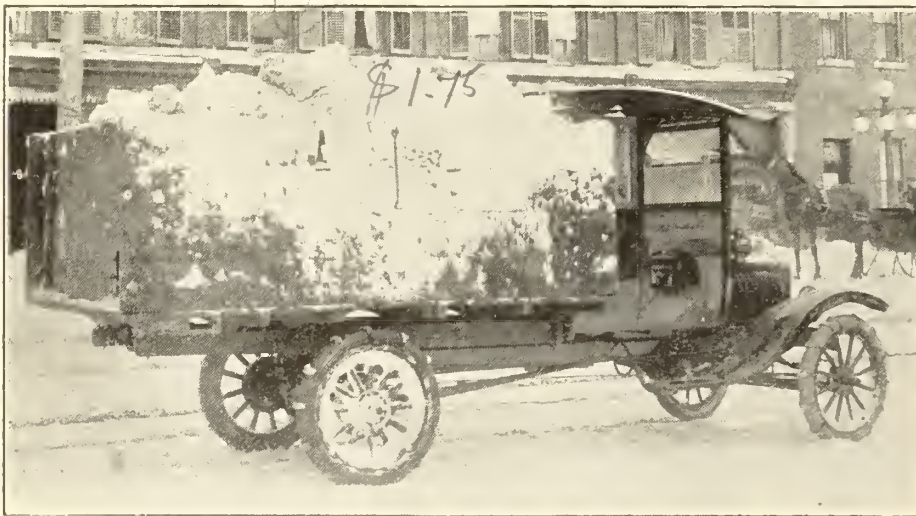
## Proposed Purchase of Ottawa Electric Railway by the City.

The Ottawa City Council has for some time past had under consideration the question of the Ottawa Electric Ry.'s franchise, and the conditions under which it might be extended, or under which the city might acquire the property. The question was taken up by a committee and suggestions were made to the council on Feb. 18 passed a resolution stating that the company's franchise would expire Aug. 13, 1923; that the directors had announced that they did not propose to make any extensive alterations or improvements to the system until the expiration of the franchise, and that under such a policy the street railway service might deteriorate during the next five years. The board of control was asked to consider the appointment of a committee of three or more selected from the board, from the council or from outside to investigate the question of the street railway service and to open negotiations with the company for the purchase of the railway, for the further extension of the franchise or any alternative plan, with a view to submitting whatever was decid-

the opinion that the present is not an opportune time to take over the property owing to war conditions, but that it is not too soon to prepare for the taking over of the line in 1923, and recommends that a question on the matter be submitted to the ratepayers at the next municipal elections.

Other sections of the report deal with the future proceedings. It is recommended that in the event of the line being taken over its management should be entrusted to a commission of three, one of whom should be the mayor, and that they should hold office for say three years. Then a form of question for the plebiscite is given with a recommendation that each elector should have one vote to be cast where the elector is entitled to vote for mayor. The board recommends that if the question is settled in the affirmative the council shall then draft and obtain the necessary legislation. It may be possible to appoint a commission under existing legislation, but it might be advisable to secure special powers; it also might be desirable to secure power to enable the portions of the line in Ontario outside the city, as well as the portions in Quebec; the rights of the city and company in regard to the part of the railway in the former village of Hintonburg should be considered and provided for; the method of arbitration should be provided for; the waterpower rights should be looked into, and council should have power to acquire such powers either in Quebec or Ontario; and finally the board suggests that the commission should be in office well in advance of the period when the line should be taken over, and that the commissioners should carry on the negotiations with the company.

The report was taken into consideration at a special meeting of the council June 24.



Ottawa Electric Railway Motor Truck for Snow Removal.

throughout the night, as the trucks will not tire out as horses do. In the meantime the teamsters' strike was broken, and the men feel they made a mistake in acting as they did.

The accompanying illustration shows a snow box body, as mounted on a Ford 1-ton truck by the Ottawa Car Mfg. Co. Following are the dimensions of the box inside:—

Length .....	8 ft. 5 in.
Width .....	5 ft. 4 in.
Height .....	3 ft.
Thickness of material in sides and ends.....	¾ in.
Thickness of material in bottom.....	1½ in.
Thickness of material in bolsters.....	1¾ x 3 in.
Thickness of material in sub-sills.....	1¼ x 5 in.

The bodies are built in sections, and are held together by tie rods, battons and strap bolts. The sides are constructed with a door 2 ft. 2 in. wide, extending full length of body and attached to the top boards by 4 hinges, permitting the snow to be loaded and unloaded in a speedy manner; hooks are provided at the rear end to hold the door open when unloading. The bottom is constructed of 1½ in. pine, securely screwed to the hardwood bolsters, which are divided along the body, giving sufficient wheel clearance. The bolsters are bolted to the subsills, which are securely clipped to the chassis frame.

ed upon to a vote of the electors at the next municipal elections. While the matter has been mentioned at different meetings of the board of control and of the council since February, no committee was appointed, and on June 4 the council again referred the resolution of Feb. 18 to the board of control. We are officially advised that up to June 14 the company had not been approached in any way upon the matter.

The board of control considered the council's resolution on June 20, when a report was prepared. It deals with the franchise agreement entered into between the city and the company on June 28, 1893, to run for 30 years from Aug. 13, 1893, and giving the council the right, after giving 6 months notice to acquire so much of the system as is situated in Ontario, during the currency of the agreement, and it also sets out the property to be acquired in connection therewith, and the method by which its value is to be arrived at. At the expiration of the agreement the city can take over the line as a matter of course, but if it does not do so at that time it has the right, upon giving a year notice, to take over the system at the end of any fifth year thereafter. The board in its report expresses

The Toronto Railway and Women Conductors.—As mentioned in our last issue, the Toronto Ry. Co. has decided to engage women conductors for service on its cars. This decision was strongly opposed by the members of the Toronto Ry. Employees Union in a resolution passed at a meeting of members called to discuss the matter, which was mentioned in the same issue. The General Manager of the company stated recently that it was the intention to place women conductors in charge of the cars, which are to be altered and provided with prepayment platforms and doors. In preparation for this, suitable dressing and rest rooms are being prepared at the sheds, and these will be in charge of a matron.

Public Utilities Commission for Brantford.—As the result of a conference between representatives of the Brantford, Ont., City Council and members of the Brantford Municipal Ry. Commission, the Mayor stated, June 20, that he would take steps to have a public utilities commission organized to take over the control of the municipal railway, the waterworks, and the other public utilities.

The American Electric Railway Association's Convention will be held at Atlantic City, N.J., Oct. 8, 9 and 10. Owing to war conditions, the convention meeting period has been somewhat curtailed, and there will be no exhibits in connection with it.

The Calgary, Alta., City Council's finance committee decided June 13 to recommend that a tax of 5% on the gross receipts of the municipal railway and other public utilities be levied towards general municipal purposes.



## Notes to Electric Railway Statistics.

(1) The Berlin & Waterloo S.R. is now called the Kitchener & Waterloo S.R.

(2) The Calais S.R. is the line reported in previous years as the St. Stephen S.R. of New Brunswick, Calais being the contiguous town in Maine, where the line is owned and from which it is operated. The mileage given is not in Canada.

(3) The only additional companies in the list for the year ended June 30, 1917, are the Lake Erie & Northern Ry., 51 miles, and the Shawinigan Terminal Ry., 3.75 miles. The former is a new line, the latter has been operating for a number of years.

(4) The figures given for the Montreal Tramways Co.'s first main track mileage, 124.26, are those used in the 1915 statistical tables, in which they were stated to be the figures used in 1911 report. The actual first main track mileage at June 30, 1917, was 131.91 miles, the difference between which and the figures given by the Department we have added at the bottom of the column in the table showing mileage. The earnings, expenses and passengers carried are apparently taken from the company's report for the year ended June 30, 1917, as given in Canadian Railway and Marine World for Oct., 1917., pg. 404.

(5) The Railways Department does not receive returns from the New Brunswick Power Co. and the Pictou County Electric Co. The latest figures we have of those companies' first main track mileage 18.15 and 9.10 miles respectively have been added by us at the bottom of the table to show the total mileage in Canada, viz.:—1,778.34, against 1,743.54 shown by the Railways Department.

(6) The Toronto Ry. first main track was reported at June 30, 1916, to be 116.44 miles, with second track of 2.51 miles, while this year the track is described as: First main track, 60.69 miles, second main track, 58.36 miles.

The Edmonton Interurban Ry., which has 8.19 miles of track, is omitted from the table. It was not operated during the year.

The New Brunswick Power Co.'s line, formerly the St. John Ry., is also omitted from the table. It does not make returns to the Dominion Railways Department.

## Assessment of Municipally Owned Street Railways in Ontario.

The Ontario Legislature, at its recent session, by sec. 39 of the Statute Law Amendment Act, added a section and a subsection to the Assessment Act relative to the assessment of land used by municipal public utilities. The section no. 45a, provides that land owned by or vested in any body acting for or on behalf of a municipal corporation and used for public purposes "or for the purpose of a railway, electric railway, street railway or tramway," shall be liable to assessment and taxation for municipal and school taxes in the municipality in which it is situate, at its actual value, according to the average value of land in the locality." The subsection excepts buildings, machinery, works, structures, substructures, superstructures, rails, ties, pipes, poles and other properties, and easements, etc., and declares that all these "shall continue to be exempt from assessment and taxation as heretofore."

The Regina, Sask., city council is considering a proposal for carrying returned wounded soldiers free on the municipal railway.

## Answers to Questions on Electric Railway Topics.

In response to questions addressed to the American Electric Railway Association's question box, answers have been sent, as follows, by W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver, B.C.

**Car Record Forms.**—Does any company make use of a car record form on which appears an outline picture of a car and on which defects are shown by reference to the picture; if so, will you kindly furnish a sample?

We have recently considered the advisability of using such a form, and while we have not yet put it into practice, herewith is a copy of the form we contemplate using.

**Extra Fare Collection.**—What system of fare collection would you recommend under the following circumstances,—a 5c fare is charged within the city limits,

In British Columbia no licenses such as mentioned are required. A motorman is required to pass an oral examination in connection with the operation of his car. He is given considerable instruction in connection with the electrical apparatus, which he has to become acquainted with before he is permitted to take out a car. In addition to this examination he is required, of course, to pass eyesight and hearing tests.

## Ontario Railway Act Amendments.

An Act amending the Ontario Railway Act was passed at the Ontario Legislature last session. A new section, 260a, referring to penalties for neglect or refusal to obey any order of the Ontario Railway and Municipal Board, by any company operating a railway or street railway, to supply additional cars, given in full in Canadian Railway and Marine World for May. The act deals with devia-

Suggested car and record form, British Columbia Electric Railway.

and if the trip is continued an additional cent is collected, p.a.y.e. cars used. The passenger cannot be expected to come to the rear platform to deposit his extra fare; how then should the extra fare be collected?

It all depends on the type of farebox used. We have similar conditions on our lines in the city, where a second fare is collected at the city limits when cars are about to enter the suburban districts, or vice versa. We use the Coleman portable farebox and p.a.y.e. cars. When the cars reach the city limits the conductor goes through the car and collects the additional fares. In the case of payment of settlers' tickets, a passenger is handed a transfer when boarding the car, which indicates that a settler's ticket has been paid, and this transfer is collected at the city limits. We do not use registers on our city cars.

**Licensing of Motormen.**—Are the motormen of any member companies compelled to secure state or municipal licenses before they can operate a car; if so, under what provisions of law; are they licensed as electricians or do you know of any place where an electrician's license is required; what form of examination is required, if any?

tions of lines, and the operation of cars by a motorman-conductor.

The first matter is dealt with by the addition of a subsec. to sec. 79, providing that any deviation, change or alteration made in the railway or any portion thereof shall not impair, abridge or affect the company's right to operate the balance of the railway along any public street or highway of any municipality through which the railway runs under the terms of its agreement with the municipality, provided notice of the application to the Ontario Railway and Municipal Board for approval of the deviation plans shall have been given to the municipalities affected. A subsection, similar in principle, although not in language, has been added to sec. 243 of the act, and it is provided that these additional subsections shall not take effect as to any company until the Lieutenant-Governor-in-Council shall so order.

The enactment as to one-man cars is contained in a new section, 256a, and provides that no street or electric railway car, when carrying passengers, shall be operated with one man performing the duties of both motorman and conductor without the approval of the Ontario Railway and Municipal Board.



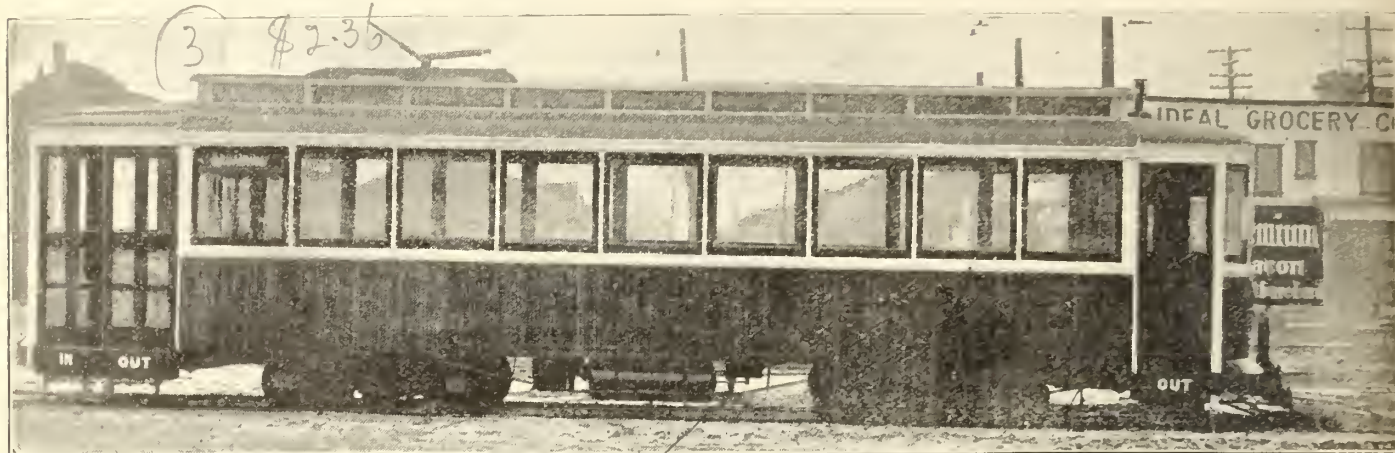
## Remodelled and New Cars for Winnipeg Electric Railway.

The remodelling of the Winnipeg Electric Ry.'s rolling stock, which has been under way for some time in accordance with an agreement entered into with the city in the latter part of April and published in Canadian Railway and Marine World for June, is being proceeded with rapidly in the company's shops at Fort Rouge, under the supervision of T. L.

with swinging door on left side, full panelling and sash in center, arranged to care for sliding door to be installed on right hand side, swing door arranged to swing in and towards side of car, sliding door at exit to close toward body post, center double dash arranged to allow conductor to make announcements without opening doors.

steps will be favored and 6 shaded lights in the body and 2 in each vestibule will be installed. The route signs will be of same pattern as on the remodelled cars.

The 15 open cars for summer use, with the side running boards, are also slated for treatment. The running boards will be eliminated and a center aisle cut through.



Remodelled Car, Winnipeg Electric Railway.

Robinson, mechanical engineer, and the remodelled cars are being turned out at the rate of six a month. While the remodelled cars are those that have been in service for some time, the extent of the changes and modifications is such that when finished they present almost a new appearance. The agreement referred to provides that the company must make the cars modern in every respect. Front exits, improved lighting and route signs, removal of running boards and installation of folding steps, are among the innovations called for.

The new front exits are on the same scale as the rear ones, only on a smaller plan. One 2-leaf folding door, to fold out and back, to be controlled by the motorman, is being installed, with which are

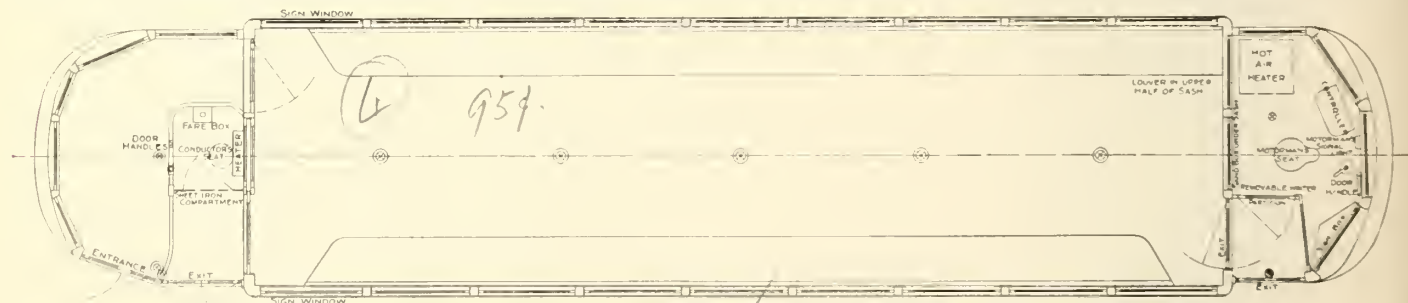
The changes in the rear platform consist of the installation of two 2-leaf folding doors in vestibule opening, rear set to fold out and back, and front set to fold out and towards body. The rear half of vestibule opening is used for entrance and the folding step works in conjunction with the folding door. The first half of the vestibule opening is used for an exit and each door is separately controlled, the controlling handles being mounted on rail near conductor. A protective compartment for the conductor is provided for, with heater, raised floor and a seat.

A new fender type has been adopted and the present trucks and motors are being removed, new or rebuilt ones taking their places. The new type of truck is provided with 26 in. wheels, with axles

### Proposed Sale of the London and Lake Erie Ry. and Transportation Co's Property.

After a number of ineffectual endeavors to sell this undertaking to the City of London, or to other municipalities through which it passes, the company advertised the property for sale by tender, the same to be submitted by June 29. Tenders were asked for the whole of the railway and undertakings as a going concern, or in the alternative, for the purchase, in separate parcels, of the right of way, lands, buildings, materials, equipment and rolling stock thereof, as follows:—

The company's railway and undertaking as now built and in operation from



Remodelled Car, Winnipeg Electric Railway.

operated a folding step, provided with anti-slip tread and kick plate. In the right hand vestibule window an illuminated keystone sign box is being placed. There is removable winter proof partition for the motorman, between the bulkhead exit and the vestibule door, glazed to allow the motorman full view of exit door and step and provided with door for motorman. The interior lighting arrangements include five shaded lights in the center of monitor deck, through selector switch on rear platform, the sixth light to be on rear platform over conductor's position. Keystone illuminated side window signs are being installed in each rear window.

The rear bulkhead is being installed

for G.E. 258 C motor or equivalent and having 3 3/4 in. x 7 in. journals. The present brake equipment and rigging is being modified to work efficiently with the new truck and motor equipment. The bolster is being modified to allow the use of roller side bearings which are being installed. The remaining present electrical equipment is being modified to meet requirements of new motor equipment.

Twenty-five end entrance p.a.y.e. double truck trailer cars will be built. They will be 41 ft. long and have a seating capacity of 48. They will be patterned after the same style as the remodelled cars and will be equipped with 2 baby motors and straight air brake equipment with emergency feature. Folding doors and

the City of London to the Village of Port Stanley, including power stations at Lambeth, St. Thomas and Union, the London terminal passenger and freight station, the London paint shop, substation and car barns at St. Thomas, and substations at Lambeth and Union; also all cars, locomotives, tenders, tools, machinery and supplies now owned and used by the company, together with the company's franchise.

The right of way, lands, buildings, materials, equipment and rolling stock belonging to the railway are briefly described as follows:

About 2,820 gross tons of 60 lb. steel rails. About 218 kegs of bolts and 1,200 kegs of spikes. Other iron and steel, con-



sisting of frogs, switches, broken rails, motor casings; snowploughs and worn shop material and the bridges at or near London, Lambeth, and St. Thomas. About 75,000 ties and 2,200 cedar poles, some 40 ft. long and none under 30 ft. Copper wire and bonds, consisting of 40 miles of no. 9 copper wire; 60 miles of no. 2, 30 miles of no. 0 (trolley), and 30 miles of no. 0000 feeder copper wire, and 10,560 copper bonds, the total weight of the copper herein mentioned being approximately 223,500 lb.

Equipment: 6 passenger cars, 2 combination passenger and baggage cars, 1 passenger car body without trucks, 3 passenger cars for summer use only, 2 baggage and express cars, 1 locomotive with 4 motors, 1 snowplough with 4 motors, 3 box and 6 flat cars and 8 spare motors. The cars are equipped with Westinghouse 93-2 60 h.p. motors, 2 to each car, and all equipment is standard and interchangeable.

Power stations at Lambeth, St. Thomas and Union. About 14 miles of privately owned right of way 33 ft. wide. Gravel pit, near Lambeth, containing about 12 acres. Stores, consisting of stationery, office supplies and fixtures, tools, line ma-

terial and various miscellaneous articles. Other real estate and buildings: London, terminal passenger and freight station, and lands used in connection therewith. London, paint shop, steam-heated and fully equipped for 4 cars. Lambeth, sub-station and lands used in connection therewith. St. Thomas, sub-station and car barns and lands used in connection therewith. Union, sub-station and lands used in connection therewith.

Deliveries of material and supplies to be made at St. Thomas.

While the property was thus offered for sale, negotiations with London, St. Thomas and adjoining municipalities for the sale of the line either as a complete whole or in sections had not been finally broken off. At a meeting of representatives of several of the municipalities through which the line passes, held at Lambeth, Ont., June 18, a committee was appointed to meet the directors, and to arrange for holding public meetings with a view of having bylaws passed to provide for the operation of the line. The immediate suggestion is apparently to secure the continued operation of either a part or the whole line, the municipalities guaranteeing the expense.

## Regina Municipal Railway Investigation.

The Regina, Sask., City Council favors the holding of a judicial investigation into a number of matters affecting the Regina Municipal Ry., which have given considerable trouble for some months past. A sub committee has had the matter of the reference under consideration for some time, and approved of its terms on June 13. The committee's report is as follows: "As directed, the street railway sub committee has had under consideration the question of the matters to be investigated by a judge in connection with the administration of the street railway department. The committee have conferred with the City Solicitor and attaches hereto a memorandum containing some nine questions. The sub committee consider that questions 1, 2, 3, 4, 6, 7, 8 cover the matters which should be referred to the judge for investigation. It would seem that the matters mentioned in questions 5 and 9 can only be properly enquired into by a street railway expert.

"The opinion having been expressed that a judicial investigation should be held, the sub committee suggests that the City Solicitor be instructed to take whatever steps may be necessary to request a judge to hold such investigation in accordance with sec. 53 of the city act at the earliest possible date.

"The sub committee further suggests that the City Solicitor be instructed to write Wilford Phillips or Wilson Phillips of Winnipeg, requesting one of them to arrange to enquire into and report upon the matters mentioned in questions 5 and 9 of the attached memo, so as to be in a position to submit his report thereon at the same time as that of the judge. (Note.—Since this recommendation was made, Wilford Phillips has died.)

"The sub committee further suggests that the City Solicitor be appointed to represent the city's interests during the investigation."

The Regina Leader gives the following as the questions upon which the judicial investigation, which will be held by Judge Hannon, will be made:—

Have street railway tickets been im-

properly used? If so, by whom and in what manner?

Has there been gross carelessness in the handling of street railway tickets, cash fares, or in checking same with conductor's returns? If so, by whom, and in what did the negligence consist?

Was the system of accounting in this department put into effect by the Treasurer's department? If so, when and to what extent has it been departed from, and who is responsible?

Has there been any change in the methods of accounting, care and destruction of used tickets, or in operating methods since the beginning of 1918, and if so, what are those changes, and by whom were they made, and when?

Is the efficient operation of the system lessened to any appreciable extent by the attitude of the management to the men; a want of co-operation among the employees; a spirit of disloyalty on the part of the men engendered by lack of confidence on the part of the council, the public or any other body towards said management? If the efficient operation of the road is lessened by reason of the matters referred to above, what is the remedy?

Has any officer, servant or employee of the street railway, or connected in any way therewith been guilty of dishonesty, negligence or incompetency in the discharge of his duties, or otherwise, and if so, in what particular?

Have the mechanical and traffic conditions in connection with the operation of the Regina street railway system been satisfactory? If not, in what way can they be improved, having particular reference to the following: Breakdown of cars en route; prompt arrival of relief cars; proper spacing of cars.

Taking the system as handed over to the present management, has the equipment been maintained and used to the best advantage in order to get the largest revenue consistent with satisfactory service? If not, is the failure to get these results attributable to the management or to other causes?

## The Winnipeg Sympathetic Strike.

Street railway transportation in Winnipeg was tied up for three days during the week which began on May 18, owing to 1,000 employees of the Winnipeg Electric Ry. striking, in sympathy with civic employees who struck for advances in wages. The strike, which involved 15,000 workers, in over a dozen unions, was the most disastrous in the history of the city and from the time that the first civic employees walked out until a settlement was effected was over a month.

The city was without street car service on one of the most important holidays of the year, viz., May 24, being the first summer holiday, and the tie up, while it only lasted three days, caused inconvenience to thousands of workers, who, living in the outlying districts, had to walk in many cases as much as six miles to get to their places of employment. Hundreds of owners of motor cars co-operated, at the request of the civic authorities, and at the rush hours a continuous string of cars could be seen passing up and down the busy thoroughfares.

The street car men went out on the morning of May 22, and a settlement was reached at noon on May 25, as a result of the visit of Senator Gideon Robertson, who acted as a mediator, and who, at the time the street car men struck, was on his way west. The street car men were called out as a last resort by the striking committee and this action was considered the trump card.

A magnificent spirit of co-operation was manifested throughout the city in a desire to keep the public utilities running. Society women, who did not know the meaning of work, manned the telephone switchboards and helped to maintain a service for a week that the operators were out. Girls in railway offices dropped their pens, donned overalls and hustled trucks when the freight handlers joined the striking unions, and private motor car owners acted as jitney drivers in their desire to assist to their work those who had long distances to travel.

The underlying motive of the strike was not based entirely upon the refusal of the city to grant increases in the different departments, but rather on a point of principle. The city maintained that employees should arbitrate matters of this kind in war time. Labor spokesmen asserted that the life of unionism rested solely upon the right of labor to strike to procure their demands. The thorn in the flesh, in so far as the city was concerned, was due to the fact that about three-quarters of the firemen, who had lately formed a union, were the first to go out in sympathy, leaving the city without adequate fire protection. The basis of the agreement finally reached was that all matters affecting increases in wages should be arbitrated, with a strike as the last resort.

The Winnipeg Electric Ry. suffered the loss of thousands of dollars in revenue as a result of the rolling stock being tied up over the holiday. May 24 came on a Friday and preparations had been made on a large scale for entertaining the public at the various parks. Up until noon of the holiday hopes were held out that an agreement would be reached that day, and crews were at the various barns waiting to take their cars out. The walkout, from a street railway standpoint, was very regrettable, owing to the fact that only a short time before a new schedule had been drawn up for the street car men, providing for increases in all branches, and the best of relations exist between the company and its employees.



## Increases in Electric Railway Freight and Passenger Rates.

The Board of Railways Commissioners has passed the following orders, in addition to those given in Canadian Railway and Marine World for May and June:—

**Brantford & Hamilton Electric Ry.**—27,270, May 30. Authorizing B. & H.E. R. to increase its freight rates, except on coal and coke, by 15%, and its rates on coal and coke by 15c a ton, the increased rates to become effective on the company complying with requirements of sec. 327 of the Railway Act.

27306, June 14. Approving B. & H.E. R. standard mileage freight tariff C.R.C. 4, to become effective July 1, same having been filed with board on basis permitted by order 27,270.

**Chatham, Walalceburg & Lake Erie Ry.** 27,309, June 15. Authorizing C.W. & L.E. R. to increase its freight rates, except on coal, by 15%, its rates on coal by 15c a ton, and its passenger rates by 15%; the increases to become effective on the company complying with secs. 327 and 351 of the Railway Act.

27312, June 18. Approving C.W. & L.E. R. Standard Freight Mileage Tariff C.R.C. 430, and Standard Passenger Tariff C.R.C. 37, which have been filed on the basis permitted by the board in order 27309, June 15, 1918, the tariffs to become effective July 1.

### OTHER APPLICATIONS AND INCREASES.

**Edmonton Radial Ry.**—Canadian Railway and Marine World for June contained some particulars of increased fares put in effect on the municipal railway in Edmonton, Alta., on May 1. We have since received the following official information: The cash fare, heretofore 5c at all hours, has been increased to 7c up to 11 p.m., after which it is 10c. Tickets are sold on the cars at 4 for 25c and at ticket selling stations at 5 for 25c. Two tickets are required for night fares.

Workmen's tickets have been abolished. Heretofore they were sold 8 for 25c, good in the early morning to 8 a.m. Up to July, 1914, they were also good between 5 and 6.30 p.m.

Children under 6 years of age are carried free. Children over 6 and under 15, including high school pupils carrying certificates, are sold 10 tickets for 25c, against 12 for 25c as heretofore. After 11 p.m. children pay half fare.

No change has been made regarding transfers. Between 5 and 6.30 p.m., baby carriages and large parcels are charged for at 5c each. The Superintendent, J. H. Moir, advises us that the ticket system is of great benefit on the one man cars, saving considerable time in collecting fares and making change.

**Fort William Municipal Ry.**—The Fort William, Ont., City Council on June 14, amended the fare schedule for the municipal railway, subject to the Ontario Railway and Municipal Board's approval, as follows:—Adults, 5c cash; tickets, 5 for 25c; children, 5 to 12 years, 5c or one ticket; children's tickets, 8 for 25c. Double fares will be charged on cars running between 12 midnight and 5.30 a.m. The privilege of riding free heretofore granted to Dominion policemen has been abolished.

The London St. Ry. put into operation a straight 10c cash fare for the round trip on its Springbank line, June 20, and discontinued the issuance of transfers to and from the city lines. The new fare is at the rate of a cent a mile.

The Hamilton Radial Electric Ry.'s ap-

plication to the Board of Railway Commissioners, for permission to file tariffs providing for a general advance in passenger fares to a maximum of 2½c a mile, and a general advance in freight rates of 15%, as was permitted by the board in the case of steam railways, was heard by the board at Toronto, June 24.

The Montreal & Southern Counties Ry.'s application to the Board of Railway Commissioners, for authority to file tariffs providing for a general advance in freight and passenger rates, to the same extent as the board has permitted in the case of steam railways, was heard at Montreal June 10, when decision was reserved.

**Montreal Tramways Co.**—The question of increased passenger fares in Montreal has been under consideration for some time, and was to a certain extent mixed up with the question of the increase of employes wages. Towards the end of May there was a conference at the Montreal City Hall of representatives of the municipalities within which the M. T. Co. operates, upon the wages question. There was a general agreement that the men were entitled to some increase of wages, but their demands were considered excessive. The effect of increased wages upon the fares to be charged was discussed and a resolution was passed favoring an increase. While it was felt that an increase of fares was justifiable, the conference did not pass any resolution favoring it.

Another conference was held June 20, at which the commissioners submitted figures showing the following estimated increases in cost of operation:

Estimated increase in wages.....	\$ 750,000
Deficit since contract put into force...	400,000
Estimated increased cost of material..	1,000,000
Additional fixed charges .....	280,000
<b>Total .....</b>	<b>\$2,430,000</b>

The commissioners are also reported to have pointed out that these figures were not the fares they would fix, that there was the question of free transfers or transfers to be paid for, and probably other changes in the general traffs which would bring the general city fare down below the actual cost per car mile based on the estimate of the revenue and the number of car miles covered. It was stated that the cost per mile for operating last year was 18.67c and for maintenance 7.22c., making a total cost per car mile of 25.89c. The estimate for the ensuing year was placed at 30.505c per car mile, meaning an increase in the cost per car mile of 4.61c, and of this amount 2.74c represented the increased cost of operating, and 1.87c the increased cost of material.

On June 22 the commissioners announced the changes they had decided on, to be put into effect about the middle of July. An official copy of the new schedule has not been received and the following figures are taken from press reports and are subject to correction.

Cash fares, heretofore 5c; new rate 6c. Midnight to 5 a.m., heretofore 10c; new rate, 15c.

Unlimited tickets, heretofore 6 for 25c; new rate, 5 for 25c.

Workmen's limited tickets, heretofore 8 for 25c; apparently abolished.

School children's tickets, no information as to old rate; new rate, ages 5 to 16, week days only, from 8 a.m. to 6 p.m., 7 for 25c.

Transfers heretofore free, in future free to all passengers between 5 and 8 a.m. At other hours 1c extra.

Representatives of the City of Montreal and of other interested municipalities stated at once that the commissioners' decision would be appealed against to the Quebec Public Utilities Commission.

**Windsor, Essex & Lake Shore Rapid Ry.**—27,308, June 15. Authorizing W.E. & L.S.R. Ry. to increase its freight rates, except on coal, by 15%, and its rates on coal by 15c a ton; the increases to become effective on the company complying with sec. 327 of the Railway Act.

**Quebec Railway, Light & Power Co.**—Full particulars of this company's application to the Quebec City Council, for authority to increase its passenger fares on its city division, also its gas rates, were given in Canadian Railway and Marine World for April, pg. 161. The city council, on May 31, approved of the proposed increase in gas rates and favored granting the request for increased passenger fares in part only, but at a meeting on June 14 a compromise was arrived at. Following are particulars of the fares heretofore in force, of the increases asked and of what the city council has agreed to:

Cash fare 5c, no change asked. Tickets, former rates, unlimited tickets 6 for 25c and 25 for \$1. The company's request to change to 5 tickets for 25c and 21 for \$1 was approved by the council.

Workmen's tickets, heretofore sold 8 for 25c, and were good between 6 and 8 a.m. and 5 and 7 p.m., for either males or females. The company wishes to abolish these tickets altogether, but the council would not consent, and it was finally agreed to sell 7 tickets for 25c to be limited for workmen and good between the same hours as formerly. These tickets will not be honored if presented by females, in connection with which it may be mentioned that the Civil Code, article 2013A, as amended by 7 George V, chap. 52, provides that: "The word 'workmen' includes the artisan, the laborer and generally everyone who makes his living by manual labor."

School children's tickets, old rate 10 for 25c. No change was asked. Children under 7 years of age, when accompanied by parents or guardians, were carried free. The company asked that all children under 7 years, except those in arms, pay 3c cash fare or buy 10 tickets for 25c. The council agreed to this.

Transfers have been issued free, and permission was asked to charge 1c each for them, or to sell 5 transfer tickets for 5c, which the council did not agree to.

The company asked to be relieved of its obligation to pay the city 4% of its gross earnings, but the council would not consent.

A Quebec press dispatch of June 19 said many citizens were preparing for the higher street car fares about to go into effect, by buying tickets wholesale at the old rate of 6 for 25c.

**British Tramway Fares.**—At the request of Sir Albert Stanley, President of the British Board of Trade, the House of Commons has appointed a select committee to investigate the need of increasing tramway fares in Great Britain. A deputation from the tramway associations, both municipal and company, appealed to him recently for financial assistance, which they maintained had been made imperative by the enormous rise in wages and the heavy increase in charges for material.



## The Winnipeg Electric Railway's Motor Omnibusses.

The Winnipeg Electric Ry. Company is operating 4 motor busses, in a section of the city that is not served by the electric railway lines, in accordance with the agreement entered into with the city recently that the street car service in outlying districts be supplemented by motor busses until the trolley lines are extended into that area. The service is very satisfactory from the public standpoint and as only three busses are in operation at one time, one is kept for emergency use should a breakdown occur. They are standard one ton, 16 passenger type. The busses are finished in gun metal with an ivory stripe, weigh 3,700 lb. and cost \$2,295 f.o.b. Walkerville, Ont.

The specifications of the busses are as follows: Wheel base, 125 in.; frame of pressed steel channel section 5 x 3 x 3/16 in., width 36 in., length overall 186 in.;

shifting clutch. Pedal adjustable. Brakes, emergency expanding band type. Service, contracting band type. Brake bands faced with woven wire asbestos material 2 in. wide acting on 15 in. brake drum. Brake rods equipped with equalizer beams. Brake pedal adjustable. Hand control, centre control. Lamps, electric dash lamp, tail lamp and head lamps (the latter provided with dimmer switch).

## Complaints Against Halifax Electric Railway Service Disposed of.

The Nova Scotia Board of Public Utilities had before it recently a complaint against the Nova Scotia Tramways & Power Co. The Halifax Chronicle reports the board as having given judgment as follows:—

The complaint filed against the tramway company was divided into these particulars: 1. Irregularity of service. 2. Failure to stop at street intersections to take passengers. 3. Failure to operate

be necessary. Whether snow banks should be permitted to remain on the business streets of a city the size of Halifax, tramway or no tramway, in view of the very considerable additional cost thereby thrown on merchants, truckmen, teams and others engaged in transportation, as well as the inconvenience experienced by pedestrians at times of rains and thaws, is a matter of policy which must be determined by the civic authorities, and with which this board has nothing to do. For some years the city and the company jointly removed the snow under an alleged agreement, which was not produced. If satisfactory service is to be furnished, the snow must be removed and the gutters and catch-pits kept open, and it is not enough to remove merely the snow thrown up by the ploughs. The company and the city should be jointly responsible, and each should bear the cost of removal, the one doing the work, and the other bearing a proportion of the cost.

The traffic conditions—the slowly mov-



Winnipeg Electric Railway's Motor Omnibusses.

transmission, selective type mounted on rear axle, 3 speeds forward and reverse; gear ratios, 1st, 18.2:1; 2nd, 10:1; 3rd, 5:1; reverse, 23.7-8:1. Equipped with roller bearings, aluminum transmission case. Propeller shaft, equipped at either end with universal joints, tubular 1 1/2 x 3/16 in. wall. Axles, front, forged L-beam section; rear, full floating, equipped with roller bearings. Cast steel housing. Axle shafts, 1 1/2 in. in diameter. Chrome nickel steel, radius rods. Drive is through radius rods. Torque arm, pressed steel channel section, firmly bolted to transmission case and secured in axle housing by forged braces. Springs, semi-elliptic in front, semi-elliptic in rear. Spring centers, front, 37 11/16 in., 2 in. wide; rear, 51 in., 2 1/2 in. wide. Steering gear, left hand drive, 18 in. steering wheel, irreversible worm and gear. Spark and throttle control, hand control on steering wheel, carburetor accelerator operated by foot. Wheels, wood, artillery type, 12 spokes. Heavily constructed for truck purposes. Brake drums securely bolted to spokes. Tires, plain tread tires in front, 35 x 5 pneumatic. Safety tread tires in rear, 35 x 5 pneumatic. Clutch, cone type faced, with woven wire asbestos material. Clutch pedal mechanism connected to ball thrust bearing on propeller shaft for

the so-called Gottingen street extension. 4. Failure to operate the line from North street to Richmond. 5. Failure to operate the Armdale line.

As to the first ground of complaint, the company admitted that the service was not as satisfactory as could be reasonably desired, but this was owing to the following conditions which the company could not control: 1. Severe weather. 2. Failure of city authorities to remove snow shovelled off sidewalks. 3. Failure of city authorities to open catchpits and clear gutters, or cause same to be cleared. 4. Difficulty on the part of the company of obtaining necessary labor to promptly remove snow thrown up by company's sweepers. 5. Traffic conditions.

The board states that weather conditions threw a heavier burden on the company than usual, and from the facts brought out at the investigation, and always bearing in mind the labor available, it would seem that the company bent all its energies to meet the weather conditions and to keep its tracks open.

The city authorities, during the past winter, removed no snow from the streets on which the car tracks are placed, taking the position that were it not for the tram service the removal of such snow as is shovelled from the sidewalks would not

ing heavily laden auto trucks travelling in the tramway and disregarding the motorman's signals, and the practice of leaving autos and other vehicles close to the tracks—was largely responsible for the many delays and bunching of cars which occurred during the past winter. The older motormen on the tramway testified that conditions were never so bad as during the past year, and, given the track free from obstructions, they would be able to give a reasonably satisfactory service.

As to the complaint that cars had failed to stop at street intersections for passengers, the board found that in many instances the cars were running "express" in order to recover lost time. It was in the interest of passengers farther on who were waiting for cars that the foremost cars of a bunch should not stop at every corner. It is not in the company's interests to run empty cars.

As to the Gottingen St. line, it was found that it was blocked on account of the blizzard following the explosion and the scarcity of labor, but it had been opened as speedily as possible, and to the mayor's satisfaction. The operation of the Richmond section was impossible on account of the damage to overhead construction. The Armdale line has been in



operation continuously, and there was no evidence to the contrary.

The board made the following certain recommendations: 1. The city and the company should reach an agreement for the joint removal of snow. 2. The city authorities should see that all catchpits and gutters on streets draining toward tram tracks are open. 3. Traffic ordinances should be passed to give the right of way to tram cars, and to prevent ob-

struction. 4. If Militia and Defence Department motor trucks are operating without numbers, as alleged, they should be required to conform to the rules. 5. To separate cars that are bunched, the company may run the leading cars "express," that is, without stopping, but should indicate the fact by a sign. 6. As to whether the staff of inspectors is adequate, this is a matter of management with which the board will not interfere.

## Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**—The new sub-station at King Edward Ave., on the Lulu Island line, was expected to be completed by June 30. It is of reinforced concrete, 100 x 60 ft., and is equipped with 2 rotary converters of 1,000 k.w. each and 1 motor generator of 1,500 k.w. with the necessary fixtures. (June, pg. 255.)

**Calgary Municipal Ry.**—The Calgary, Alta., City Council is considering a plan for straightening and shortening the Ogden line in the interests of efficiency of service and economy of working. If the plan is approved, some time will be taken up in negotiating for right of way, etc. (May, pg. 211.)

**Edmonton Radial Ry.**—The car line on Twenty-seventh St., Edmonton, Alta., has been reballasted, and is reported to be in good condition. (Mar., pg. 117.)

**Fort William Electric Ry.**—Application has been made to the commission operating this railway by the Mount McKay & Kakabeka Falls Ry. to grant it running rights over the city lines to the vicinity of the market. C. H. Jackson and W. F. Hagarth, directors, attended a recent meeting of the commission and presented their case, but up to the time of writing no decision has been announced.

**The Hull Electric Co.**, according to a press report, proposes shortly to build an extension of its line. G. Gordon Gale, Hull, Que., is Vice President and General Manager.

We are officially advised that the extension referred to in recent press reports is the work on the Chelsea Road, of which mention was made in our April issue, pg. 164. The company does not contemplate any other extensions at present.

**The Levis County Ry.**, we are officially advised, proposes to undertake the reconstruction of 10 miles of track with stone ballast, and to build two miles of new line, using new ties on the whole. The work is to extend over practically the whole system in the municipalities of Levis, St. Joseph, Bienville and St. Romuald as far as the southern approach of the Quebec bridge. A contract has been let for 200 tons of 60 lb. steel rails, and the company is in the market for 16,000 ties, 70 kegs track bolts, 300 kegs track spikes and 2,500 continuous rail joints. H. E. Weyman, Levis, Que., is Manager.

**Nipissing Central Ry.**—The Dominion Parliament has granted an extension of time within which the company may make a number of extensions on branch lines, details of which were given in our May issue. (May, pg. 211.)

**Ottawa Electric Ry.**—The Ottawa City Council, on June 4, discussed the question of a proposed extension to Ottawa East and to the cemeteries, and a suggestion was made that in the event of the company refusing to make the extensions,

the council enter into an agreement with the Hydro Electric Power Commission to build them. It was stated that the extensions would probably cost \$800,000 at the present price of labor and materials. The route of the suggested extension to Ottawa East is from Sparks and O'Connor Sts. south on O'Connor St. to Argyle St., thence to Elgin St. across the Pretoria Ave. bridge to Hawthorn Ave., Ottawa East, to Main St., northerly to Echo Drive and through the G.T.R. subway to Nicholas St., thence to Laurier Ave E., and on to O'Connor St., thus making a complete loop. The proposed extension to the cemeteries would start at the corner of Beechwood Ave. and Creighton St., running along Beechwood Ave., Oakville Road and Hemlock Road. (May, pg. 211.)

**Port Arthur Civic Ry.**—The city council has decided to reconstruct the line on Arthur St. between Court and Cumberland Sts. The 80 lb. steel rails at present on Hodder Ave. will be removed for placing on Arthur St., and will be replaced with lighter rails. (Sept., 1917, pg. 368.)

**Quebec Ry., Light & Power Co.**—Plans for some small extensions in the city have been approved and the Quebec City Council was advised June 1, that work on these would be commenced as soon as the rails and other materials necessary were available. We are officially advised that in Sept., 1916, amongst other arrangements with the city, the company undertook to build its line on the Beaufort Road, extending to the city limits, 1.5 miles. This should have been completed by Dec. 31, 1917, but owing to the high cost of labor and materials and the practically isolated section of country through which the main part of the line would operate, the company decided to defer construction to a later period. A number of the residents of Beaufort district have petitioned the council to insist upon the construction being carried out, which, under existing conditions, the company considers unreasonable. However, the company is having a survey made, with a view of building at least a part of the line. (Jan., pg. 22.)

**Regina Municipal Ry.**—Plans are under consideration by the city council for the extension of the line into the North Annex. The Regina Leader, on June 12, questioned the wisdom of constructing any extension whatever and added: "With taxation mounting year by year and no prospect of it lessening, the citizens might expect their representatives in council to better defend them from schemes that will benefit a few people, at a cost that is really unnecessary." (July, 1917, pg. 286.)

The Western Power Co. of Canada has been authorized by the Dominion Parliament to own and operate a railway built by its predecessor, the Western Canada Power Co. This consists of a line built originally during the construction of the

company's power plant, which it was proposed to incorporate into a lengthy electric railway. The company also owns the Burrard, Westminster & Boundary Ry. (May, pg. 211.)

**Winnipeg Electric Ry.**—A press report of June 12, states that the company will install a Y at the western terminus of the Logan Ave. West line on Keewatin St., so that the new type of cars may be operated on the line. (June, pg. 255.)

## Electric Railway Finance, Meetings, Etc.

**Edmonton Radial Ry. results for April:**

Earnings .....	\$42,206
Expenses .....	32,477
Net earnings .....	\$ 9,729
Capital charges .....	9,328
Depreciation .....	2,191

Deficit .....	\$ 1,790
In April, 1917, the gross earnings were .....	\$42,015
Passengers carried .....	900,551
Average receipts .....	4.6c

**British Columbia Electric Ry. and subsidiary companies.**

	3 months to Mar. 1918	3 months to Mar. 1917
Gross	\$510,892	\$456,626
Expenses	381,234	356,178
Net	129,659	100,448
	1,032,557	872,313

	May, 1918	May, 1917
Gross	\$38,446.29	\$32,247.56
Expenses	31,483.10	27,555.82
Net	6,963.19	4,391.74

**Regina Municipal Ry. results for May:**

Earnings .....	\$19,182.65	\$15,536.75
Passengers carried .....	401,981	371,652
Average revenue per passenger .....	4.77c	4.18c

**Toronto Civic Ry.**—Receipts for May, \$27,064.10; passengers carried, 1,606,741, against \$22,412.68 receipts, and 1,325,856 passengers in May, 1917.

**Toronto Ry.**—Earnings for May, \$548,777.80; city percentage, \$109,755.57, against \$510,869.55 total earnings, and \$102,066.98 city percentage for May, 1917. The regular quarterly dividend of 1% is payable July 2.

**Toronto Ry., Toronto & York Radial Ry. and allied companies.**

	3 months to Mar. 1918	3 months to Mar. 1917
Gross	\$1,113,472	\$991,192
Expenses	581,747	515,586
Net	531,725	475,606
	1,442,834	1,387,623

**Winnipeg Electric Ry. results for March:**

Gross earnings .....	\$307,289	\$293,094
Expenses .....	240,628	209,453
Net earnings .....	66,661	83,641
Three months ended Mar. 31—		
Gross earnings .....	\$940,830	\$893,756
Expenses .....	723,974	643,083
Net earnings .....	216,856	250,673

**The Guelph Radial Ry.** is managed by a board of directors nominated by the Guelph, Ont., City Council. Under an act passed at the Ontario Legislature's last session, the present constitution of the board will be discontinued, and the members of the city council to be elected for 1919, and thereafter, will be the directors of the G.R. Ry. under the acts relating to the company.

**The Ottawa & Montreal Transmission Co.** has been granted an extension of time for three years within which it may construct its power transmission lines, authorized to be built by the statutes of 1910, chap. 142, and confirmed by the statutes of 1913, chap. 169,

**The Vancouver Transportation Club** June 4 discussed the transportation of explosives, the opening speech being by D. W. McNab, of the Bureau of Explosives.



## Increases in Electric Railway's Employes' Wages.

The Brantford Municipal Ry. conductors and motormen asked early in May for increases ranging from 9c to 10c an hour, according to length of service. The commission granted advances which are shown below, together with the rates paid formerly per hour:—

	New rate.	Old rate.
First year .....	29c	23c
Second year .....	31c	25c
Third year .....	32c	26c

**British Columbia Electric Ry.**—The Minister of Railways has appointed a board of conciliation and investigation, to deal with the dispute between this company and its employes; F. Buscome, Vancouver, representing the company, and T. J. Coughlin, Vancouver, representing the men.

**Calgary Municipal Ry.**—In the particulars of increases in wages on this line given in Canadian Railway and Marine World for June, pg. 259, mention was made of conductors and motormen and also of motor conductors. As we could not understand the reference to conductors and motormen, in view of the fact that the entire system is operated with one-man cars, we communicated with Superintendent T. H. McCauley, who advises us that conductors and motormen are only used on sight seeing, trailer and freight cars, and street sprinklers, and that all other cars are each operated by one man. The railway does a large freight business to Sarcee camp, and, in addition, runs a combination freight and passenger car to Ogden, Sarcee, and Bowness. This car is operated by one man, and operated on regular schedule. The two-man freight cars carry wood, lumber, and supplies, and require two men, as also do sprinklers.

The Cape Breton Electric Co. is reported to have put in force a new wage schedule on June 1, which gave increases to conductors and motormen varying from 2 to 3½c an hour. The maximum wage for the senior men is now 36c an hour.

**Dominion Power & Transmission Co.'s Wages.**—Canadian Railway and Marine World for June gave particulars of conductors' and motormen's wages on the Hamilton St. Ry., as agreed upon, following a board of conciliation's recommendations. Particulars were also given of new rates put in force voluntarily on the company's interurban lines, viz., Brantford & Hamilton, Hamilton & Dundas, Hamilton, Grimsby & Beamsville, and Hamilton Radial. We are officially advised that there was a slight error in the figures furnished us by the company for the interurban lines, which stated the wages for the second year as 34c an hour, for the 3rd and 4th years as 34c, and for the 5th year and thereafter as 37c. The correct figures are given below, showing both the new and old rates.

	New rate.	Old rate.
First 6 months .....	25c	22c
Second 6 months .....	30c	24c
Second year .....	32c	25c
Third, fourth and fifth years .....	34c	26c
Sixth year and thereafter .....	37c	30c

**Guelph Radial Ry.**—Conductors' and motormen's wages on this municipally owned railway were advanced in April 1c an hour, but as it was found impossible to get new men at the rates offered, a further advance was made in May, for the duration of the war only. The following table gives: 1, the old rate prior to April; 2, the April rate; 3 the present rate:

	Old rate.	1st advance.	2nd advance.
1st year .....	24½c	25½c	27c
2nd year .....	25½c	26½c	28c
3rd year .....	26½c	27½c	28v

The company supplies one uniform suit a year free and uniform caps as required.

**Hull Electric Co.**—Two members of the board of conciliation appointed by the Minister of Labor to investigate the dispute between this company and its employes as to wages, viz., Judge Gunn, chairman, and Fred Bancroft, of Toronto, representing the men, made a majority report on May 25 recommending increases. The report was not concurred in by the company's representative, G. D. Kelly, barrister, Ottawa, but the management decided subsequently to accept the majority report. Following is a comparison of the new and old rates, as far as information in regard to the latter is available:—

	New rate.	Old rate.
Aylmer station agent, per mo. \$100		
Conductors and motormen—		
1st six months, per hr. ....	29c	22c
2nd six months, per hr. ....	31c	22c
Second year .....	34c	23c
Third year .....	36c	24c
Fourth year .....	36c	25c
Snow plow and sweeper work, per hr. ....	39c	
Freight crew, per month—		
Conductor and motorman .....	\$105	
Brakeman .....	80	
Trolleyman .....	75	
Power plant employees, per mo.—		
Flagmen or switchmen, per day 2.25		
Runners or operators ....	80.00	62.50
Oilers .....	65.00	62.50
Substation employees ....	80.00	
Trackmen, per hr. ....	31c	20c
Laborers, per hr. ....	30c	
Linemen, per hr. ....	36c	24c
Trolley linemen .....	33c	

Car barn and shop men, among whom are truck repairers, carpenters, cleaners, blacksmiths, helpers, machinists, troublemen, air inspectors, apprentices, and metermen, got a general increase of 10c an hour.

The company employs about 140 men, who demanded increases averaging about 60%, which the company refused to make, and then arbitration was suggested. The new rates apply from May 1.

**London St. Ry.**—The conciliation board appointed to consider the dispute between this company and its employes, consisting of Judge Livingstone, chairman; F. H. McGuigan, Toronto, representing the company, and C. C. Ferguson, London, representing the men, waited upon the London City Council on May 29, and laid the then position before that body. The chairman of the board stated that the company showed that its financial condition did not warrant granting higher wages, and that by the agreement with the city precluded the company from charging increased fares. After hearing from representatives of the company and the men, the council decided not to interfere between the company and its employes. On May 31 the conciliation board made a unanimous report, following which increased rates of pay were put in force from May 1. Following is a comparison of the old and new rates per hour for conductors and motormen:—

	New rate.	Old rate.
On spare list .....		23c
Rest of first year .....		25c
First year .....	30	
Second year .....	33c	26c
Third year .....	35c	27c
Fourth year and after .....	35c	28c

Regular conductors and motormen to be paid 10c an hour in addition to regular rates for working after scheduled working hours.

Barnmen's and linemen's wages were increased 3½c an hour, and trackmen's wages 2c.

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**Montreal Tramways Co.**—After somewhat protracted negotiations, the company's offer of wage increases was accepted by the men on June 11 and was made to date from June 1. Following is a comparison of the old and new rates per hour:—

	New rate.	Old rate.
First and second year .....	31c	25c
Third year .....	33c	26c
Fourth year .....	35c	26c
Fifth year .....	35c	29c
Sixth year and after .....	37c	29c

Overtime is to be paid as time and a half, and motormen teaching learners, also men employed on snow sweepers, ploughs, milk cars and interswitching, get 2½c an hour extra. Increases have also been granted the other employes; but up to the time of writing (June 22) we have no official information in regard to them. J. E. Hutcheson, General Manager, is reported to have stated that the increases will add \$600,000 a year to the company's operating expenses.

**Port Arthur Civic Ry.**—The Port Arthur, Ont., Public Utility Commission has fixed the wages for employes at barns and maintenance of way department as follows:—Master Mechanic, \$140 a month; machinists, 44c an hour; painters, 44c an hour; 1st class pitmen, 42½c an hour; general handyman, 37½c an hour; other pitmen and laborers, 32½c an hour; apprentices, 20 to 25c an hour. Maintenance of way department—Traffic Manager, \$100 a month; Assistant Manager, \$105 a month; Roadmaster, \$110 a month; boundaryman, \$100 a month; laborers, 32½c an hour.

**Toronto Ry.**—A board of conciliation consisting of Judge Ruddy, of Whitby, Ont., chairman; H. H. Dewart, K.C., representing the company, and Fred Bancroft, representing the men, has been appointed to consider Toronto Ry. machinists' demand that they be given the rates of pay and conditions as other machinists in the city have. They ask for a 9-hour day instead of 10 as at present; that tool-makers be given 60c an hour for day work, and 65c for night work; machinists 55c for day work and 60c for night work, and specialists 45 and 50c an hour for day and night work respectively.

**Winnipeg Electric Ry.** has entered into a new agreement with its conductors and motormen, for a year, from May 1, 1918, to May 1, 1919. Following are the new and old rates per hour:—

	New rates.	Old rates.
1st 6 months .....	30c	28c
2nd 6 months .....	32c	30c
2nd year .....	33c	31c
3rd year .....	35c	33c
4th year and after .....	39c	36c

Overtime work on public holidays, exhibition and other similarly busy days to be paid at rate of time and a half. Sunday work to be paid at rate of 10 hours for 8½ hours work. Conductors and motormen training students to get 5c an hour extra while so engaged. Extra conductors and motormen reporting regularly every day during week, and ready and able to work, to be paid a minimum wage of \$12 a week.

**Increased Street Car Fares in England.** Members of the London County Council have been asked not only to raise the fares on the municipal street cars, but to abolish transfers on certain routes. The reasons given are the increased cost of coal, war allowances, and the recent increase in wages allowed when tramway workers were brought into line with railway workers.



## Mainly About Electric Railway People.

F. H. Williams has been appointed Publicity Agent, Winnipeg Electric Ry., succeeding H. C. Howard.

Mrs. James Gunn, wife of the Superintendent, Toronto Ry., died in Toronto, June 23, after a long illness.

D. N. Gill, heretofore Purchasing Agent, Ottawa Electric Ry., is training at Niagara camp, Ont., preparatory to going overseas to join the Canadian Railway Troops.

J. M. Ahearn, Assistant Superintendent, Ottawa Electric Ry., Ottawa, Ont., has also been appointed Purchasing Agent, vice D. N. Gill, who has entered military service.

Frederick E. Hayes has been appointed General Superintendent, Sandwich, Windsor & Amherstburg Ry. and Windsor & Tecumseh Electric Ry., Windsor, Ont.

M. W. Kirkwood, General Manager, and C. J. Whitney, G.F. & P.A., Grand River Ry., have been authorized by the Board of Railway Commissioners to prepare and issue freight and passenger tariffs for the company.

J. J. Ahearn has been appointed Inspector of Rolling Stock, Ottawa Electric Ry., succeeding R. A. Baldwin, promoted.

R. A. Baldwin, heretofore Inspector of Rolling Stock, Ottawa Electric Ry., has been appointed Master Mechanic.

C. A. Lee, of the British Columbia Electric Ry. engineering staff, has enlisted with the U.S. Navy Civil Engineering Corps. While in the company's service, he was engaged on work on the Coquitlam dam, and the hydro electric installation at Jordan River, near Victoria.

E. L. Tait, heretofore Assistant Engineer, Maintenance of Way, British Columbia Electric Ry., has been appointed Engineer, Maintenance of Way, succeeding A. C. Eddy, who has been granted extended leave of absence for military duty, having joined the U.S. Army, and been appointed a captain in the 55th Engineers.

A. W. Ormsby, Superintendent, Light and Power Department, City of Edmonton, Alta., has been appointed acting Utilities Commissioner by the city council in succession to Commissioner Harrison. Mr. Ormsby will retain his position with the light and power department and will perform his new duties for the present without salary.

Angus McLeod Campbell, who has been appointed Chief Accountant, Grand Valley Ry. and Lake Erie & Northern Ry., Galt, Ont., was born at Embro, Ont., July 4, 1874, and entered C.P.R. service, Nov. 3, 1890, since when he has been, to May, 1893, junior freight clerk, Woodstock, Ont.; May, 1893, to May, 1898, abstract clerk, London, Ont.; May, 1898, to June, 1902, chief clerk at Galt, Windsor and London, consecutively; June 1, 1902, to May 15, 1918, Travelling Auditor, Montreal.

Wilford Phillips, formerly General Manager, Winnipeg Electric Ry., died June 12, at Rochester, Minn., where he went for treatment after a comparatively lengthy illness. He was born in Prince Edward County, Ont., Oct. 8, 1858, and commenced electric railway work on the Metropolitan Ry., North Toronto, Ont., now the Toronto & York Radial Ry.'s Metropolitan Division, in Mar., 1890, in which service he remained until July, 1892, since when he was to Mar., 1893, Engineer and Superintendent, North Toronto Water Works and Electric Light; Mar., 1893, to 1896, Mechanical and Elec-

trical Engineer, Niagara Falls Park & River Ry.; 1896 to June, 1900, Manager, same railway; Aug., 1900, to Oct. 1, 1917, General Manager, Winnipeg Electric Ry. At the last mentioned date he retired on account of ill health, and was elected a director. In speaking of his retirement, Sir Augustus Nanton, Vice President, said: "Everybody connected with the company will regret Mr. Phillips' retirement. He remains in office at the board's request, and will stay with the company in an advisory capacity. He came to Winnipeg about 17 years ago, from the Niagara Falls Park & River Ry., which he managed with success, and to him is very largely due the past great successes of the Winnipeg Electric Ry. in all its branches. He extended the railway lines, completed its power plant, built substa-



P236  
Wilford Phillips,  
Formerly General Manager, Winnipeg Electric  
Railway.

tions, built a suburban line, extended its gas mains, in fact, the company's properties when he arrived were of a minor character, and have all been developed under his management." On leaving Winnipeg for a trip to the south, he was presented with a gold watch and chain by the company's employees, and he spent considerable time in California subsequently. He was buried at Toronto, June 15.

Sandwich, Windsor & Amherstburg Ry. employees struck June 19, following the refusal of the General Manager to order the reinstatement of conductor Saunderson, who was dismissed by Superintendent Hayes. It appears that the Superintendent being without his pass book, was ordered by the conductor to pay his fare or get off the car; the next day the conductor received his dismissal. The employees went to S. S. Anderson, General Manager, who backed up the Superintendent in his determination not to reinstate the conductor without an apology. The men demanded an immediate reinstatement without an apology. The matter was subsequently arranged and the men returned to work.

## Electric Railway Notes.

The Nipissing Central Ry. is reported to be in the market for a snow plough.

The Regina Municipal Ry. has contracted to pay for employees' uniforms for this year \$19.85 each, against \$17.75 for 1917.

The Fort William Electric Ry. Commission favors a general increase of passenger fares, and is negotiating with the Port Arthur Civic Ry. commissioners about it.

The Toronto Railway Men's Union has unanimously re-elected City Controller W. D. Robbins as Financial Secretary, and Alderman Jos. Gibbons as business agent and treasurer.

The Winnipeg Electric Ry. has ordered 10 double truck car bodies, 33 ft. long, semi steel construction with folding doors and steps, for single end operation, from Ottawa Car Manufacturing Co.

The city of Hamilton, Ont., is said to have protested to the Board of Railway Commissioners against granting the Hamilton Radial Electric Ry.'s application for increased freight and passenger fares.

The Nipissing Central Ry., which is operated by the Timiskaming & Northern Ontario Ry. Commission, for the Province of Ontario, has ordered two interurban car bodies from Preston Car & Coach Co.

The Calgary, Alta., City Council on June 18, by a vote of 6 to 4, decided to put a tax of 4% upon the gross earnings of the electric railway and the electric light plant, instead of 5% as recommended by the finance committee.

The hearing of the Toronto Ry.'s appeal against the fine of \$24,000 for alleged non-compliance with an order of the Ontario Railway and Municipal Board, as to the building of additional cars, is not expected to come on until the autumn.

The Calgary, Alta., City Council having proposed to assess the Calgary Municipal Ry. for municipal taxes, the commissioners are considering the question of increasing fares. Superintendent McCauley has suggested that the sale of special workmen's tickets be stopped.

The Grand River Ry.'s operations are liable to serious restriction, as a result of the reduction in the allotment of power by the Hydro Electric Power Commission of Ontario. A considerable quantity of traffic moved over this line is required in connection with munitions manufacture.

The Port Arthur, Ont., City Council is considering the matter of advertising in the civic railway cars. The present contract is expiring, and the contractor is asking for a renewal for 10 years at \$600 a year. The same contractor has the advertising privileges on the Fort William Electric Ry. at \$600 a year.

The Ontario Railway and Municipal Board has approved the sample prepayment car which the Toronto Ry. proposes to place in service on its lines, and which was described in our last issue. It is probable that sufficient cars will be remodelled on this plan, for service on one selected route, to test the feeling of the public on the matter.

The Quebec Ry., Light & Power Co. informed the Quebec City Council's public works committee, June 12, that if there was any possibility of the company being able to undertake the work of snow removal in the city, as well as to successfully operate the street cars, it would not hesitate to tender. The chief difficulty in the way is lack of equipment, which cannot very well be procured at present.



# Marine Department

## General Shipbuilding Notes Throughout Canada.

**B. Belliveau & Co., Belliveau Cove, N. S.**—Work is reported in progress on the construction of a three masted schooner of about 250 tons, similar to the company's recently launched schooner Emma Belliveau, now on her maiden voyage to the West Indies.

**Canadian Car & Foundry Co., Fort William, Ont.**—Work is proceeding on the 12 mine sweepers under construction for the French Government. The shipbuilding sheds are practically completed, and electrical cranes have been installed.

**Cape Breton Shipbuilding Co., Johnstown, N.S.**—This company, which was incorporated recently with capital of \$45,000, to build wooden ships, is building a schooner with carrying capacity of 350 tons. N. A. MacMillan, K.C., North Sydney, is Secretary.

**Ernst Shipbuilding Co., Mahone Bay, N.S.**, launched the schooner William Duff June 6, for the William Duff Shipping Co., Lunenburg, N.S., for the West Indies trade. Her dimensions are, length 127 ft., breadth 32½ ft., depth of hold 12½ ft.; tonnage, 450 gross, 400 register.

**Fauquier & Porter, Hantsport, N.S.**—Two schooners are under construction at this yard, where, it is said, that four-masted schooners of approximately 1,000 tons will be built. J. B. North & Sons shipbuilding yard was acquired towards the end of 1917, and some adjoining lands were taken in and woodworking mills with compressed air plant erected. The partners are, G. E. Fauquier and J. P. Porter, railway and general contractors. G. E. Fauquier, who lives in Ottawa, had contracts on the National Transcontinental Ry. and is a member of the firm of Foley Bros., Welch, Stewart & Fauquier, who are carrying out work on the Canadian Government Railways ocean terminals at Halifax, N.S. J. P. Porter has had some railway contracts in the U.S., including one on the Spokane, Portland & Seattle Ry., in partnership with P. Welch. He is Manager of Construction, under Foley Bros., Welch, Stewart & Fauquier, on the Halifax ocean terminals.

**Grand Trunk Pacific Ry. Dry Dock at Prince Rupert, B.C.**—A press report from Vancouver, B.C., credits W. P. Hinton, Vice President and General Manager, with the statement that arrangements are being made for the leasing of the dry dock and shipbuilding plant at Prince Rupert, to a U.S. company, and that work will be commenced shortly on the building of 8 steel steamships of 8,500 tons each.

**Grant & Horne, St. John, N.B.**—A wooden steamship of 2,800 tons capacity, which has been under construction at this yard for some time, is expected to be ready for launching very shortly.

**O. Ham, Mahone Bay, N.S.**—The schooner The Dazzle was launched here recently, and was expected to be ready for her maiden voyage to the West Indies during June. She is owned by Jos. Conrad, Upper La Have. Her dimensions are, length 122 ft., breadth 26 ft., depth of hold 11½ ft. The keel of another schooner for the same owner has been laid.

**International Shipbuilding Co., Newcastle, N.B.**, has practically completed a

4-masted schooner, and expects to proceed at once with two more of a similar type. These are to be arranged for the accommodation of auxiliary power, which can be added at any time if desired.

**W. C. McKay & Sons, Shelburne, N.S.** The schooner Selma Creaser, which was launched at this yard, fully rigged, left Halifax recently for the banks, on her first fishing trip. Her dimensions are: length 124 ft., beam 26.6 ft., depth of hold 11 ft.; tonnage, 99 register.

**Marine Construction Co., St. John, N.B.**, launched the four masted schooner Dornfontein June 11. The keel was laid at the end of Oct., 1917. Her dimensions are, length 185 ft., beam 40 ft., depth moulder 14¼ ft.; 1,400 tons deadweight capacity. This is stated to be the first sailing vessel to be launched at St. John since 1890, and the launch was broadside one, the customary way on all Canadian inland waters, but apparently new to St. John, an old-timer saying that it was the first he had heard of there. The vessel is being loaded for Durban, South Africa, by J. T. Knight & Co. She was designed by J. M. Watts, Philadelphia, Pa. D. H. Saker is President of the company, and J. M. Densmore is Superintendent of the yard.

**B. W. Melanson, Gilberts Cove, N.S.** The small wooden steamship M. Sigogne, owned by the builder, underwent her trial trips recently and successfully maintained a speed of nearly 10 knots an hour. The machinery was supplied by the Union Foundry & Machine Works, West St. John, N.B., and the boiler by I. Matheson & Co., New Glasgow, N.S. The vessel has about 400 tons deadweight capacity. The builder has now a 250 ton schooner in the framing.

**New Liverpool, Quebec.**—W. H. Hutchinson, of Baldry, Yerburch & Hutchinson, contractors, St. Catharines, Ont., and President of National Shipbuilding Co., Goderich, Ont., and H. Dussault, President, General Public Enterprises Co., Levis, Que., are among the promoters of a company to establish a shipbuilding plant at Benson's Cove, New Liverpool, in St. Romuald Parish, on the south side of the St. Lawrence River, near the Quebec Bridge.

**The National Shipbuilding Co., Ltd., Goderich, Ont.**, incorporated under the Dominion Companies Act, has been licensed to carry on business in Ontario, the amount of capital used within the province being limited to \$42,000. W. B. Wadsworth, Toronto, has been appointed attorney. At present the company appears to be confining itself to building marine engines.

**Pacific Construction Co., Port Coquitlam, B.C.**—Canadian Railway and Marine World was officially advised from Ottawa recently that the company had applied to the Marine Department for licenses to build five steamships for French interests, but that no decision had been reached.

**Quinlan & Robertson, Ltd., Quebec, Que.**—It is announced that this company, which received an order for four wooden steamship hulls from the Imperial Munitions Board, has prospects of further orders for wooden vessels from private sources, but nothing definite has as yet

been arranged. The discontinuance of the policy of ordering any further wooden vessels, by the British Government, leaves companies equipped for wooden shipbuilding at liberty to take contracts for such from other buyers.

**Reinhardt & Conrad, Lunenburg, N.S.** The ship under construction at this yard for Capt. Chas. Conrad was expected to be ready for launching by the end of June.

**St. John Drydock & Shipbuilding Co.** Referring to the particulars published in Canadian Railway and Marine World for June, on pg. 264, an Ottawa press dispatch of June 6 stated that an amended order in council had been passed respecting the continuation of the harbor works at Courtenay Bay, St. John, N.B., by this company, which is taking over the Norton Griffiths Co.'s contract, and that provision is made only for the expenditures necessary to meet the harbor requirements of the dry dock and shipbuilding plant to be established by the company. We are officially advised that not more than \$500,000 will be expended by the Dominion Government during this year, and that the rate of prosecution of the work will depend largely upon financial conditions. The government will grant the usual subsidy for a drydock of the first class, which the company has arranged to build as speedily as possible.

We are advised from New Brunswick that the company has asked that province and the City of St. John, to give subsidies of \$250,000 each to aid in the establishment of a shipbuilding plant.

In giving in our last issue the names of the persons particularly interested in the St. John Drydock & Shipbuilding Co., we mentioned Senator H. W. Richardson and Jas. Playfair as being President and Vice President respectively of the Great Lakes Transportation Co. Mr. Playfair is President and General Manager of that company and Mr. Richardson is Vice President. It was also stated that the harbor work would "probably be carried out by the Great Lakes Dredging Co., in which Jas. Playfair and some of the others mentioned are interested." Mr. Playfair is interested in the Canadian Dredging Co., not the Great Lakes Dredging Co.

**St. John Shipbuilding Co., St. John, N. B.**—T. Nagle, promoter of this project, is reported to have stated on his return from Ottawa, recently, that he was going right ahead with plans for the establishment of a steel shipbuilding plant in or near St. John, that the company had received an order from the government for two steel steamships of 8,000 tons, and that he was endeavoring to have the order increased to four. He added that it was expected that a shipyard would be laid out in Courtenay Bay at an early date, and that the project of the St. John Dry Dock & Shipbuilding Co. in the same district would not affect the St. John Shipbuilding Co.'s plans. Up to the time of writing, Canadian Railway and Marine World has received no confirmation that the government has placed any order with this company for two steel steamships. When Sir Robert Borden made his announcement regarding the government's policy regarding steamship build-



ing, in the Commons recently he said, "The intention is to confine at present the awarding of contracts for the construction of steel steamships to yards already established and actually engaged in constructing steel ships." It is therefore not likely that the company has an order from the government for building steel steamships, though some negotiations may have taken place regarding the possibility of orders after the plant is established.

Victoria, B.C.—Representations were made to the British Columbia Premier,

June 11, regarding the possibility of leasing a site for a shipbuilding yard on the Songhees Reserve. After hearing the proposals, the Premier is reported to have said that a satisfaction of bona fides, and an agreement as to ordinary business conditions were the only obstacles in the way of further expansion in the district.

Windsor, N.S.—It is planned to lay the keel of a reinforced concrete vessel here, July 1, making it an item in the Dominion Day celebration programme, which is being carried out for the benefit of the Navy League.

## Steel Shipbuilding Plant for Halifax, N.S.

In consequence of the increased shipbuilding activity in Canada, opportunities are continually being sought for points of vantage for the establishment of shipbuilding plants. When the demand was urgent for wooden steamships, it was desirable that such plants should be located as conveniently as possible to the source of supply of the requisite building material, and in most cases this was done. So far as immediate war purposes are concerned, it is considered that wooden steamships are not equal to steel vessels, so following on the same line, it is desirable to erect steel steamship building plants at points where the supply of building material is easily accessible.

Concurrent with the rehabilitation of the port of Halifax after the disastrous explosion of last December, it is natural to assume that considerable attention will be paid in carrying out the schemes to any proposal involving the creation of a shipbuilding plant, and the extension of drydock and other similar facilities there. On this reasoning, and following on the declaration of the Dominion Government's policy as to shipbuilding and as to its method of dealing with the ship plate question, it has been thought desirable to establish a large shipbuilding plant at Halifax, and for this purpose, Halifax Shipyards, Limited, has been incorporated under the Dominion Companies Act, with \$6,000,000 authorized capital stock, to build, own and deal in steam and other vessels of every description, steamship and railway terminals, and all other facilities incidental to the operation of such business. We are advised officially that the plant will consist of complete berths for the construction of 10,000-ton steel steamships, with dry docks, repair plants and workshops in connection therewith. It is said that the company is assured of orders for several vessels, immediately the plant is ready to assume the work of construction, and it is semi-officially stated that a number of the vessels which the Dominion Government intends to build, as outlined in the Commons by the Minister of Marine recently, and dealt with in Canadian Railway and Marine World for May, will be built at this plant. The officers of the company had not been decided on at the time of writing, but it is known that Jas. Carruthers and J. W. Norcross, President and Vice President and Managing Director respectively of Canada Steamship Lines, and R. M. Wolvin, President Montreal Transportation Co., are the chief movers in the project.

It is reported that the site occupied formerly by the Acadia Sugar Refinery, alongside the existing dry dock, has been acquired, and that three shipbuilding berths are to be built at once. It is also stated that an immediate outlay of from \$3,000,000 to \$4,000,000 is to be made on pushing on the construction of the plant and its equipment, so that vessels may be launched within 15 months.

Messrs. Carruthers and Norcross visited Halifax June 19 and 20, accompanied by M. J. Haney, of Toronto, Vice President Canada Steamship Lines, and H. W. Brown, of the Canada West Coast Navigation Co., Vancouver, and looked over the existing dock yard and the proposed site of the new plant. Mr. Norcross is reported to have said that work on the new plant would be commenced before the end of June and that the keels of three 10,000 steel cargo steamships would be laid within three months. The Halifax City Council has granted the company exemption from taxation.

A Halifax press dispatch credits Mr. Norcross with saying: "When our plant is completed, we will have established at Halifax one of the finest shipyards on the American continent. We have chosen the best site available, and which is admirably suited for the purpose. Halifax harbor possesses natural advantages which make the general location an ideal one, and adequate arrangements for procuring the steel plates necessary to ship construction have been made. Our first step, of course, will be to start building the three 10,000-ton steamships for which we have a contract with the Dominion Government, but our building berths will not be limited to that capacity. They will be of sufficient dimensions to admit of the construction thereon of ships of the same size and type as the Allan Line passenger steamers Alsatian and Calgarian. The general arrangements will also permit the construction of other berths, so that the company will be able to undertake the building of more than three ships at one time. We want to use all the local labor that is available in Halifax. We will employ some 3,500 men at our plant. We want good men, and we believe Halifax has them. We can provide employment for the shipwrights at work here, including those engaged in steamer repair work at the dry dock, and for the men at work on the dock. Then, too, there are in this province a large number of men proficient in wooden shipbuilding. As we hope to educate men having this knowledge to the somewhat different work of steel ship construction, there will be further opportunity for Nova Scotians with us."

The same dispatch says that the site for the company's plant extends from the Halifax graving dock, which has been purchased by the company, to pier 6, a water frontage of 2,500 ft. After the debris occasioned by the explosion has been cleared away, the work of constructing the building berths will be commenced at once. Arrangements have been made for equipment, which will be shipped immediately, and will be installed as soon as the ground has been cleared. All of the machinery and other apparatus will be new.

Asked as whether the graving dock would be enlarged, Mr. Norcross is re-

ported to have said that they intended first of all to devote all their energies to ship construction. The drydock with its present capacity will serve immediate needs, and the first call is for ships, so that they will proceed at once with the building of those for which they have contracted with the government.

The dispatch adds that the Halifax Shipyards, Ltd., officers include the following: Chairman of Board of Directors, Jas. Carruthers; President, J. W. Norcross; Vice President and Managing Director, R. W. Wolvin; Vice President, M. J. Haney.

S. M. Brookfield, who was connected with the Halifax Graving Dock Co., which owned the dry dock the new company has acquired, is said to have been retained in an advisory capacity.

Tenders have been invited to July 3, for the supply of material and the performance of the necessary work in connection with the construction of a shipyard at Halifax, by Halifax Shipyards, Ltd. The immediate construction to be undertaken covers the piling and grading of three shipways, each 530 ft. long; the excavating, filling and grading of the shipyard for buildings, tracks and storage; excavation for Canadian Government Railways relocation and grading, track laying and ballasting same, equal to about a mile of double track railway; construction of 580 ft. of concrete sea wall and back filling same; construction of reinforced concrete retaining wall along the right of way of the railway relocation, and the extensions to sewers, water mains, etc. The work will require approximately 270,000 cu. yds. of earth and rock, dry excavation, and 20,000 cu. yds. of concrete. The tenders must cover the entire work, and plans may be seen at the office of the engineers, Picking & Roland, Tramways Bldg., Halifax, N.S.

**War Risk Concessions to Seamen.**—The British Board of Trade have informed the shipping associations that it is extending concessions to crews of ships lost by enemy action. By recent arrangement the master and men became entitled to a full month's pay after the time of the loss of the vessel, and this arrangement is now to apply to men whose vessels have been damaged through war risks, but not sunk, provided that the damage necessitates the discharge of the crew. It has also been decided to provide for the payment of one month's extra wages to any master, officer or seaman who has been captured by the enemy and interned after his ship has been sunk or damaged through war risks; the payment to be made on his ultimate release and return to England.

**The International Mercantile Marine Co.** is stated to have concluded negotiations with a British syndicate for the transfer for all of the company's vessels now on the British register, for approximately \$125,000,000, considered to be considerably below the present market price of the vessels, which aggregate 960,000 tons. Included in those composing the syndicate, are mentioned, Lord Pirrie and Sir Owen Phillips, both of whom have been active during the war in consolidating several of the larger steamship companies under a central management.

**St. Marys River Traffic.**—It has been proposed by the Lake Carriers' Association, that double courses be provided for upbound and downbound vessels in St. Marys River, between Sweets Point and Watsons Reef. The proposal has the approval of the Dominion Marine Association, but it will not be put into operation until the Dominion Government approves.



## Steamship Building in Canada for British Government.

B. C. Marine Railway, Vancouver, B.C. The installation of the machinery in the hull of the War Puget, built by Wm. Lyall Shipbuilding Co., Vancouver, and launched Feb. 16, is being rushed at this company's yards.

Cameron-Genoa Mills Shipbuilders Ltd., Victoria, B.C.—The wooden hull War Haida, which was launched Apr. 25, left the builders' hands, June 5, and was hauled to the Ogden Point assembly plant, where she took aboard her machinery, and was later taken to the Victoria Machinery Depot's plant, where the machinery will be installed.

Canadian Vickers, Ltd., Montreal.—The steel cargo steamship War Earl was launched June 8. She has been built under order from the Imperial Munitions Board on behalf of the British Government, under the direct supervision of a Lloyd's representative. Immediately after the launch, the keel of a sister vessel was laid in the vacant berth, and the vessel is expected to be launched early in

engines were converted from compound to surface condensing, a complete wireless telegraph equipment has been installed, and the crew's accommodation has been thoroughly overhauled. The average speed of the vessel since reconstruction is 12 knots an hour, but during her trials she attained  $15\frac{1}{2}$  with the tide and  $14\frac{1}{2}$  against it. The work was carried out under the supervision of Major D. H. Oliver, R.E., on behalf of the British Government, and the vessel has been manned by a crew attached to the Royal Engineers.

New Westminster Construction & Engineering Co., New Westminster, B.C.—The launch of the second wooden hull, under order from the Imperial Munitions Board, was arranged for June 8, the name chosen for the vessel being War Edenshaw. Unfortunately, owing to a series of accidents, the vessel stuck on the ways, and the launch was postponed.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—Some details were given in

is being equipped at the Louise docks, and is named War Quebec.

Quinlan & Robertson Ltd., Quebec, Que. The second of the 4 wooden hulls under order from the Imperial Munitions Board for the British Government was launched June 14, and named War Seneca. The installation of the machinery in the War Mohawk, launched by the company May 11, is proceeding satisfactorily, notwithstanding the trouble experienced obtaining the help of sufficient experienced machinists.

Yarrows, Ltd., Victoria, B.C.—The installation of the machinery in the hull of the s.s. War Masset, built by the Foundation Co., Victoria, is proceeding as rapidly as possible, so that she may be ready for sea at an early date.

Launchings of Steamships.—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to June 15, giving in each case the date of the launching, the name



Steel cargo steamship War Earl, for British Government, immediately after launching by Canadian Vickers, Ltd., at Montreal, June 8, 1918. The floating drydock Connaught is shown at the left of the illustration.

October. Three similar vessels are under construction at the plant, all of which are expected to be launched during July. The illustration given on this page shows the War Earl being towed alongside after the launch. This vessel, which, with the others of the same order, are being built completely, hull, engines and boilers, by the company, all according to Lloyd's requirements, is equipped with vertical, direct acting, triple expansion, surface condensing engine, with cylinders 27, 44 and 73 in. diam. by 48 in. stroke, for a speed of 11 knots an hour, and supplied with steam by three Scotch marine boilers, each  $14\frac{1}{4}$  by  $11\frac{3}{4}$  ft., under forced draft. Her dimensions are, length between perpendiculars 380 ft., beam moulded 49 ft., depth moulded 30 ft. She is of the single screw, single deck type of cargo vessel, with deadweight carrying capacity of 7,000 tons.

The s.s. Porsanger, a vessel of similar type to the foregoing, and which was launched Nov. 29, has been completed and handed over to Furness, Withy & Co., on the British Government's behalf.

Davie Shipbuilding & Repairing Co., Lauzon, Que.—The steam tug Gray, which was acquired by the British Government recently, has been practically rebuilt at this yard. Her dimensions are, length 135 ft., breadth 28 ft., draft 15 ft. The

Canadian Railway and Marine World for June or the company's programme and work on vessels under construction for the British Government, and illustrations were given of the launching of the s.s. War Isis, with the s.s. War Osiris and a trawler in the background. The War Osiris was launched May 25, and on June 5, two trawlers, TR-31 and TR-32, were launched. These trawlers are similar to the Castle class N.D. trawler, and are for the Dominion Naval Service Department. They have 2 masts, full wireless telegraph equipment, and are schooner rigged. The propelling machinery consists of triple expansion engine, with cylinders  $12\frac{3}{4}$ ,  $21\frac{1}{2}$  and 35 in. diam. by 24 in. stroke, supplied with steam by a single ended Scotch boiler  $13\frac{1}{2}$  by  $10\frac{1}{2}$  ft., and have approximately 500 i.h.p. The principal dimensions are, length over all 135 ft., length between perpendiculars 125 ft., beam 23.4 ft., moulded depth 15.1 ft.; tonnage, 295 gross, 117 net.

The s.s. War Osiris is of the same type as the War Isis, full details of which have already been given.

Quebec Shipbuilding & Repairing Co., Quebec, Que.—The rudder and tail shafts for the first of the two wooden steamships under construction for the Imperial Munitions Board, were received June 9, and the propeller shortly after. The hull

of the steamship, the name of the builder and the deadweight tonnage:—

Steel Steamships.		Tonnage.
May 18, 1917—	War Dog, Wallace Shipyards North Vancouver, B.C. ....	4,500
July 9, 1917—	War Wasp, Nova Scotia Steel & Coal Co., New Glasgow, N. S. ....	1,800
Aug. 19, 1917—	War Fish, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	4,300
Nov. 3, 1918—	War Dance, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
Mar. 16, 1918—	War Camp, J. Coughlan & Sons, Vancouver, B.C. ....	8,800
Mar. 23, 1918—	War Power, Wallace Shipyards, North Vancouver, B.C. ....	4,600
Apr. 3, 1918—	War Isis, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
May 8, 1918—	War Wizard, Collingwood Shipbuilding Co., Collingwood, Ont. ....	2,900
May 21, 1918—	War Bee, Nova Scotia Steel & Coal Co., New Glasgow, N.S. ....	2,400
May 27, 1918—	War Osiris, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
June 8, 1918—	War Earl, Canadian Vickers Ltd., Montreal ....	7,000
Total. 11 steamships .....		46,500
Wooden Steamships.		
Dec. 28, 1917—	War Songhee, Foundation Co., Victoria, B.C. ....	3,080
Jan. 4, 1918—	War Nootka, Western Canada Shipyards, Vancouver, B.C. ....	3,080
Jan. 24, 1918—	War Yukon, Cameron-Genoa Mills, Victoria, B.C. ....	3,080



Feb. 16, 1918	War Puget, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
Mar. 6, 1918	War Selkirk, Western Canada Shipyards, Vancouver, B.C.	3,080
Apr. 10, 1918	War Caribou, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
Apr. 11, 1918	War Comox, New Westminster Construction & Engineering Co., New Westminster, B.C.	3,080
Apr. 11, 1918	War Massett, Foundation Co., Victoria, B.C.	0,080
Apr. 13, 1918	War Tyee, Pacific Construction Co., Coquitlam, B.C.	3,080
Apr. 25, 1918	War Ilaida, Cameron-Genoa Mills, Victoria, B.C.	3,080
Apr. 27, 1918	War Cayuse, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
May 11, 1918	War Mohawk, Quinlan & Robertson, Ltd., Quebec, Que.	3,080
May 11, 1918	War Sioux, Port Arthur Dredging Co., Port Arthur, Ont.	3,080
May 21, 1918	War Atlin, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
May 23, 1918	War Tatla, Western Canada Shipyards, Ltd., Vancouver, B.C.	3,080
June 12, 1918	War Skeena, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.	3,080
June 13, 1918	War Seneca, Quinlan & Robertson, Quebec, Que.	3,080

Total, 17 wooden steamships .....52,360  
Total deadweight tonnage 11 steel and 17 wooden steamships launched, 98,860.

An Ottawa press despatch of June 24 said:—"It is anticipated that before the close of the year the greater number of the 46 vessels now being built by the

## Atlantic and Pacific Ocean Marine.

The Cunard Line s.s. *Ascania*, while bound from Liverpool, Eng., to Montreal, ran on the rocks near Rose Blanche, Nfld., during a fog, June 14, and is said to be a total loss. The few passengers and the crew were removed in safety. She was built at Newcastle upon Tyne, Eng., in 1911, for the Canadian trade, and was of the 2-class type of vessel. Her dimensions are, length 466 ft., breadth 56 ft., depth 29½ ft.; gross tonnage, 9,121.

The Cunard Co.'s s.s. *Ausonia* was reported recently as sunk by a German torpedo in mid Atlantic. She was reported to have sailed from a British port on May 25. Just about a year ago she was attacked by a submarine and was damaged, but reached port, where she was repaired. She was built in 1911, at Newcastle upon Tyne, Eng., for service between London, Southampton and Canada, and was of the 2-class type, with a speed of about 14 knots an hour.

Canadian Railway and Marine World for June mentioned a report that Canadian Pacific Ocean Services had arranged for chartering the steamships *Tjikembang* and *Tjison*, two of the Holland steamships which were taken over by the

## Maritime Provinces and Newfoundland.

The s.s. *Lake Houghton*, built at one of the U.S. yards on the Great Lakes, was reported ashore near Canso, N.S., June 14.

The Reid Newfoundland Co. is reported to have chartered the sealing steamship *Neptune* for a few trips in its Labrador service.

The Dominion Public Works Department will receive tenders to July 9, for improvements to the harbor at Inverness, N.S.

The St. John, N.B., City Council is receiving tenders to July 2 for the rebuilding of a part of the ferry wharf at West St. John.

The Dominion Public Works Department received tenders, June 25, for repairs to the department's s.s. *Tyrian*, lying at Halifax, N.S.

The s.s. *Alvor*, a steamship of 3,500 tons, owned in Holland, now operating under the U.S. flag, was reported ashore on the Devil's Ridge, off Yarmouth, N.B., June 14.

The Dominion Steel Corporation's s.s. *Hochelaga* was reported ashore near Port au Port, Nfld., June 5, and the Reid Newfoundland Co.'s s.s. *Kyle* was sent from St. John's to her assistance.

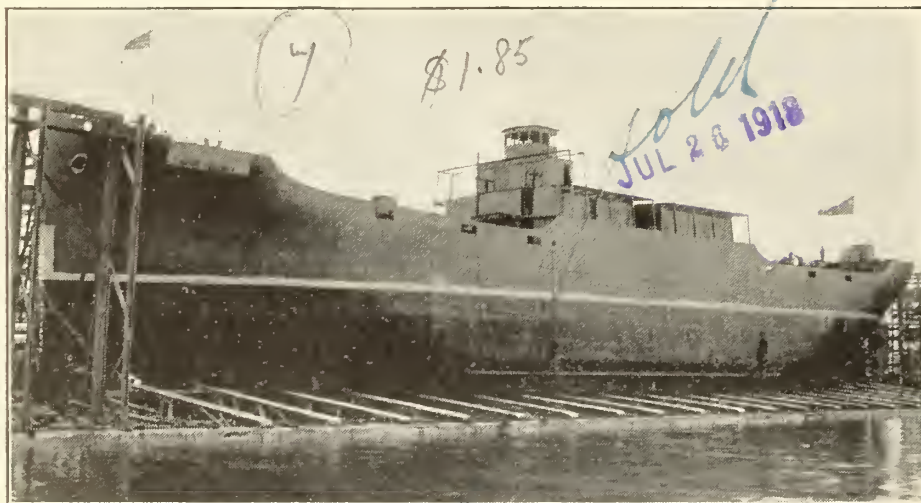
The Dominion Iron & Steel Co. is suing the Corono Joint Stock Steamship Association, in Philadelphia, Pa., for \$1,302,000, for breach of contract relative to the chartering of the Norwegian steamship *Sandefjord*. The vessel, which was loaded recently at Philadelphia, with a cargo for Rotterdam, was released on a bond for \$1,000,000.

The small coasting steamship *La Have*, which was wrecked at Southern Head, near Tancook, N.S., during May, is expected to prove a total loss. She was built at Pocomoke, Md., in 1888, and was formerly named *Isaac N.* She was screw driven by engine of 18 n.h.p., and her dimensions were: length 96 ft., breadth 17.4 ft., depth 7.6 ft.; tonnage, 89 gross, 60 register. She was operated between *La Have* and Halifax.

The small steamboats *J. C. Miller*, owned by W. B. Snowball, Chatham, N.B., and *J. W. Brankley*, owned by the Miramichi Lumber Co., have been requisitioned by the Dominion Government for overseas service. It is stated that they have been taken to Montreal, where they are to be taken aboard other vessels for transportation across the ocean. The *J. C. Miller* was built at Douglastown, N.B., in 1910, and is screw driven by engine of 12 n.h.p., her dimensions being, length 54 ft., breadth 14.9 ft., depth 5 ft.; tonnage, 33 gross, 15 register. The *J. W. Brankley* was built at Chatham, N.B., in 1914, and is screw driven by engine of 16 n.h.p., her dimensions being, length 64 ft., breadth 16 ft., depth 7 ft.; tonnage, 61 gross, 19 register.

**Military Service and Navigation Interests.**—A consultation took place recently between the Dominion Marine Association and the Chief Public Representative (military), to whom representations were made as to the urgent need of leniency in the enforcement of the Military Service Act, in view of the great difficulty experienced in procuring certificated officers and crews.

The Montreal Harbor Commissioners have announced an increase in rates on grain in the harbor elevators, to stop the practice of using elevators for storage purposes.



The s.s. *War Osiris*, launched by the Port Arthur Shipbuilding Co., May 25.

Imperial Munitions Board on the Pacific and Atlantic will be ready for launching. The first will have her trial trip at Vancouver, and the whole fleet will be practically completed by September. On the Pacific, 27 are being built, and on the Atlantic, 19. They are of 3,100 tons each. The manufacture of machinery for the vessels is being speeded up, and it is expected that the greater part of it will be installed by the year end. At the completion of these contracts the Imperial Munitions Board will go out of the shipbuilding business, and the Dominion Government will thereafter carry on the industry as a national enterprise."

This dispatch evidently refers only to the 46 wooden steamships which the Imperial Munitions Board has ordered for the British Government, in addition to which the board has ordered 41 steel steamships.

The s.s. *War Yukon*.—This vessel's trials were conducted in the early days of June, in the direction of Albert Head, out of Victoria, B.C. It was reported that everything was satisfactory, a speed of 12 knots an hour having been maintained for three consecutive hours. The contract speed was 10 knots.

allies under arrangement. At the time the item was inserted it was impossible to obtain confirmation or denial of the report, but we have since been officially advised that the company has not chartered the vessels named.

The *Troja Steamship Co., Ltd.*, has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital stock, and office at Montreal, to own and operate steam and other vessels, and to carry on a general transportation business within and without Canada. The incorporators are connected with a legal firm in Montreal, and apparently the company has been formed for the purpose of owning and operating the s.s. *Troja*, launched recently at the Thor Iron Works, Toronto, an illustration of which is given on another page in this issue.

**U. S. Control of New York State Barge Canal.**—In order to remove an incorrect impression relative to the operation of the canal by the federal authorities, it is pointed out that the U.S. Government has merely assumed control of the traffic on the canal, the State of New York being concerned only with the physical features. All officials are working in close harmony.



## Province of Quebec Marine.

The Public Works Department received tenders June 21 for dredging in the east channel of the St. Maurice River, at Three Rivers.

Canada Steamship Lines' s.s. Rochester is announced for service during the summer, between Montreal and Murray Bay, in connection with the company's s.s. Saguenay, to summer resorts on the Lower St. Lawrence. Capt. Legendre, of the s.s. Quebec, has been appointed master of the Rochester, and is succeeded by Capt. J. Dugal, of the s.s. Ste. Irene.

## Ontario and the Great Lakes.

The Detroit & Wallaceburg Steamship Line, under the management of H. B. Smith, Wallaceburg, Ont., has chartered the s.s. Thousand Islander from Canada Steamship Lines, for service on that route.

James R. Lawrence, at one time paymaster on the Welland Canal, was arrested at St. Catharines, Ont., June 16, on a charge of theft of \$16,000 from the Railways and Canals Department. The defalcations are stated to date back to 1892.

The s.s. Tonto, which was launched at Polson Iron Works, Toronto, Oct. 22, 1917, under Dominion Government license, for Norwegian owners, and subsequently requisitioned by the British Government, and stated recently to be in Dominion Government survey service, was docked at Kingston, June 6, some leaks having developed in the bottom plates.

The Pioneer Steamship Co.'s s.s. Australia was rammed and sunk by the s.s. B. F. Jones in the St. Clair River, June 15. The master of the B. F. Jones, immediately after the casualty, is said to have ordered the wheelman to be locked in his cabin, and subsequently handed him over to the Dominion authorities, charging that he made a deliberate attempt to block the Canadian channel.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for May, as follows:—Superior, 601.74; Michigan and Huron, 581.64; St. Clair, 575.11; Erie, 572.20; Ontario, 247.13. Compared with the average May levels for the past ten years, Superior was 0.19 ft. below; Michigan and Huron, 1.15 ft. above; Erie, 0.59 ft. below; and Ontario, 0.31 ft. above.

The Lake Carriers' Association has received complaints recently that masters of some lake steamships are subjecting their own and other vessels to danger by anchoring in foggy weather in mid channel just below the entrance from Lake Huron into the St. Clair River. This practice should be discontinued, as several vessels have been reported to have had narrow escapes of collisions during the past few weeks.

The Port Huron & Sarnia Ferry Co.'s ferry James Beard ran into the Northern Navigation Co.'s dock at Sarnia, May 31, during a fog, doing considerable damage to her bow and port side, finally sinking in about 20 ft. of water. She was subsequently floated and taken to Port Huron. The vessel was built of wood in 1873, and is stated to have been run without a license since 1912, when the Sarnia council refused one on account of her condition.

The steam tug Salvor, which was purchased recently by the Reid Wrecking & Towing Co., Port Huron, Mich., foundered in Lake Huron, June 11, near South

Bay, the crew being saved. The tug was formerly owned by the Great Lakes Dredging Co., Port Arthur, and was built at Bay City, Mich., in 1898, and was screw driven by engine of 56 n.h.p. Her dimensions were, length 105.8 ft., breadth 21 ft., depth 12 ft.; tonnage, 126 gross, 72 register.

The wreck of the whaleback s.s. Henry Cort, near Colchester reef lighthouse at the western end of Lake Erie, has been marked by two striped spar buoys, one at the bow and one at the stern, and also by a gas buoy showing a green light occulting at intervals of 3 seconds, moored abreast the middle of the wreck. The wreck lies north and south, about 800 ft. south of the charted course for down-bound vessels, and is entirely submerged with about 8 ft. of water over the deck.

## British Columbia and Pacific Coast.

The small steamboat Ravalli, owned in Seattle, Wash., was burned at Low Inlet, June 14. There was no loss of life.

The s.s. Birdswell, recently acquired by Wallace Fisheries, Ltd., Vancouver, has had her name changed to P.W.

The Grand Trunk Pacific Coast Steamship Co.'s Queen Charlotte Islands service, by the steamships Prince John and Prince Albert, has been changed from a weekly sailing by each vessel alternately, to a sailing every ten days.

The Coastwise Steamship & Barge Co. is reported to have acquired the s.s. Marmion, owned formerly by the Vancouver Portland Cement Co., for the ore carrying trade between Alaska, British Columbia and Puget Sound ports.

The motor ship Malahat, owned by Canada West Coast Navigation Co., was overhauled and re-caulked at the Cameron-Genoa Mills Shipbuilders' yard at Victoria, during June, after completing her first journey to Australia. She has also had her auxiliary machinery of the Boller type installed, and is expected to commence loading lumber for South America, about July 1.

The Canadian Merchant Service Guild has applied for the appointment of a board of conciliation under the Industrial Disputes Investigation Act, to determine a new scale of wages for officers of coastwise vessels plying in and out of British Columbia ports. The men are asking for a general increase of 15%, and there have been considerable negotiations without anything definite having been arrived at.

The C.P.R. has, as reported in our last issue, purchased the s.s. Daily, from M. MacDowell, Seattle, Wash., and has had her name changed to Island Princess. She was placed on the Gulf Island route June 1. Before being placed in this service, she was thoroughly overhauled and some changes were made in the passenger accommodation, all the work being done by the company's own staff. Her dimensions are: length 116 ft., breadth 23 ft., depth 8.5 ft., and she is equipped with single screw, triple expansion engine with cylinders 11, 18 and 29 in. diam. by 18 in. stroke, supplied with steam by a water tube boiler equipped for burning oil fuel.

The steam tugs Point Ellice and Point Grey, owned by the Dominion Public Works Department, and generally operated on the Pacific coast, are reported to have been leased to the Imperial Munitions Board, which, it is said, will call for tenders shortly for lengthening each by about 20 ft. The Point Ellice was built at North Vancouver, B.C., in 1911, and is

screw driven by engine of 47 n.h.p. Her dimensions are: length 79.6 ft., breadth 20 ft., depth 11.6 ft.; tonnage, 163 gross, 69 register. The Point Grey was built at North Vancouver, B.C., in 1912. She is screw driven by engine of 62 n.h.p., and her dimensions are: length 93.4 ft., breadth 22 ft. 3 in., depth 14.5 ft.; tonnage, 238 gross, 162 register.

## Mainly About Marine People.

Capt. Elias Casey, master on Great Lakes vessels for about 50 years, died at Cobourg, Ont., June 3, aged 91.

Commander John Forester, Canadian Pacific Ocean Services, has been made an officer of the Order of the British Empire.

Hon. J. D. Hazen, Chief Justice of New Brunswick, and ex Minister of Marine and Fisheries, has been made a Knight Commander of St. Michael and St. George.

Capt. Norman McKay, of Owen Sound, Ont., who has been appointed master of the Canadian Northern Ry. car ferry Canora, which was launched at Lauzon, Que., June 10, was formerly master of Canada Steamship Lines s.s. Hamiltonian, and prior to that had been master of the steamships Canadian, J. H. Plummer and H. M. Pellatt, operating largely on the Great Lakes and in the Gulf of St. Lawrence to Anticosti and to Sydney, N.S.

William Byers, who has been appointed chief engineer of the Canadian Northern Ry. car ferry Canora, which was launched at Lauzon, Que., June 10, was formerly chief engineer on the s.s. H. M. Pellatt, and has been engaged in a similar capacity on a number of other vessels owned or operated by Canada Steamship Lines. In Jan., 1917, he was chief engineer on the s.s. Empress of Midland, when she was sunk by torpedo or mine in the English Channel.

W. S. Roberts, chief officer of the s.s. Lord Erne, was the recipient of presentations by Lloyd's and by the former master of the s.s. Percesien, in connection with his conduct in saving the crew of the Percesien, when she foundered in mid-Atlantic recently. The Admiralty authorities, in expressing appreciation of the fine seamanship and courage of all concerned, stated that their actions were worthy of the best traditions of the British mercantile marine. The s.s. Percesien was owned formerly by the Gaspé & Baie des Chaleurs Steamship Co., Quebec.

Capt. Archibald Reid, Port Warden, Montreal, died there, June 19, aged 72. A native of Liverpool, Eng., the greater part of his life was spent at Montreal, or at sea. He was, for many years, Superintendent, Dominion Steamship Co., at Montreal, and for the past 25 years was port warden there, and also acted as Lloyd's surveyor. He frequently acted as nautical assessor on investigations into marine casualties, and his intimate knowledge of navigation problems in connection with Canadian waters, was exceptionally valuable. While in Portland, Me., recently, he fell and displaced some ribs. A few days before his death, he was reported to be progressing satisfactorily.

T. E. Higgins, Car Foreman, C.P.R., Fort William, Ont., writes:—"Canadian Railway and Marine World's Transportation Appointments Department is very widely read and is always looked for, as a person is always interested in reading as to where the associates and partners of earlier years are stationed."



## Government Shipbuilding in the United States.

The U.S. Shipping Board announced early in June that the delivery of steel steamships under the Emergency Fleet Corporation programme had reached and passed 1,000,000 dead-weight tons. With 8 requisitioned ships completed and accepted by the Shipping Board during the week ended May 25, an aggregate tonnage of 51,136, and 2 contract ships with a total tonnage of 12,350, the d.w. tonnage of all of the vessels completed to that date amounted to 1,010,093 tons.

The completion of a million tons, of course, marks only a milestone in the long route U.S. shipbuilders have to travel. A million tons of shipping in one year is an output that would have been called extravagant if predicted a few years back. It represents a total of 153 vessels, ranging from 3,000 to 12,000 tons d.w., which have been completed and turned over to the U.S. Government.

The high-water mark in U.S. shipbuilding was attained in May. There were completed and delivered to the Shipping Board 44 steel and wood steamships, totalling 263,571 tons. The greatest production in any previous month was in March, 1918, when 21 steel ships, totalling 172,611 tons were delivered to the Shipping Board. Thus, over March, the advance was 23 ships, or 90,960 tons; over April the advance was 14 ships, or 103,285 tons. The output of May was three times that of January. The May output brings the total deliveries since September, 1917, up to 170 ships, aggregating 1,112,897 tons. The record prewar year in U.S. shipbuilding was 1901. The output (exclusive of the Great Lakes) was 402,136 tons, or a monthly average of 33,511 tons.

Following is the ship production to date this year in the two leading shipbuilding nations of the world (given in dead-weight tons):

	United States.	United Kingdom.
January . . . . .	88,507	87,852
February . . . . .	123,625	150,057
March . . . . .	172,611	252,511
April . . . . .	160,286	169,000
May . . . . .	263,571	*

\* Figure not yet at hand.

The greatest year in the history of shipbuilding in the United Kingdom was 1913, when the output was 2,898,229 d.w. tons, or a monthly average of 241,519 d.w. tons. Last year the United Kingdom produced 1,741,500 d.w. tons, or a monthly average of 145,125. The best month was March, with 238,239 d.w. tons.

During the first two weeks of June there were completed and delivered to the Shipping Board 16 steel vessels of a total d.w. tonnage of 89,162. The output of contract steel vessels was one-third of the total of that class to date. Of contract steel vessels there were 5 deliveries, totalling 33,500 tons; of requisitioned steel vessels, 11 deliveries, totalling 55,662 tons. The output, geographically, was as follows: Atlantic coast shipyards, 3 vessels, totalling 17,100 tons; Great Lakes shipyards, 8 vessels, totalling 26,362 tons; Pacific coast shipyards, 5 vessels, totalling 45,700 tons.

The U.S. Shipping Board's Emergency Fleet Corporation has ordered from the Submarine Boat Corporation, Newark Bay, 150 ocean going steel steamships, of the fabricated type, with a displacement of about 7,800 tons when loaded to the Plimsoll mark. The deadweight carrying capacity will be 5,500 tons. The vessels will have a length of 343 ft., a beam of 46, and a speed of 10½ knots an hour. As every vessel to be built at this shipyard will be of the same size and

type, the time required for construction and completion will be much less than has heretofore been required for such work, and it will be possible to launch hulls on an average of at least two and possibly three every week. The main machinery will consist of a Westinghouse steam turbine operating at 3,600 r.p.m., driving the single screw propeller at 90 revolutions per minute through a Westinghouse balanced floating type reduction gear.

Five new yards for the building of concrete ships and the construction of a total of 42 new concrete steamships have been authorized by the U.S. Shipping Board. Of these 42 concrete ships, contracts for 18 have already been given by the Emergency Fleet Corporation. Contracts for the building of the remainder will shortly be let. The 42 ships will nearly all be tankers of 7,500 tons each, with a capacity of 50,000 barrels of oil. Each of the 7,500-ton ships will have 2,800 h.p. and a speed of 10½ knots an hour. Others will be cargo ships of 3,000 and 3,500 tons. The 42 ships will have a total of 298,500 d.w. tonnage.

The five Government yards for the building of concrete ships are to be located at various points on the coasts. The construction of one of these yards at Wilmington, N. C., is already under way. Other yards are to be at Jacksonville, Fla., Mobile, Ala., and San Diego, Cal. The fifth yard is that at San Francisco of the San Francisco Shipbuilding Co., which built the Faith, the first U.S. concrete vessel. This company has been given a contract for 8 concrete ships. There are also two private concrete shipbuilding yards, one at Brunswick, Ga., the other at New York City.

The estimated cost of building a wooden ship in the U.S. is about \$165 a ton complete and that of a steel ship about \$180 to \$220 a ton complete. The estimated cost of concrete ships is between \$100 and \$110 a ton complete.

Concrete barges are to be built as soon as possible for use on the New York State Barge Canal, which is now under the direction of the committee on inland waterways of the U.S. Railroad Administration's Committee on Inland Waterways. The committee has asked bids for the construction of 21 reinforced concrete barges, of approximately 500-tons carrying capacity each.

**Steamboats in the Far Northwest.**—The Peace River Development Co.'s steamboats are the only ones trading from Peace River Landing to Herschel Island, 2,000 miles, this season. The route is not a continuous one. The steamers connect with the Edmonton, Dunvegan & British Columbia Ry., and the first piece of navigation extends to Vermillion Chutes, whence a motor road is being completed to Lower Peace River, where there is steamboat connection to Chipecan on Athabaska Lake. From this point there is a steamboat route to McMurray on Athabaska River, which is the terminal point of the Alberta & Great Waterways Ry., extending to Edmonton. The tourist possibilities of this area are being developed by the railway company.

The outturns of grain cargoes are being adjusted on the same basis as during 1917, pending a decision by the Board of Grain Commissioners. At the time of writing (June 22), no settlements had taken place on new cargoes, but vessels were carrying on, on the understanding mentioned.

## Cargo Steamship Building for Dominion Government.

**Orders for Steamships.**—As stated in Canadian Railway and Marine World for April, the Dominion Marine Department had then ordered 4 steel cargo steamships, 2 from Canadian Vickers, Ltd., Montreal, of 4,300 and 8,100 tons dead weight respectively; 1 from Collingwood Shipbuilding Co., 3,750 tons d.w., and 1 from Wallace Shipyards, Ltd., North Vancouver, B.C., 4,300 tons d.w. No further orders were placed for some weeks, but we are now advised officially that the following have been given:

Collingwood Shipbuilding Co., Collingwood, Ont.—1 steel steamship, 3,750 tons d.w., making 2 of similar size from that company.

Tidewater Shipbuilding Co., Three Rivers, Que.—2 steel steamships, each 5,100 tons d.w. This is a company organized recently, and in which Canada Steamship Lines is interested. Its yard is at Cap de la Magdalene, near Three Rivers. J. W. Norcross is President, the other directors being H. W. Cowan, F. S. Isard, F. P. Smith and A. A. Wright.

Wallace Shipyards, Ltd., North Vancouver, B.C.—1 steel steamship, 4,300 tons d.w., making 2 of similar size ordered from that company. Provisional arrangements have also been made for building 4 steel cargo steamships, each 5,100 tons d.w., by this company.

A press report stated recently that the Dominion Government had taken an option on 6 steamships to be built by the Dominion Shipbuilding Co., Toronto. We are advised officially that this is not the case; also that no order has been given the St. John Shipbuilding Co., St. John, N.B.

The Collingwood Shipbuilding Co., Collingwood, Ont., immediately after launching the s.s. War Wizard on May 8, for the British Government, laid the keel of an ocean going cargo steamship of 3,800 tons d.w. for the Dominion Marine Department.

**Patrol Service at Sault Ste. Marie Canal.**—The Dominion Marine Association has agreed to join with the Lake Carriers' Association to maintain a patrol service at the canal locks at Sault Ste. Marie, to govern vessel traffic there, on the same basis as applies to U. S. vessels. A suggestion that the service be developed to include the delivery of mail is being considered.

**Locking Vessels at Sault Ste. Marie.**—Arrangements have been made for placing a man on the south lower pier of the Canadian lock at Sault Ste. Marie, to take the lines from upbound vessels.

**Ferry Licenses.**—Following the amalgamation of the Dominion Customs and Inland Revenue Departments, the licensing of ferries has been transferred to the Public Works Department.

Canada West Coast Navigation Co., Ltd., has changed the number of its directors from 10 to 5, and has passed a bylaw taking power to change the number to not more than 15 and not less than 3, should occasion warrant, such changes to be approved by two-thirds of the stock represented at a meeting to be called for such purpose or at a general meeting of shareholders. The company's head office is in Montreal, and the home port of its vessels is Vancouver.

The C.P.R. s.s. Tees, which struck a rock off Vancouver Island, near Sidney, Apr. 4, was replaced on her route to the west coast of the island, during June.



## Welland Canal Accidents.

While upbound, June 5, without cargo, the Ontario Transportation & Pulp Co.'s s.s. Linden struck the two upper gates of lock 4 on the Welland Canal, and unmitigated them. The water released from the reach above, which is a comparatively short one, carried out the two gates, the tow path foot gate and the vessel all passing into the level below. The vessel was jammed between the banks cross-wise, and a tug had to be requisitioned to release her. It was necessary to place four spare gates in position, as a bad leak developed between the gate that remained and the miter sill. Navigation was resumed during the evening of June 6, after traffic had been interrupted for about 25 hours. The canal banks on the heel path side at the foot of lock 3, and at the head of lock 2, were washed out to some extent, but not seriously. The s.s. Linden received minor injuries to her stem and rudder, and was docked at Port Dalhousie for repairs. The damage to the canal was about \$7,000.

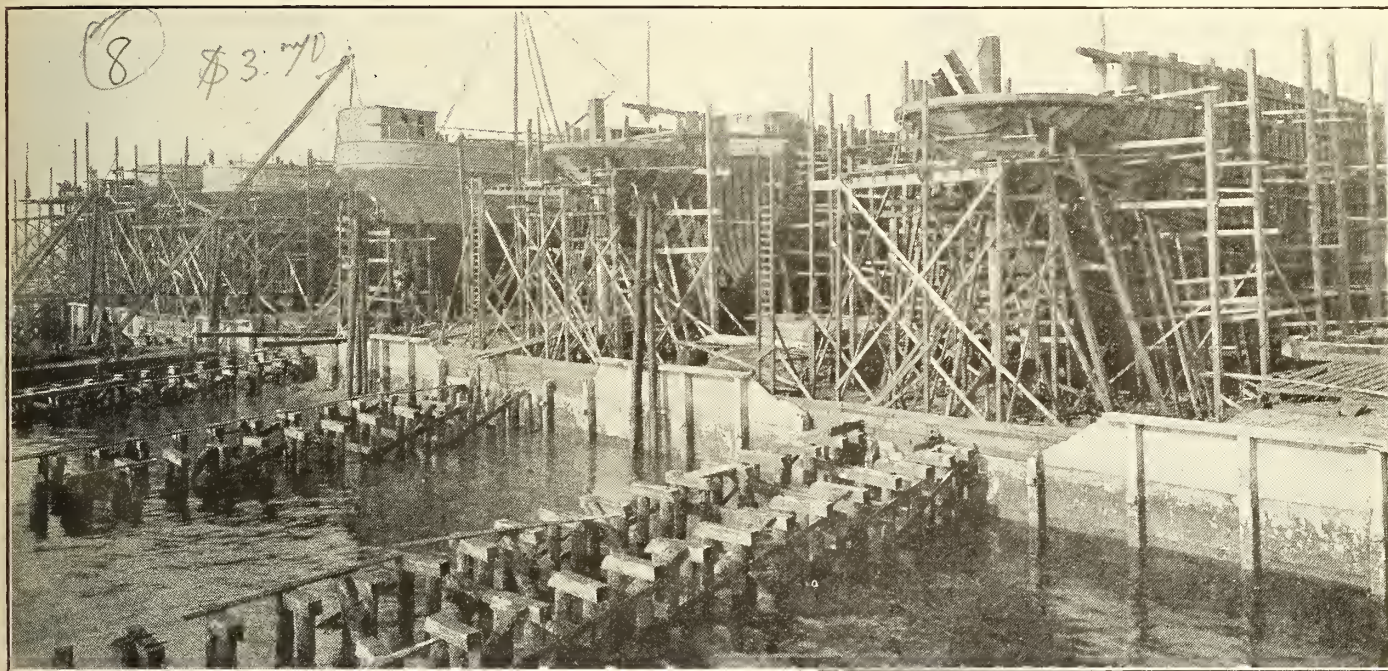
In connection with these lock gate acci-

inconvenience. For pedestrian traffic, a ferry was operated, a round trip being made every 10 minutes. Vehicular traffic had to cross at the feeder junction highway bridge, about 1¼ miles to the south. As the damaged bridge is operated by electricity, it is surmised that the severe electrical storm of the previous night cut off the current, and the bridge was being operated by hand. In doing this, it stuck and could not be moved. The usual signal that the bridge could not be operated, was given to the vessel, and the bridge tenders claim that this was given in sufficient time to stop the to the strong current at this point, it was not seen, or not heeded until the barge was very close to the bridge, and owing to the strong current at this point, it was too late to avert an accident. The barge struck the long arm, swinging it in a contrary direction to that in which it opens, until the short arm stopped against some concrete steps on the easterly side of the canal, when both bridge and barge came to a stop. The bridge was bent badly out of line, the chief damage being to the bottom chords and the top and bottom laterals. The operating machinery

## Fabricated Shipbuilding in the United States.

Intensive production of ships reached a new stage in the United States recently when the Agawam was launched at New-ark Bay. The event marks an epoch. The Emergency Fleet Corporation's great bulk order yards have started to produce ships. Quantity production of ships as developed by these yards means the application of factory methods, standardization and division of functions; it means the fabricated ship. A year ago this was nothing more than a dream, but on the dream were founded the agency yards. It has become a reality, a tangible fact.

As the mere addition of one more vessel to the U.S. supply fleet the Agawam's entrance into the water is of only momentary interest. But it is memorable as an event signaling the success of a new conception: that of using existing shops, though far inland, to take the place of shipyard shops that are lacking. This simple idea created the fabricated ship, which the shipbuilding art is encumbered, a new design—for the design, apart from



Five wooden cargo steamships for British Government, under construction by William Lyall Shipbuilding Co., North Vancouver, B.C.

dents, which have been rather numerous during the past few years, it is noticed that in practically the whole of them, the cause given is mistaken signals between the bridge and the engine room. The case mentioned above is another added to the list, the engines being put ahead, when the master signalled a reverse.

An accident of a different nature occurred June 7, when the Montreal Transportation Co.'s barge Brookdale, in tow of the tug Escort, while down bound and loaded, collided with the steel swing highway bridge in Welland, damaging it somewhat and rendering it unsafe for operation until repaired. Much cutting of concrete on the face of the westerly abutment had to be done before the bridge could be swung to the open position, after navigation had been interrupted for about 13 hours. About 12 vessels were delayed for varying periods. The bridge was left open until repairs could be effected, and as it carries the heaviest highway traffic of any of the bridges over the canal, the city suffered considerable

was not damaged nor was the bridge shifted on the pivot. The damage and expense incidental thereto is estimated at \$7,500. Temporary repairs were rushed by the Hamilton Bridge Co., and highway traffic was resumed June.

We are indebted to L. D. Hara, Superintending Engineer, Welland Canal, for the details of both accidents.

Carter, Wood Shipping Co., Ltd., has been incorporated under the Dominion Companies Act, with \$40,000 authorized capital, and office at Montreal, to build, own and operate steam and other vessels of every description, and to carry on a general shipbuilding, navigation and carrying business.

Quadra Steamship Co., Ltd., has been incorporated under the British Columbia Companies Act, with \$100,000 authorized capital, and office at Britannia Beach, B. C., to own and operate steam and other vessels and to carry on a general navigation business.

modifications in detail that sweep away many of the traditional peculiarities with which the shipbuilding art is encumbered, is that of the conventional ship—but the result of a new method of production.

The simple idea has had a remarkably far reaching effect. Through it the entire bridge building industry has been drafted into shipyard service. Well over a hundred steel fabricating shops scattered over the U.S. are working on ships, a noteworthy contribution to the great war problem of using every pair of hands in the country far behind the lines work. The great labor and equipment resources of these shops have brought into action a virtually limitless reserve of shipbuilding capacity. Today shipbuilding is the occupation of inland cities as well as of coast towns.

It was a civil engineering industry that supplied the great reserve of labor, technical ability and equipment needed for emergency shipbuilding. Of this the profession may justly feel proud. For, had that industry been less thoroughly de-



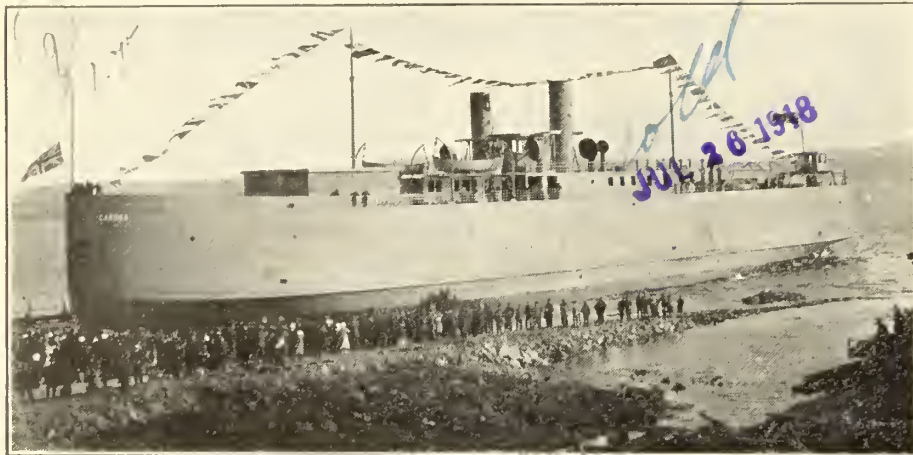
veloped, less highly organized, it would not have been ready to take up the new service. There is cause for equal gratification in the excellence of the results. Predictions have been made that endless trouble would be experienced from the failure of parts to fit at the ways, due to inherent unsuitability of bridge fabricating and erecting methods to the highly specialized ship work. It was asserted that the processes of making straight members for bridges and buildings would be found inadequate for shaping and fitting the intricately curved and beveled pieces of which a ship is built. No doubt there was opportunity for such troubles

## Canadian Northern Car Ferry Canora Launched at Lauzon, Que.

The Canadian Northern Ry. car ferry steamship Canora, which has been built to carry passenger and freight cars between Port Mann, on the south side of the Fraser River, opposite New Westminster, and Patricia Bay, Vancouver Island, B.C., where the company has rail connection with Victoria, was launched at Lauzon, Que., June 10. The christening ceremony was performed by Mrs. R. C. Vaughan, wife of the Assistant to the

It is anticipated that the voyage will take about 40 days. Capt. Norman McKay, Owen Sound, Ont., and formerly master of the s.s. Hamiltonian, has been appointed master, and William Byers, formerly chief engineer of the s.s. H. M. Pellatt, has been appointed chief engineer.

A full description of the vessel was given in Canadian Railway and Marine World for June, page 273, and illustrations are given herewith.



Launching of Canadian Northern Railway Car Ferry Steamship Canora at Lauzon, Que., June 10, 1918.

to develop; but the facts show that they have been avoided. The ships are going together well. Structural designers and shop men have proved equal to solving the new problems put before them. Faith in the possibilities of bridge shop fabrication and shipyard assembly is vindicated.

Half a million tons cargo capacity is now on the ways of the Fleet Corporation's agency yards, and altogether probably a million tons of fabricated steel vessels are under construction. The enormous shipbuilding machine which has been created is already in successful operation. In a few months this vast fleet will be on the ocean, its place on the ways taken by steel for more ships. Daily launchings soon will signalize the final realization of quantity production.—Engineering News-Record.

The Mathews Steamship Co., Toronto, bought the s.s. Saxona recently, formerly owned by G. A. Tomlinson, Duluth, Minn., and has changed her name to Laketon. She was built at Cleveland, Ohio, in 1902, of steel, on the channel system, with steel tank top, 3 watertight and 2 non watertight bulkheads, steel boiler house, steam pump wells, and hatches 24 ft. centers. She is equipped with triple expansion engines with cylinders 20, 33½ and 55 in. diam. by 40 in. stroke, 1,200 i.h.p. at 90 r.p.m., and supplied with steam by 2 Scotch boilers, 13 ft. 2 in. by 11½ ft., at 170 lb. under induced draft. Her dimensions are: length 316 ft., breadth 50 ft., depth 28 ft.; tonnage, 4,716 gross, 3,441 register.

Hugh Cann & Sons, Ltd., Yarmouth, N.S., are reported to have sold the s.s. John L. Cann to a company for operation between Shelburne, N.S., and Gloucester, N.B. The John L. Cann was built at Yarmouth, N.S., in 1891, and is screw driven by engine of 34 n.h.p. Her dimensions are, length 97.8 ft., breadth 19.8 ft., depth 9 ft.; tonnage, 166 gross, 77 register.

Third Vice President, C.N.R. Among others present at the launching, were:—R. C. Vaughan, and Capt. J. B. Foote, Managar, Marine Department, Toronto Insurance and Vessel Agency, representing the owners; G. D. Davie, General Manager, Neil Baker, General Superintendent, and A. C. Campbell, Naval Architect, Davie Shipbuilding & Repairing



Canadian Northern Railway Car Ferry Steamship Canora, on the ways, showing rolling gate at stern to close in space between decks.

Co.

We are advised that as soon as the vessel is ready for sea, she will probably bunker at Quebec, and then proceed to Vancouver, by way of the Panama Canal. The route to be taken, and the distances between the various points are as follows:

	Miles.
Quebec to Newport News .....	1,498
Newport News to Colon .....	1,907
Panama Canal .....	50
Panama Canal to San Francisco .....	3,245
San Francisco to Port Townsend .....	770
Port Townsend to Vancouver .....	80
Total .....	7,550

wooden steamships under construction for the Imperial Munitions Board, one of which, the War Tyee, was launched in April.

The Miami Navigation Co., Ltd., the incorporation of which was announced in our last issue, has arranged for the operation, under contract, of the steamboat Miami. The President of the company is J. J. Stockwell, master mariner; Vice President, W. Harrington; Secretary, T. Scullard; Treasurer, T. King; other directors, F. Granville and T. Donovan. The head office is at Chatham, Ont.



# The Trent Valley Canal Opened from Lake Ontario to Lake Simcoe.

The stretch of inland navigation known as the Trent Canal, extending from Lake Ontario at Trenton, to Rice Lake, was opened for navigation June 3. There was no formal ceremony at Trenton, where the Minister of Railways and Canals, accompanied by a party of members of Parliament, officials of the department

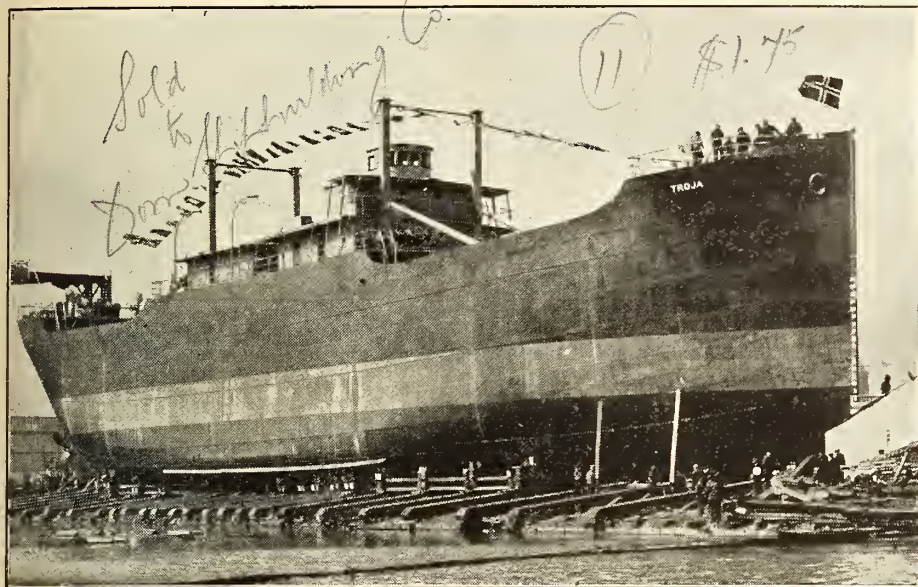
as possible.

The Minister and his party left Peterborough on June 5 and continued the trip through the various stretches of the canal to Lake Simcoe.

The stretch of the Trent Canal opened for navigation on June 3 is the Ontario-Rice Lake division, and is 56½ miles long,

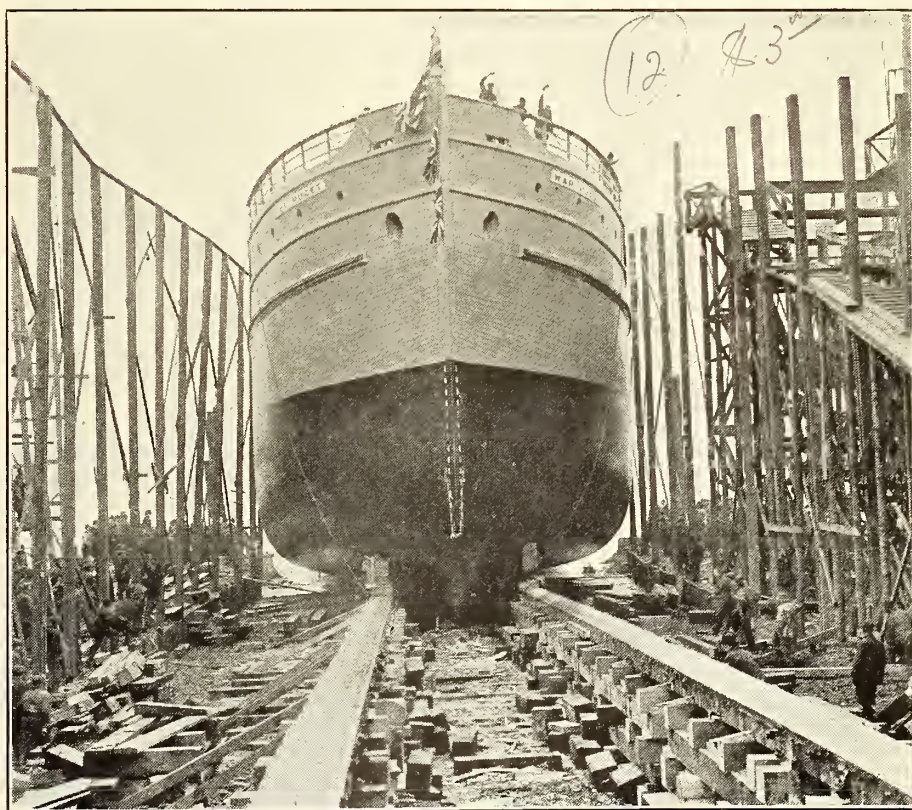
and the normal navigation level at Rice Lake is 369 ft., which is overcome by 18 locks. The river level is controlled by 14 concrete dams and the section of waterway is crossed by 16 bridges, of which 6 carry railway lines. With one exception the bridges are of the swing or bascule type of span. The locks are of concrete, 175 ft. long, 33 ft. wide, and having 8 ft. 4 in. of water on the sills. They are capable of accommodating barges 150 ft. long and 30 ft. wide, drawing 8 ft. of water and having a capacity of 1,000 tons. The work done included the excavation of about 1,500,000 cubic yd. of earth, 1,250,000 cu. yd. of loose and solid rock and the building of about 400,000 cu. yd. of concrete. The estimated cost of the entire work was \$6,750,000. For convenience of construction the work was divided into seven sections, the contracts for which were let as follows:—Sec. 1, Trenton to Glen Millar, 4½ miles, Larkin & Sangster; sec. 2, Glen Millar to Frankfort, 4½ miles, Denmon & Rogers; sec. 3, Frankfort to 3 miles beyond Glen Rose, 7½ miles, Canadian General Development Co.; sec. 4, Adams Landing to Campbellford, 14 miles, Haney, Quinlan & Robertson; sec. 5, Campbellford to Crow Bay, about 3 miles, Brown and Aylmer; sec. 6, Crow Bay to Heely Falls, about 3 miles, Haney, Quinlan & Robertson; sec. 7, Heely Falls to Rice Lake, about 19¾ miles, Randolph Macdonald Co. Sec. 4 was the last to be put under contract in 1916.

The Trent Canal now extends from Lake Ontario at Trenton to Lake Simcoe,



Steel Cargo Steamship Troja, built for Norwegian interests, by Thor Iron Works, Toronto, just prior to launching, May 15, 1918.

and local public men, embarked on a steamer for Peterborough, stopping at a number of points on the route. At Peterborough the party was given a banquet, at which the Minister was the principal speaker. He said the trip from Trenton to Peterborough had convinced him of the Government's wisdom in undertaking the construction of the waterway. The government had nothing to regret, and he trusted that the people would benefit to the full extent of the canal's capacity. For the first time he realized something of the possibilities of the development of the country which would follow the opening of the canal. The mineral deposits which are contiguous to the northern sections of the waterway would find a cheaper outlet than has been possible at present, consequently an extensive development of mining might be expected. It was estimated that along the route of the canal 75,000 h.p. could be developed by using water powers to generate electricity, which could be distributed for manufacturing purposes. The power possibilities of the waterway would be brought to the notice of the Ontario authorities by the department. The total cost of the work to date had been approximately \$16,000,000. The country opened up by the canal is remarkable for its scenery, and offers unequalled advantages for tourist travel. The opening of the new section of the canal will give opportunity for motor and other vessels of considerable size, carrying tourists, to spend a considerable time in the country. The business possibilities of the canal are of considerable importance from all points of view. The final section of the undertaking is intended to give an outlet from Lake Simcoe, via Lake Couchiching and the Severn River, to Georgian Bay. The Minister added that he would do all he possibly could to urge the completion of this section at as early a date



Launching of s.s. War Puget, by William Lyall Shipbuilding Co., at North Vancouver, B.C.

extending from Trenton, on Lake Ontario, to Rice Lake. It follows the Trent River, and comprises 34 miles of deep river, 13 miles of subaqueous channel, and 9½ miles of canal proper. The total rise between low water at Lake Ontario

178.70 miles, with a branch from Sturgeon Lake to Lindsay, and via Lake Scugog to Port Perry, 174 miles from Trenton. The route is via the Trent River to Rice Lake, the two most important places on the route being Campbellford and



Hastings. This section is 56½ miles long. On Rice Lake is the one time important lumbering and ore exporting point of Harwood, the terminus of an abandoned branch of the G.T.R. from Cobourg, which branch was formerly carried across the

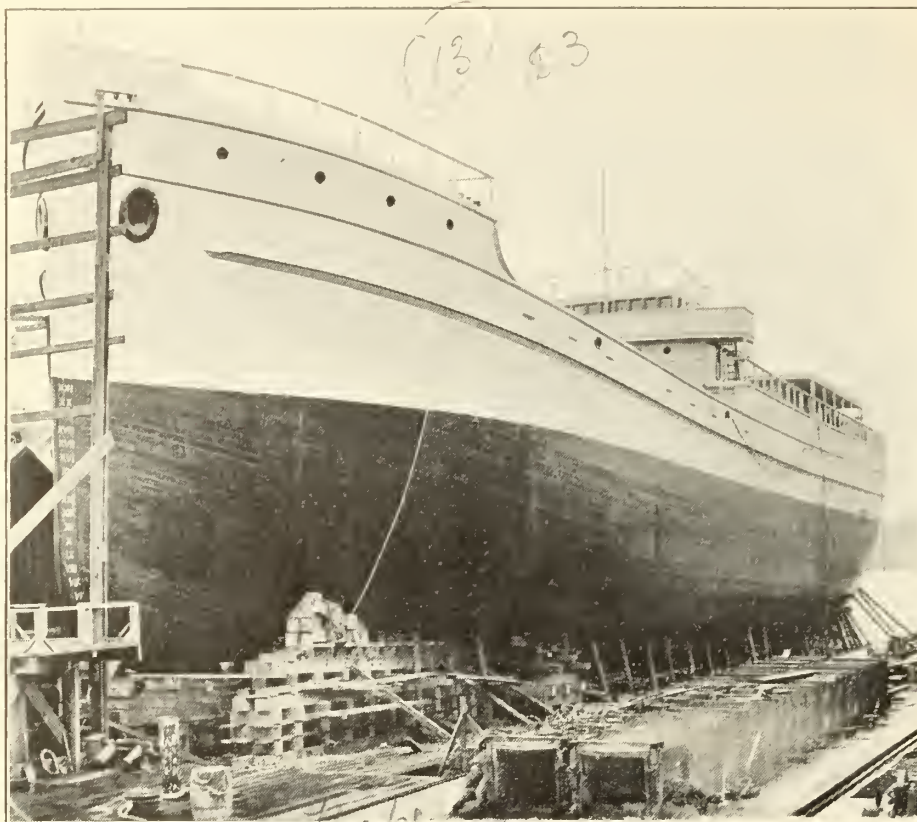
### Fabricated Shipbuilding in Great Britain.

One of the most interesting but least known developments of the present ship-

component parts are transported to shipbuilding yards, assembled there, and put together as complete ships.

It is pointed out that when the state undertook the reorganization of the United Kingdom's shipbuilding industry, the principle of standardization was naturally adopted because in mass production of a specific object the highest possible speed of output is obtainable. A series of standard ships were designed and contracts to build them were given out to the private yards of the country. As supplies of steel and labor increased and promised a margin over and above the requirements of the existing controlled shipyards, the idea was carried a stage further. The fabrication of ships was decided on and the necessary provision made. The aim of the Admiralty Deputy Controller's Department was still further to increase speed of production. As matters stood, all the shipbuilding yards, engine factories and boiler shops were largely occupied with standard ship work. There were, however, many other industrial establishments in the country doing work closely resembling shipbuilding and marine engineering. Among them were bridge building yards and land engine factories. The majority of them were in inland centers and remote from launching water; but, taken altogether, their resources were so great that it was felt that they ought to be used.

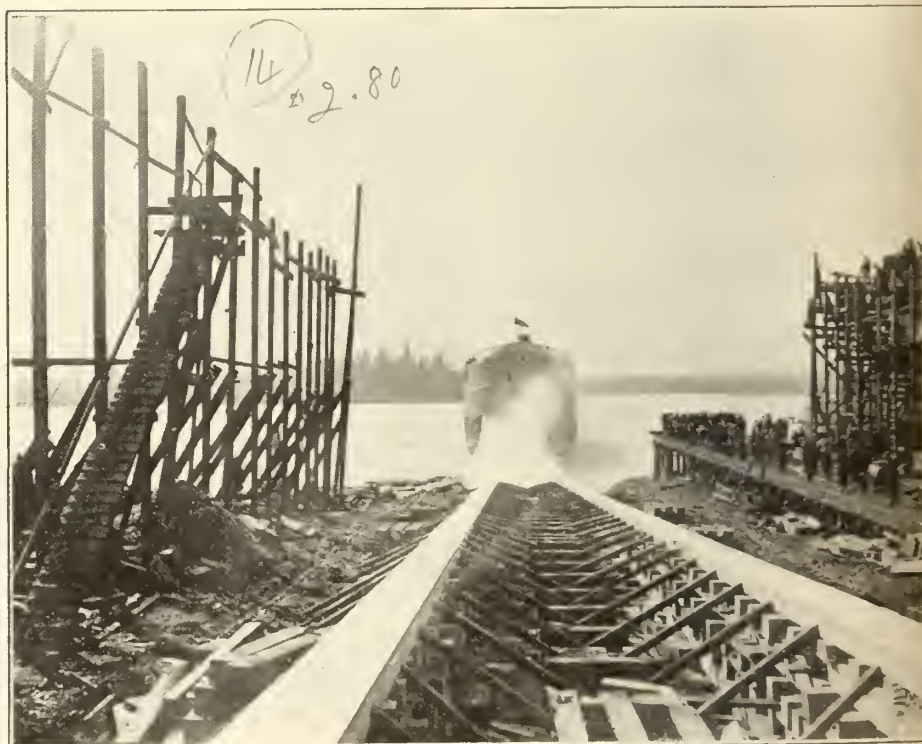
Fabrication solved the problem, and a ship was designed the material of which could be satisfactorily fabricated in the bridge yards. It is a bigger vessel than most of the standard ships, and there is not a curved frame in it. Size and weight of unit of construction are limited, so that transport is easy and powerful gear for placing it in position is unnecessary. To avoid the same difficulties as regards machinery supply, geared turbines have been adopted instead of reciprocating en-



S. S. War Tyee, for British Government, at Port Coquitlam, B.C., just prior to launching.

lake by a bridge, long since entirely swept away. From this lake the canal turns into the Otonabee River, which is followed through to Peterborough, where there is a large double lift lock. This stretch of lake and river navigation has a length of 32 miles. Following the course of the Otonabee River from Peterborough to Lakefield, 10 miles, the canal enters upon the series of lakes known as the Kawartha Lakes, terminating with Balsam Lake, which is the summit of the navigation. This stretch has a total length of 62 miles, and touches Bobcaygeon, Lindsay and Fenelon Falls. At Balsam Lake is the second of the large lift locks. From Balsam Lake the canal descends to Lake Simcoe, which is reached in 18.20 miles, near Groomsbridge. The canal gives an 8 ft. navigation throughout, but it is stated by some authorities that it will not be possible to maintain this throughout the season of navigation owing to possible lack of water at Bobcaygeon. The government plans are to complete the system of navigation through to Georgian Bay, by connecting Lake Simcoe with Lake Couchiching and the stretches of navigable water in the Severn River.

The project for the construction of a canal from Georgian Bay to Lake Ontario was conceived in the early days of the settlement of Ontario, and work was actually started on the canal in 1817. A report was made about 1848 by W. H. Baird, an engineer attached to the office of the commissioner of the projected waterway at Cobourg. He advocated the completion of the locks at Fenelon or Cameron's Falls, and the lock or dam at the outlet of Balsam Lake, at an estimated cost of \$27,000.



Launching of s.s. War Tyee, for British Government, at Port Coquitlam, B.C.

building effort in which Great Britain has led the way is that of fabricated ships. A fabricated ship is a vessel, the component parts of which are manufactured in other than shipbuilding yards. These

gines. Every part of the complete ship can, in fact, be fabricated in inland establishments selected near the steel mills which have never done ship or marine engine work, and can be transported by or-



dinary means to the seaboard. With all the slips in private yards filled it was necessary to look elsewhere for sites for assembling yards. The national shipyards on the Bristol Channel were laid out for the purpose, and private undertakings of the same character exist or are projected with the Admiralty's concurrence elsewhere. The bulk of the labor is unskilled, but is, however, being trained in the use of pneumatic riveters and caulking tools, and will be (already it is in a large number of instances) sufficiently expert to put the assembled fabricated ships together.

The fabrication of material for ships and engines has been organized over a considerable area, local committees being responsible in certain districts for definite deliveries of a ship, or a number of ships, in specified periods. Moreover, fabricated ships are taking shape in several assembling yards. Before long, vessels of the type should represent a very considerable addition to the tonnage output.

### Additional Votes for Navigation, Etc.

In addition to the sums voted in the main estimates at the Dominion Parliament's recent session, as detailed in Canadian Railway and Marine World for May, the following amount was voted in the supplementary estimates for the year ended Mar. 31, 1918:—

#### Public Works, chargeable to Income.

Harbors and rivers—Laprair, Que., protection works, Governor General's warrant, Dec. 17, 1917 ..... \$68,750.54

The following amounts were voted for the year ending Mar. 31, 1917:—

#### Railways and Canals, chargeable to Income.

St. Peter's Canal, improvements, further amount required ..... \$3,000.00  
Welland Canal, to rebuild bridge at Dunnville, washed out by floods ..... 50,000.00  
Arbitrations and awards, further amount required ..... 110,000.00

#### Public Works, chargeable to Capital.

Quebec harbor, River St. Charles, improvements to navigation, further amount required, revote ..... 386,000.00  
St. John harbor, improvements, further amount required ..... 250,000.00  
Toronto harbor, improvements, further amount required ..... 152,000.00

#### Harbors and Rivers.

##### Nova Scotia.

Generally, construction and repairs ... \$55,000.00  
Fort Dufferin, reconstruction of breastwork, further amount required ..... 14,000.00  
St. Andrews, repairs to wharf ..... 1,200.00  
Tynemouth creek, to repair and reconstruct breakwater, revote ..... 4,000.00  
Welchpool, repairs to wharf, revote \$800 ..... 950.00

##### Prince Edward Island.

Mink River, repairs to wharf ..... 1,500.00

##### Quebec.

Anse a Beaulifs, repairs to breakwater and jetty ..... 2,400.00  
Anse aux Gascons, repairs to wharf, further amount required ..... 2,000.00  
Barachois de Malbaie, to repair approach to training jetty ..... 2,400.00  
Beloil, repairs to protection piers ..... 1,900.00  
Chicoutimi, repairs to wharf, further amount required ..... 500.00  
Grindstone, M.I., repairs to wharf, revote ..... 1,000.00  
Lanorrie, repairs to wharf ..... 1,775.00  
Lavaltrie, repairs to wharf ..... 550.00  
Les Escoumains, rebuilding outer end of wharf ..... 3,500.00  
L'Islet, repairs to wharf ..... 1,500.00  
Malbaie, in final settlement of all claims of John Burns in connection with contract for construction of pier.... 2,907.63  
Matane, repairs to wharf ..... 600.00  
Mille Vaches, repairs to wharf ..... 650.00  
Ste. Anne des Monts, repairs to pier ..... 600.00  
Ste. Anne de Chicoutimi, pontoon ..... 3,000.00  
Sorel, repairs to wharf ..... 2,500.00  
Vaudreuil, wharf repairs and improvements ..... 845.00  
Vercheres, wharf ..... 10,300.00  
Ville Marie, repairs and improvements to wharf ..... 4,000.00

\$42,927.63

#### Ontario.

Belleville harbor, improvements to wharf and warehouse, revote \$2,800. \$3,000.00  
Brockville, in final settlement of claims of W. M. Leacy in connection with contract for wharf improvements... 1,219.63  
Burlington channel, repairs to pier, further amount required ..... 7,500.00  
Cobourg, repairs to east pier ..... 4,600.00  
Haileybury, repairs to wharf, revote ..... 600.00  
Kingston dry dock, renewal or revetment wall, revote ..... 12,500.00  
North Bay, in settlement of claims of C. McGuire in connection with contract for construction of breakwater ..... 658.62  
Port Dover, repairs to piers, revote.... 6,000.00  
Portsmouth, repairs to pier ..... 3,100.00  
Wheatley, repairs to pier ..... 1,400.00

\$40,578.25

#### British Columbia.

Fraser River, improvements, revote... \$100,000.00  
Hardy Bay, landing float ..... 1,250.00  
Ladysmith, reconstruction of wharf ... 7,100.00

\$108,350.00

#### Dredging.

Ontario and Quebec, further amount required ..... \$70,000.00  
Yarmouth harbor ..... 50,000.00

#### Mail and Steamship Subventions.

Schooner service between Pictou, New Glasgow, Antigonish County Ports and Mulgrave ..... 1,000.00  
Steam service between St. John and St. Andrews, N.B., calling at intermediate points ..... 4,000.00  
Steam service between Pictou, N.S., and Montague, P.E.I., calling at Murray Harbor and Georgetown, P.E.I. .... 5,000.00  
Steam service from opening to closing of navigation in 1918, between Port Mulgrave, St. Peter's, Irish Cove and Marble Mountain, and other ports on Bras d'Or Lakes ..... 2,000.00

#### Light House and Coast Service.

Salaries and allowances to lightkeepers, further amount required ..... 55,000.00  
Administration of pilotage, and maintenance and repairs to vessels, further amount required ..... 120,000.00  
Further amount required to pay pension of \$300 each per annum to retired pilots ..... 1,993.55

The Cape Breton Shipbuilding Co., incorporated recently in Nova Scotia, is reported to have secured a shipbuilding yard at Johnstown, Richmond County, N. S., and to have leased certain areas. Amongst those forming the company are: F. L. Kelly, Mayor of North Sydney, President; D. H. McDougall, General Manager, Dominion Steel Corporation, Vice President; William Hackett, ship broker, Treasurer; N. A. McMillan, K.C., Secretary; R. T. Sainthill, Manager, Nova Scotia Marine Railway Co.; R. Musgrave, contractor; C. McKenzie, R. Hickey and A. Finlayson, railway contractor.

#### Wheatless Meals on Lake Steamships.

The United States Food Administrator has issued the following:—"The wheat-saving campaign has been given a substantial boost by the announcement that all passenger steamship lines operating on the Great Lakes have decided to eliminate wheat from their menus until the next harvest. There are 54 of these lines, and the saving will be considerable. This is voluntary co-operation with the Food Administration. A number of railways took similar action several months ago."

The Webster Steamship Co., Ltd., Quebec, Que., is operating the steamships Colin W., Eric W., Howard W., Marian W., Muriel W., Richard W., and Stuart W., each of which is owned by a separately incorporated company bearing the name of the particular vessel, and all of which, including the operating company, are subsidiary companies of the Canadian Import Co., coal importers, of Quebec, Que.

The St. Lawrence Shipping & Trading Co. is announced to have been organized with a capital of \$1,500,000, to operate a passenger and freight line from Montreal to Quebec and intermediate ports, and to Gaspe, Sydney and Magdalen Islands. The s.s. Guide is reported to have been purchased. Capt. J. E. Bernier and J. deS. Bosse, are mentioned as those chiefly interested in the company.

Power Development in the St. Lawrence River.—The New York & Ontario Power Co. has applied to the International Joint Waterways Commission for approval of its plans for further power development in the little river channel of the St. Lawrence River south of Ogden Island, at Waddington, N.Y. The application is being opposed by St. Lawrence navigation interests.

Electric Welding & Shipbuilding Co. of Canada, Ltd., has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital stock, and office at Montreal, to carry on shipbuilding and general contracting business, and to use electric and other welding processes.

The White Pass & Yukon Route's sailings commenced June 10, when the steamboats Casca and Yukon sailed from Whitehorse for Dawson, the latter connecting with the s.s. Tanana for St. Michaels.

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie canals during May, 1918.

ARTICLES.	Eastbound		Total.
	Can. Canal.	U.S. Canal	
Lumber . . . . .m. ft. b. m.	1,709	33,738	35,447
Flour . . . . .Barrels	319,840	538,230	858,070
Wheat . . . . .Bushels	1,081,517	1,551,055	2,632,572
Grain, other than wheat . . . . .Bushels	3,660,836	4,526,614	8,187,450
Copper . . . . .Short tons	2,034	12,202	14,236
Iron Ore . . . . .Short tons	2,202,509	6,589,653	8,792,162
Pig Iron . . . . .Short tons	.....	.....	.....
Stone . . . . .Tons	3,850	1,540	5,390
General Merchandise . . . . .Short tons	1,391	9,005	10,396
Passengers . . . . .Number	246	40	286
Westbound.			
Coal, soft . . . . .Short tons	151,440	1,726,533	1,877,973
Coal, hard . . . . .Short tons	13,505	152,650	166,155
Iron Ore . . . . .Short tons	.....	14,671	14,671
Mfgd. iron and steel . . . . .Tons	1,541	6,376	7,917
Salt . . . . .Barrels	1,000	1,835	12,835
Oil . . . . .Tons	.....	31,670	31,671
Stone . . . . .Short tons	.....	41,254	41,254
General Merchandise . . . . .Short tons	25,233	25,493	50,726
Passengers . . . . .Number	325	2	327
Summary.			
Vessel passages . . . . .Number	700	2,087	2,787
Registered Tonnage . . . . .Net	1,822,046	7,117,504	8,939,550
Freight—			
Eastbound . . . . .Short tons	2,351,575	6,849,268	9,200,813
Westbound . . . . .Short tons	192,720	2,010,482	2,203,202
Total Freight . . . . .Short tons	2,544,295	8,859,750	11,404,045



## Wreck Commissioner's Enquiries and Judgments.

Enquiries have been held recently into the following casualties, and judgments delivered:—

### Loss of the s.s. *Louisburg*.

Held at Sydney, N.S., before Capt. L. A. Demers, Dominion Wreck Commissioner, with Lieut.-Commander J. H. Knight, R.C.N., and Lieut. H. C. Owen, R.N.R., as nautical assessors. The s.s. *Louisburg* was owned by the Dominion Coal Co., and was wrecked in St. Mary's Bay, near Cape English, Nfld., May 4, when bound from Sydney, N.S., to St. John's, Nfld., with coal. The court found Capt. Kemp, master of the s.s. *Louisburg*, in default, for not insisting, or demanding, that the patent sounding lead be repaired, it having been out of order for nine months, and no steps were taken to call the owner's attention to it, so that it could have been remedied. The master's statement that he preferred the hand lead, or rather a marked line, is not rational. Either he does not understand the manipulation of the patent sounding machine, or he felt that having it in working order he would be expected to use it frequently. He is also considered in default for trusting too implicitly on his course, without making allowances based on actual calculations, instead of on supposition and assumption. It is well known that currents vary as to their direction and velocity in Cabot Straits and in the vicinity of Newfoundland. Because a course by compass had carried him safely in former trips, it is no reason to surmise that such a condition would always exist. He admitted the deviation of his compass had varied since he had been master of the vessel during the last two years. His education in navigation problems being very limited, there was very little left for him but the frequent use of the lead, to discover the erratic movements of his compass. His course and bearings were plotted on a blue black chart, and the court concluded that it was not of a late edition. It was not shown that he had applied himself to become acquainted with the vagaries of the currents by reference to any book on the subject. On the whole, the court considered that necessary care and precaution were not exercised by the master, under such foggy conditions as existed during the trip.

Regarding the total loss of the vessel, the court considered that poor judgment was shown, in view of the calm state of the seas which practically existed, to have insisted on going astern when it was found that water was entering the engine room. From the evidence it was gathered that there would have been greater wisdom demonstrated in beaching the vessel, by reversing the order and going ahead, thus leaving the possibility of salving her, but it is a point that the court did not desire to press.

Capt. Kemp has been in the company's service for some 30 years, which undoubtedly speaks in his favor. His straightforward evidence, coupled with the precarious conditions existing, are points which cause the court to deal leniently with him, though it considered the loss of the vessel under such conditions and at such time of stress, a very great offence indeed. It therefore suspended his certificate no. 3203, as master, for six months, but recommended during such suspension, a lower grade certificate be granted to him, that of mate, so as to permit him to improve himself in navigation matters.

### Stranding of the s.s. *Lyacon*.

Held at Montreal, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash and C. Lapierre, as nautical assessors. The court found that from the evidence adduced, it could not arrive at any other conclusion than that the pilot alone was at fault. From the master's testimony it was evident that the compasses had not been deviating from their former errors and the deviation given to the pilot, from the time he left Rimouski to the time of stranding. The pilot did not allow sufficiently for the spring tides which were beginning to form on that flood tide, and did not allow sufficient for the strength of the current, and enough on the course to obviate this, especially as at Red Island lightship he had to alter his course, due to the current. From this, it seemed to the court that it would have been rational to take extra care and be a little suspicious of the working of the current, or the effect on the vessel, especially one of the speed of the *Lyacon*. That he had ordered slow, and half speed, and gave an order for soundings, was quite proper, but before the sounding was reported the vessel touched. It did not appear to the court that there was any culpable negligence in the navigation of the vessel, but that there was miscalculation, or lack of calculation, is evident, and also a lack of judgment.

The court expressed its opinion that while it had been severe in dealing with pilots when conditions were different, it felt, that seeing they were exempt from military duties on account of their need, it would be wrong to suspend the pilot's license for any term short or long. Therefore to meet conditions as they exist, the pilot was severely reprimanded and fined the maximum amount, \$400, payable at \$50 a month, and was warned that should he appear before the court again, severe measures would have to be adopted. The officers' evidence showed that all precautions were taken, and as they are absolute strangers in these waters, they relied more or less on the pilot's knowledge and experience for guidance, although it is evident that the master suspected that something was wrong, but before he realized the exact conditions, the vessel grounded.

### Stranding of s.s. *Lake Como*.

Held at Montreal before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash and C. Lapierre, as nautical assessors. After weighing the evidence the court found that Capt. John H. Dizer, master, was in default for careless navigation. His evidence as to courses and the behavior of the vessel was contradicted by other witnesses. He stated that the compasses were but casually and incompletely compensated, owing to lack of facilities to obtain solar observations. Such being the case, continuing on a doubtful course, at full speed, with uncertainty as to errors of compasses, was unjustified, and there did not seem to be any serious attempts to obtain soundings. Much of the evidence of the officers went to show that there had been considerable drinking, but that while the master could not be said to be intoxicated during the morning of the casualty, it was felt that after effects of days of hard drinking existed, and prevented proper judgment being exercised. The master was requested by the court to remain and hear his crew's evidence,

but he chose to absent himself, therefore whatever was said as to his intemperate habits was uncontradicted. The court felt that had proper measures been taken, the vessel would have floated off at the next tide, and considered that the use of a small kedge placed astern with a view to pulling the vessel off, was a farcical attempt to protect property. Altogether the court felt that the master did not take elementary measures of precaution, and as it has no jurisdiction over his license, a copy of the finding was forwarded to the U.S. Consul at Montreal, for the information of his government.

The court announced that the evidence showed that the Pointe des Monts light and the fog horn were in working order, and that the casualty was not due to any defects in the operation of the lighthouse system.

### Government Operation of Erie Canal.

The Director General of U.S. Railroads, acting upon the recommendations of the committee on inland waterways of the Railroad Administration, has decided to construct as quickly as possible and put into operation a line of barges to be operated by the government on the Erie Canal. The barges will be of the most approved type and will be operated in conjunction with and as a part of the general railway and waterways transportation system of the country under the control of the Director General of Railroads. This will ensure the complete co-ordination of the Erie Canal facilities with the railway facilities, and it is hoped will greatly enlarge the available transportation facilities throughout eastern territory. G. A. Tomlinson, of Duluth, Minn., has, as stated in Canadian Railway and Marine World for May, been appointed General Manager of the Erie Canal operations, including the construction of the barges and general equipment. Under government control of the railways and the canal there will be diverted to the canal all of the traffic that can be handled to the best advantage by water, and the canal will be made in the highest degree serviceable in the present situation.

### Combination of United States Express Companies under Government Control.

The Director General of U. S. Railroads has announced that, with a view to handling the express business in the most efficient and economical manner, he has sanctioned the plan of the four principal express companies (Adams, American, Wells Fargo, and Southern) forming a new express company, with which he will make a contract for the carrying on of the express business for all of the railways under federal control. Under this arrangement the new express company will be the Director General's agent for carrying on the express business. The character of the service and the character of the rates will be under the Director General's control and subject to initiation by him.

An important feature of the arrangement is that the new company is to be capitalized only to the extent of actual property and cash put into the business, and the government will share on a progressively increasing scale in any profits



derived from the business. The general method of determining the compensation is that the Director General will receive 50¼% of the operating revenues (or gross earnings), and out of the balance the express company will pay operating expenses and taxes and a dividend of 5% on its capital stock. Out of the next 2% available for distribution the express company will receive 1% and the government 1%; out of the next 3% available for distribution the express company will receive 1% and the government 2%; any further amounts available for distribution will be divided, one-quarter to the express company and three-quarters to the government.

The new express company will put into the business physical properties of the actual value of \$30,000,000, for which capital stock to that amount will be issued. No other capital stock will be issued, except at par for cash.

While the new express company is permitted, upon arranging therefor with the Director General, to use railway employees in express service, the entire compensation of all such employees, both for railway and express services, will be fixed and paid by the Director General; and the new company should remunerate the Director General for services rendered by such employees to the express company.

It is announced that the combination outlined above is for the continuance of the war only, and that the companies will then revert to their original status.

### Among the Express Companies.

W. J. Wilson has been appointed Assistant Treasurer, Dominion Ex. Co., Toronto, vice P. A. Keeler, promoted.

P. A. Keeler, heretofore Assistant Treasurer, has been appointed Treasurer, Dominion Ex. Co., vice G. A. Newman, deceased. Office, Toronto.

The Dominion Ex. Co. service has been withdrawn from the Canada & Gulf Terminal Ry., running between Mont Joli and Matane, Que., the railway company now operating its own express service at points along the line.

The Express Traffic Association of Canada has issued a notice advising that in the next supplement to classification which will be submitted to the Board of Railway Commissioners for approval, it is proposed to include a rule to the effect that express companies shall not be required to pick up or deliver shipments above the ground floor in any building or residence, when such shipments are of such size or weight as not to permit of them being handled by one man, and where elevator facilities are not available.

The Board of Railway Commissioners passed order 27272, June 4, on the application of the Express Traffic Association of Canada, on behalf of express companies, under sec. 340 of the Railway Act, providing that the form of bill of lading issued by the U. S. Government for use in respect of all shipments of munitions, war materials and supplies by or on behalf of that government or any of its contractors, copies of which are on file with

the board, be approved, and that notwithstanding the provisions of order 12953, Feb. 10, 1911, the form approved may be used by all such express companies in respect of said shipments of munitions, war materials and supplies.

### Telegraph, Telephone and Cable Matters.

Girls are being employed on the Western Union Telegraph Co.'s cable service, for the first time in the company's history.

H. Hulatt, Manager of Telegraphs, G.T.R. and Grand Trunk Pacific Ry., made a trip of inspection over the companies' lines during June, spending the greater portion of the month in the west.

Two operators employed by the Great North Western Telegraph Co., who were charged recently with using the company's wires fraudulently in connection with the transmission of betting news, were acquitted at Toronto, May 18. It is stated that the prosecution was undertaken at the company's instance, and the employees have made a demand that the men be reinstated, or a strike will be called.

The Great North Western Telegraph Co. has opened offices at Kiskisink Club House and Valcartier Camp, Que.; Helderleigh, Petewawa Camp and Waubamie station, Ont.; East Selkirk, Grand Beach and Scantbury, Man.; Haynes and Victoria Beach, Alta.; and has closed its offices at Batiscan and New Richmond, Que.; Beachburg and Salem, Ont.; Dropmore, Man.; Chandler, Sask.; and Dodds, Alta.

### Telegraph and Telephone Lines Votes.

The Dominion Parliament, at its recent session, voted the following additional amounts for the Public Works Department for the year ending Mar. 31, 1919:

<b>New Brunswick.</b>	
Chatham-Escominac and Point Sapin telephone line—extension to Kouchibouguac, revote . . . . .	\$3,000.00
<b>British Columbia.</b>	
Mainland telegraph and telephone lines, general repairs and improvements . . .	29,400.00
Mainland telegraph and telephone lines, extensions in Kootenay district, further amount required, revote, \$1,000 . . .	2,000.00
Vancouver Island lines, repairs and renewals, revote . . . . .	6,500.00

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

L'Air Liquide Society, Toronto, has issued a 50 page catalogue describing and illustrating its oxy-acetylene welding and

cutting apparatus and supplies. It contains a comprehensive outline of the oxy-acetylene process and its many applications.

Canadian-Ingersoll Rand Co., Limited, Montreal, has issued a 32 page catalogue, describing and illustrating Ingersoll-Rogger air compressors. It gives a sketch of the development of the Ingersoll-Rogger valve, particularly the application of the valve to large air compressors having direct synchronous motor drive. Other special features of the compressors described are the rolling mill engine type frames, special intercooler design, and clearance controller with automatic maximum load stop.

Locomotive Superheater Co., New York, N.Y., has issued bulletin 3, "Superheater Dampers," dealing with them under the following headings:—Construction and operation of damper; effects of improper installation or maintenance; prevention of freezing; switch locomotive dampers; what to do in installing dampers; what to do and what not to do in maintaining dampers. The bulletin has an illustration showing arrangement of superheater damper mechanism when a locomotive is working, and also several plans.



Department of the Naval Service.

### TENDERS FOR WHARF.

Sealed tenders, addressed to the undersigned, and endorsed "Tender for Coaling Jetty," will be received up to noon on the 15th July, 1918, for the reconstruction of the Coaling Wharf at H. M.C. Dockyard, Esquimalt, B.C.

Tenders should be accompanied by certified cheque for Ten Per Cent. of the amount of the tender.

Plans, specifications and permission to view the site may be obtained from the undersigned or from the Captain Superintendent, H.M.C. Dockyard, Esquimalt.

G. J. DESBARATS,

Deputy Minister of the Naval Service.  
Department Naval Service,  
Ottawa, May 31, 1918.

Unauthorized publication of this advertisement will not be paid for.

### Large Transformers For Sale

3—125 K.V.A.O.I.S.C. Single Phase  
25 cycle.  
Primary Voltage 24000/12000 V.  
Secondary Voltages 2400/1200/600 V.  
With taps for 5%—10%—15% variation.  
First Class Condition. Immediate shipment.  
Also—  
3—T.P.S.T. 300 Amp. 25000 Volt Automatic Oil Switches.

TORONTO & YORK RADIAL  
RAILWAY CO.  
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### CHASE "GOAT BRAND" CAR PLUSH

The standard upholstery for over a third of a century—grades for all uses.

315 Fourth Ave., New York

### CHASE LEATHER WOVE

The long-wearing, rich-appearing upholstery material—inexpensive and distinctive.

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Shipbuilders, Railway and Construction Compan-  
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**Robert W. Hunt & Co., Limited****Consulting and Inspecting Engineers  
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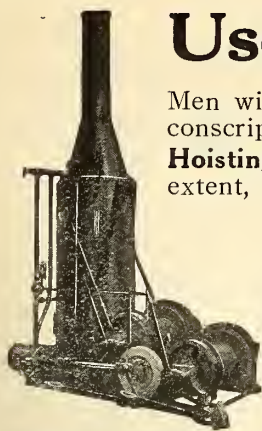
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Pembroke, Ontario.**Positions Vacant****DRAFTSMEN WANTED:**Locomotive elevation and detail  
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## Use Machinery in Place of Men



Standard Derrick Engine, made in 7 sizes, from 10 to 50 Horse Power.

Men will be harder than ever to get this year, and more costly to hire, owing to the conscription regulations.

**Hoisting and Haulage Machinery** will not only take the place of men to a large extent, but **will handle your materials at greater speed, and at a lower cost.**

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**Derrick Irons**

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**Lorries, for track laying and other work.**

**Steel Buckets** for handling any kind of material, wet or dry.

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Our long experience enables us to give the right machinery, of the right quality, and at the right price.

*Have You a Copy of Our Large Illustrated Catalog?*

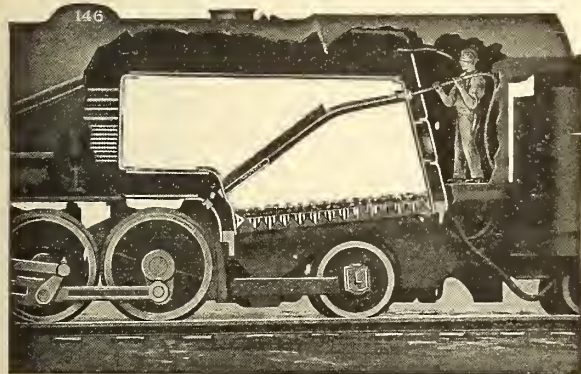
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**Belleville, Ont.**



Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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NEVER BEFORE in the history of Canada has greater opportunity been offered her Sons and Daughters to render SERVICE to the Empire;—and

NEVER BEFORE have the needs of the Empire demanded as high a standard of QUALITY in thought, deed and product as at present.

HOW NOBLY CANADA has responded is now known around the World and history will record it for the future.

THE PRODUCTS OF OUR MILLS are at the Fronts and on the Seas, in the Shipyards and Factories and in the Fields, faithfully fulfilling their mission of reliable performance wherever the Government's War-Winning Programme directs, as we are, and have been, stripped for action since the first call to arms.

THE NEEDS OF THE EMPIRE are many and the War-Winning Programme changes as necessity demands; but it matters not, the needs of the Empire are paramount and must be supplied.

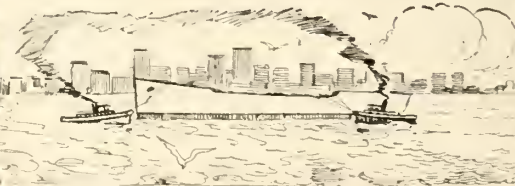
THEREFORE, if in these trying times, we do not deliver promptly to you such of the products of our Mills or Blast Furnaces as you may need, console yourself with the thought that through us, you are rendering Service to the Empire and to the Cause that matters most for the Liberty, Justice and Freedom of the World.

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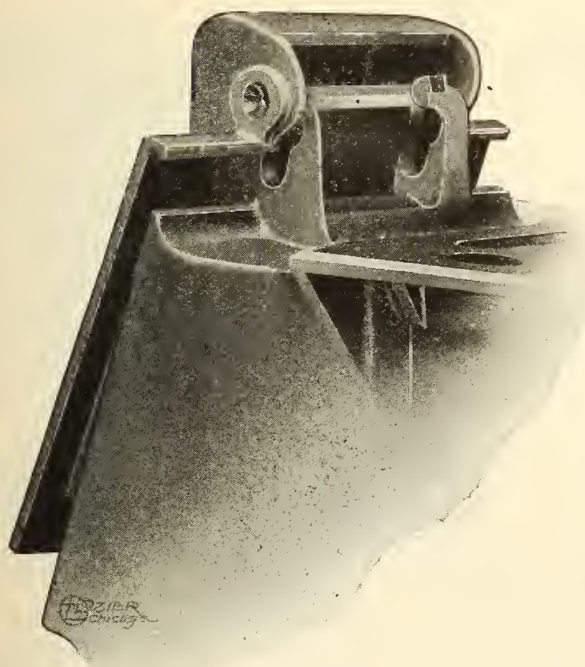


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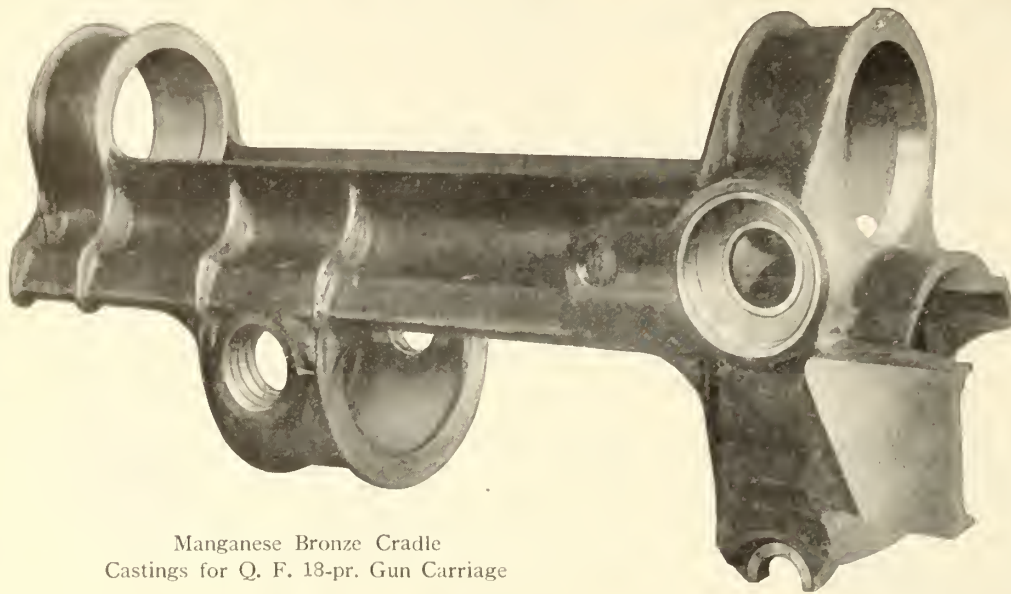
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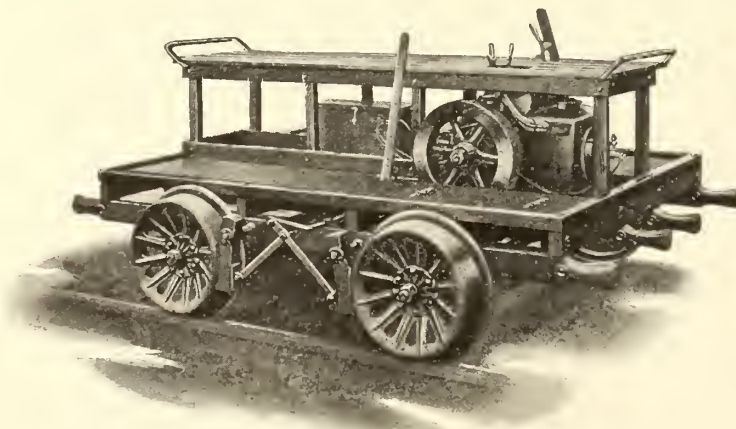
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in  
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Rough or  
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# National Railway Motor Cars



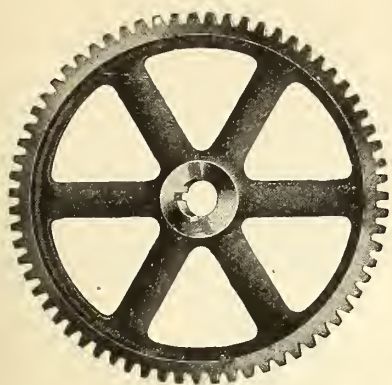
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We are also the manufacturers of the famous "Casey Jones" hand car engine which is furnished complete with all necessary equipment for the converting of a standard hand car or push car into a motor car. Thousands in service throughout the United States and Canada.

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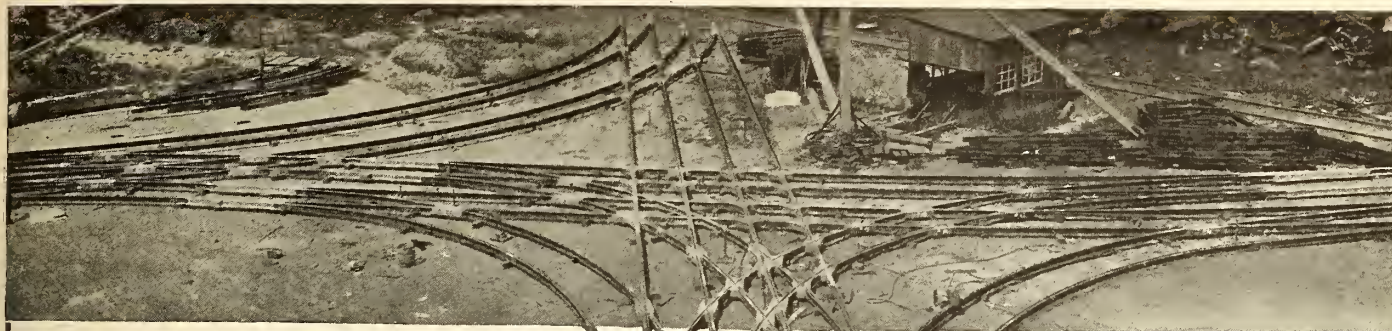
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OXY-ACETYLENE WELDING is proving a great economic factor in the  
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is ideal for all classes of metal repair  
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SOLDIER LADS  
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**THROUGH EXPRESS  
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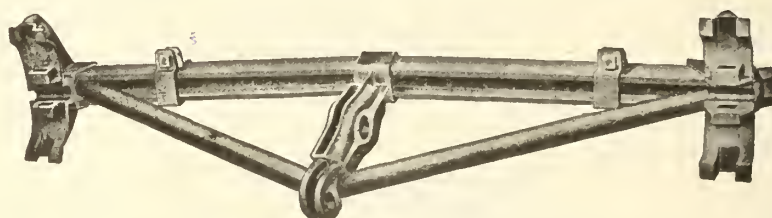
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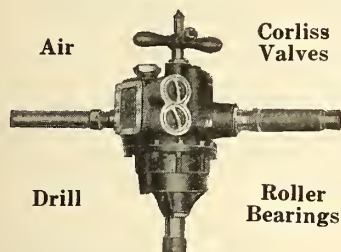
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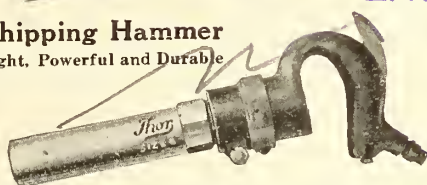
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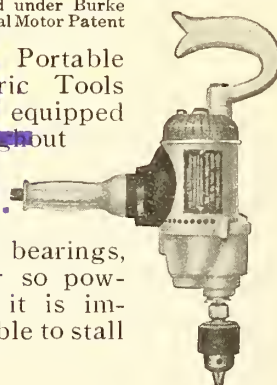
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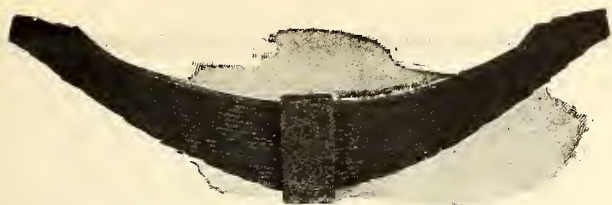
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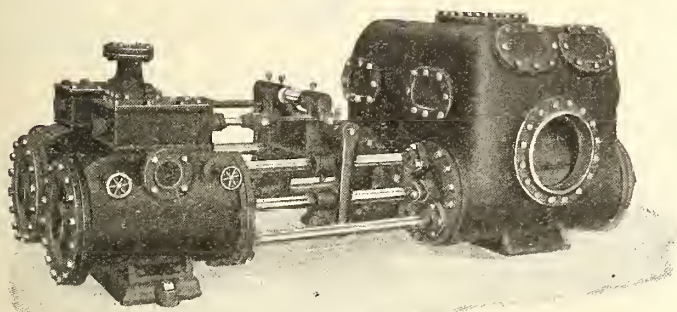
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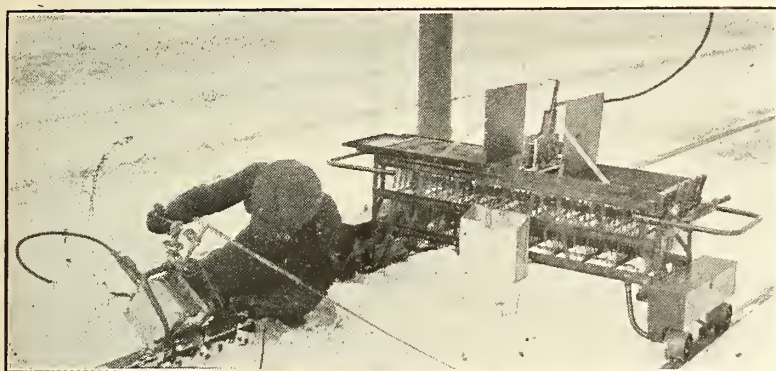
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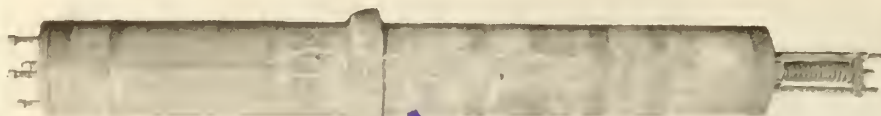
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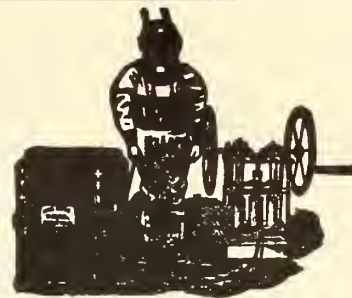
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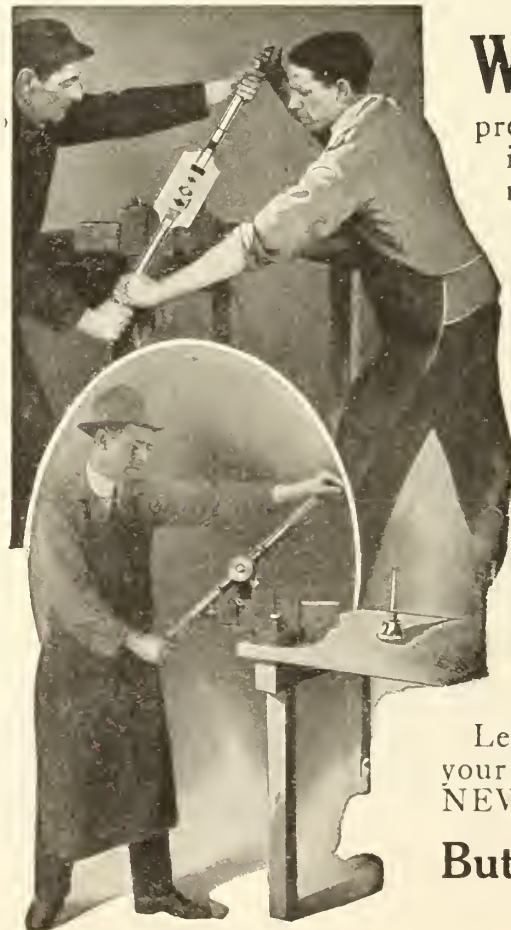
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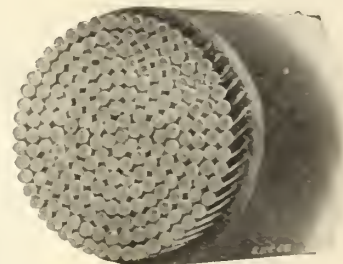
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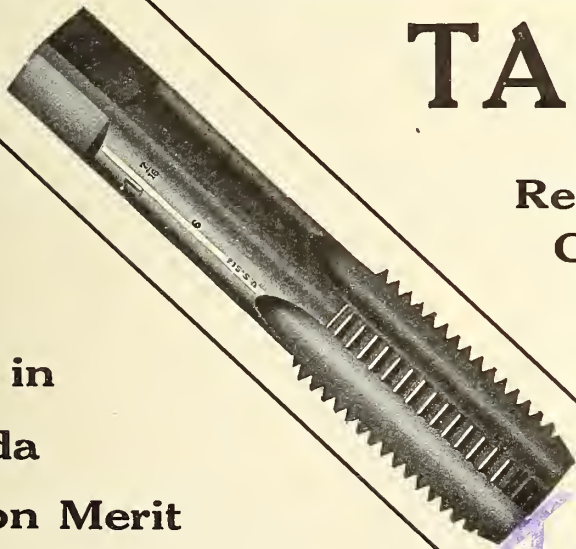
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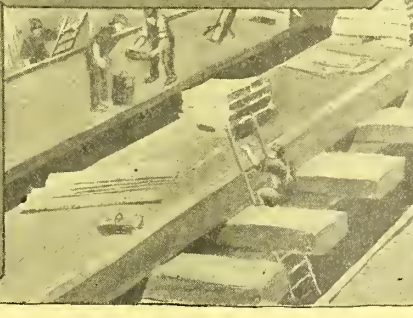
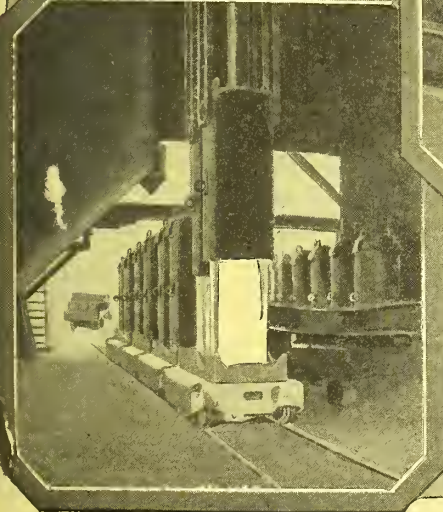
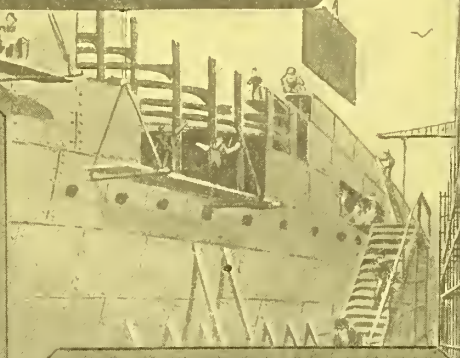
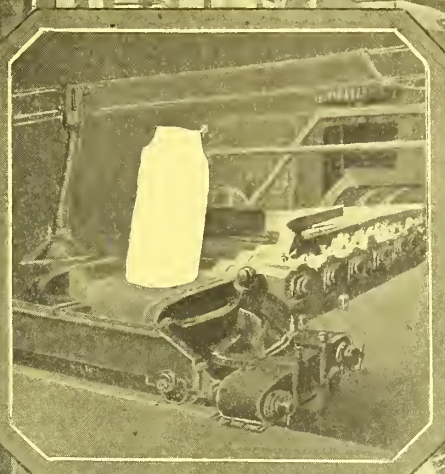
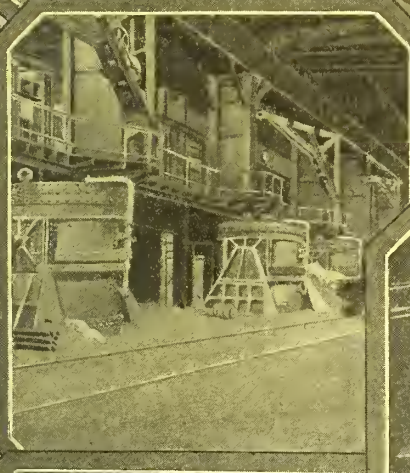
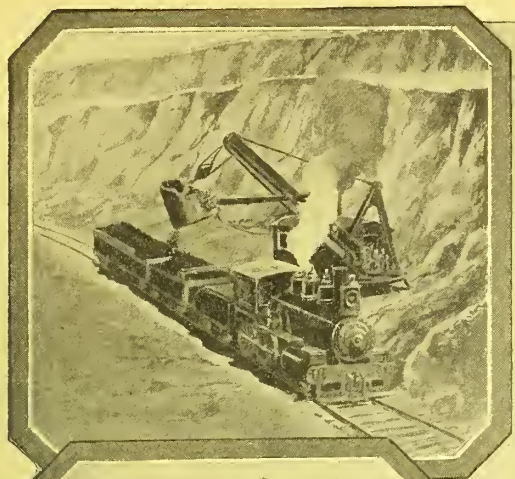
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Number 246

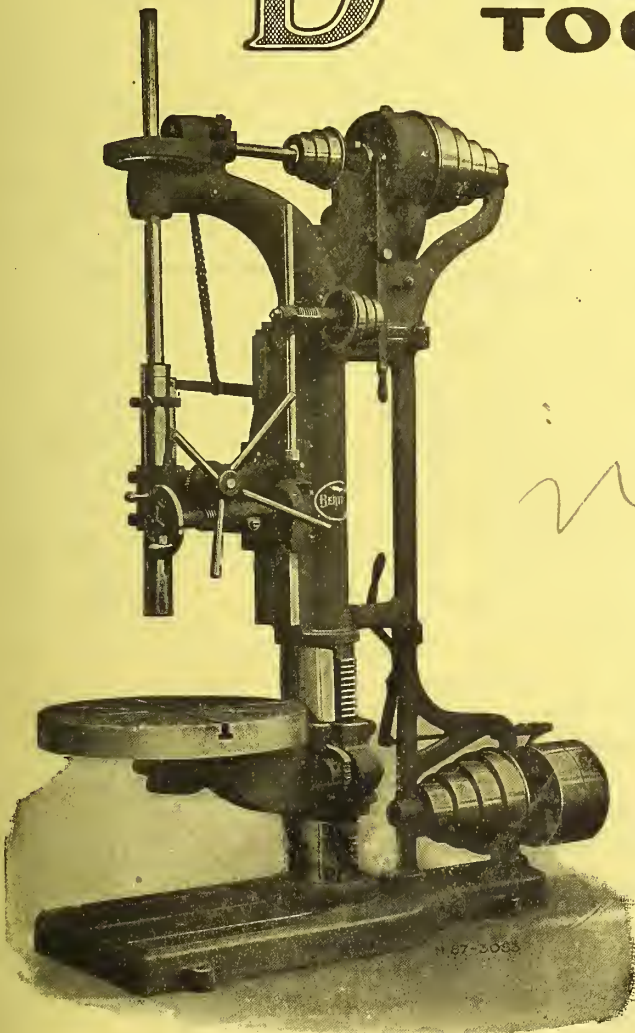
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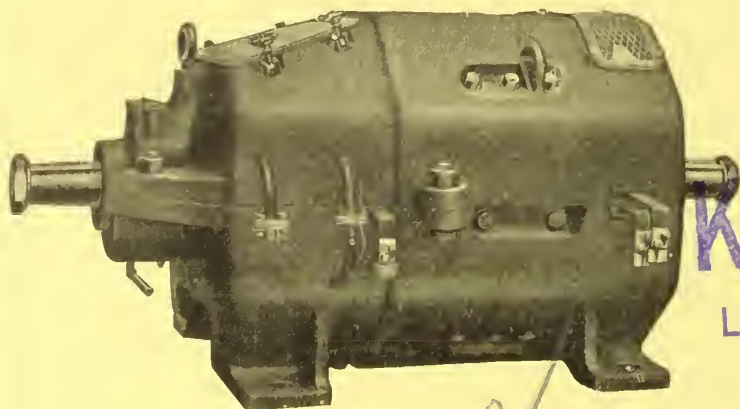
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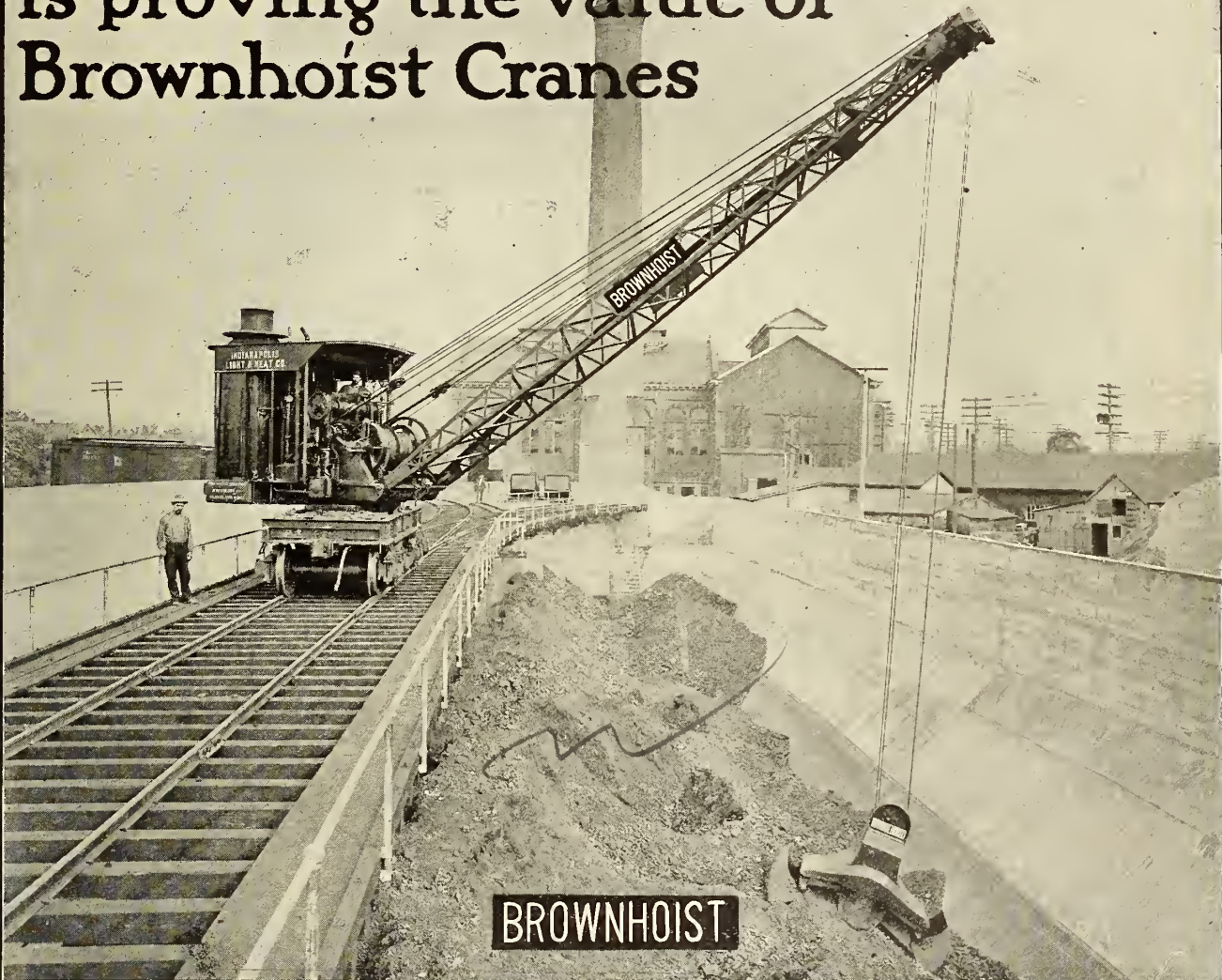
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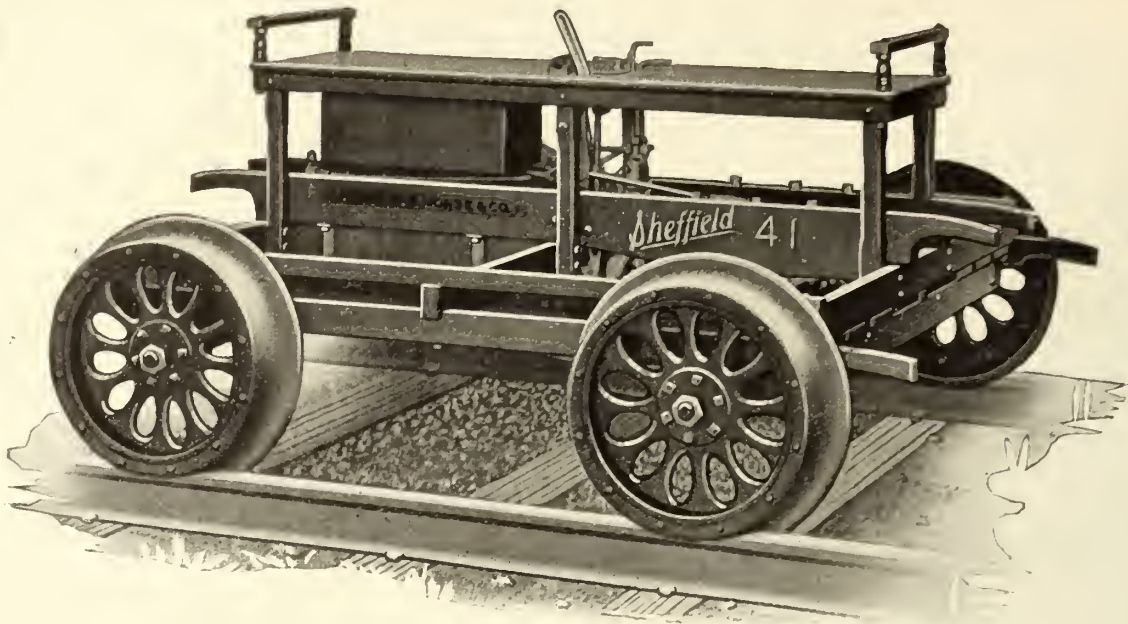
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**Speed 25 M.P.H. Either Direction.  
Weight 460 lbs.**

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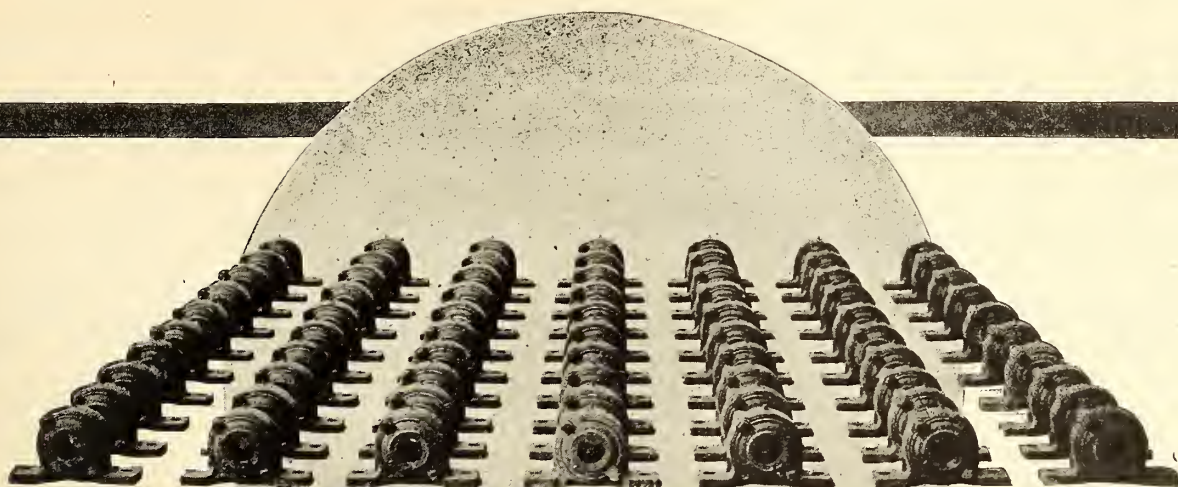
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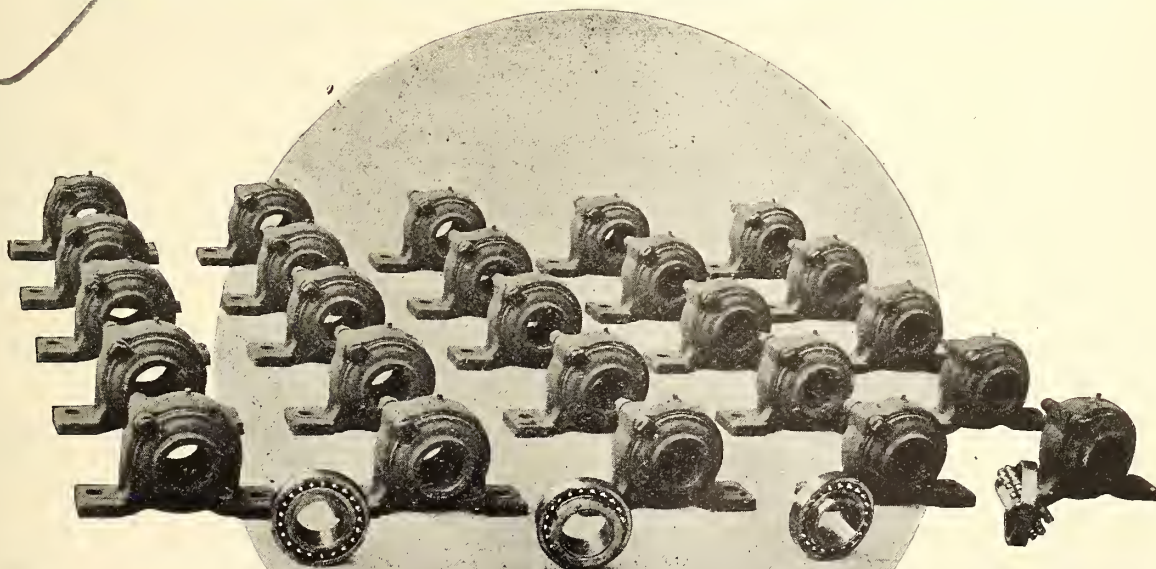
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PHILADELPHIA, PA.

The Reciprocating Track-Grinder.

#### THE TROLLEY SUPPLY COMPANY

CANTON, OHIO.

Trolley Retrievers, Catchers, Headlights and Street Railway Supplies.

#### WESTINGHOUSE ELECTRIC AND MANUFACTURING CO.

PITTSBURGH, PA.

Trolley and Catenary Construction Material.

We also handle electric passenger, freight, and express cars and locomotives of all types and descriptions.

Keep this list before you whenever you are in the market for equipment and supplies.

All engineering service without obligation. List will be continued in next issue.





# **"VIM"**

## **Mechanical Leathers**



### **"Double the Wear" Guarantee on Vim Leather Packings**

**OVER ANY OTHERS MADE**

There is a difference of 15 per cent or more between the Production of a Machine on which the Packings are giving Perfect Service and one on which the Packings should be replaced.

***Consider the following factors :***

- 1—Gain or Loss in Production ;
- 2—Gain or Loss in Power by Friction ;
- 3—Gain or Loss in non-leakage or leakage ;
- 4—Loss of service of Machine while Packing is being replaced.
- 5—Loss of Service of Machines and Labor due to idle press ;
- 6—Cost of Labor in replacing ;
- 7—Cost of Packing.

*"Double the Wear" Guarantee Cuts the Cost of  
the First Six Items in Half*

*Send Us Your Blueprints.*

*Orders Filled in 3 days.*



**MONTREAL**

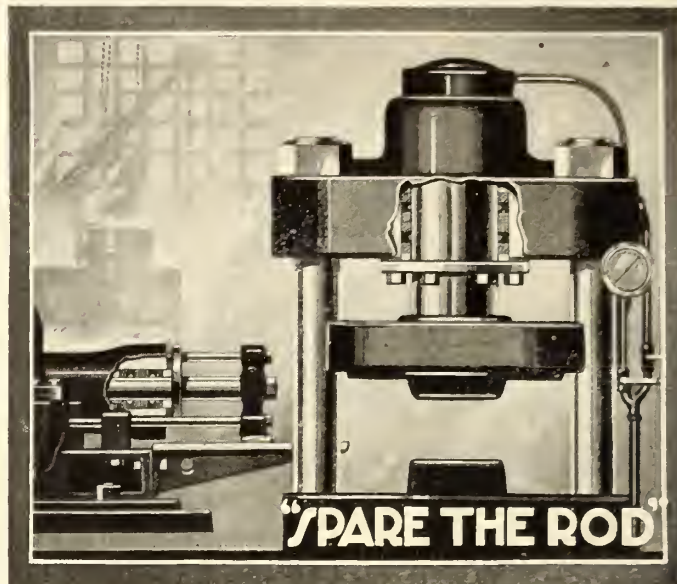
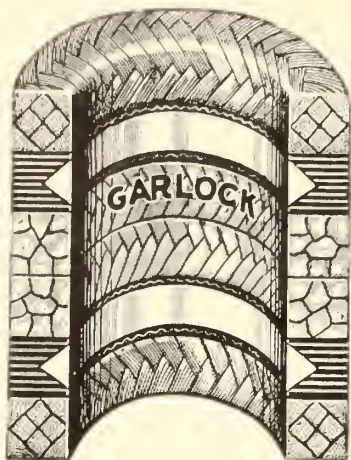
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# GARLOCK PACKINGS



## For General Hydraulic Service

In steel mills and blast furnaces, where pressures vary by thousands of pounds, and where rams and plungers are often exposed to grit and corrosion.

### Garlock Style No. 960

is guaranteed to give entire satisfaction. This combination is made up of braided copper, metal wedge and waterproof hydraulic rings. It will hold a pressure of 3000 pounds.

*Write for our catalog.*

## The Garlock Packing Company

Hamilton, Canada

### BRANCHES:

Montreal, Quebec	-	-	-	-	409 Shaughnessy Building
Toronto, Ontario	-	-	-	-	404 Continental Life Building
Winnipeg, Manitoba	-	-	-	-	Galt Building







## The United States Government

will release Steel for Steel Pulleys only when wanted for war orders.

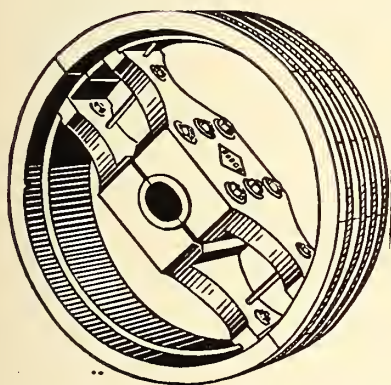
## Why not conserve on Steel Pulleys altogether?

Let your replacements and new equipment be made with

# DODGE

## Wood-Split Pulleys

KILL  
LAST AD.



The Dodge Wood-Split Pulley will do in your plant all that a Steel Pulley ever did, and it will do it at less cost!

Then, too, the Dodge Wood-Split Pulley costs less to buy than steel Pulleys of equal dimensions. Its surface prevents excessive belt slip, and there is less weight friction, consequently it uses less power than a steel pulley.

Considering the almost daily increasing cost of all equipment, you cannot do better than specify Dodge Wood-Split Pulleys when ordering.

We ship in all sizes from 4-inch diameters up to 6-foot diameters on the day orders are received.

All pulleys above 36 inches in diameter for special work are built with four arms. For heavy work and when so ordered, pulleys are bored to fit size of shaft and key-seated, compressing pulley hub on shaft over key, providing a superior and positive shaft fastening, and there is no tendency to throw the pulley out of truth with the shaft.

All orders receive immediate attention.

## Dodge Manufacturing Co., Limited

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City Shipping Department:  
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Branch Warehouse: 770 St. Paul St. West, Haymarket Square, Montreal





# GALENA OILS

HAVE NO EQUAL IN  
QUALITY, EFFICIENCY and ECONOMY

SOLE MANUFACTURERS OF  
Celebrated Galena Coach, Engine and Car Oils  
*LUBRICATION ON A GUARANTEED BASIS*

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ELECTRIC RAILWAY LUBRICATION  
A SPECIALTY

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Perfection Valve and Signal Oils

*Galena Railway Safety Oil*—Made especially for use in  
headlights, marker and classification lamps.

*Galena Long Time Burner Oil*—For use in switch and  
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avoiding smoked and cracked chimneys and crusted  
wicks.

*TESTS AND CORRESPONDENCE SOLICITED*

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Works

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Canadian Representative — Robert McVicar, 603 Shaughnessy  
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# CONDUIT PIPE FITTINGS

*Made in Canada*



TYPE A



TYPE B



TYPE F

In introducing to the trade C.G.E. Conduit Pipe Fittings, we desire to call particular attention to the following points, in connection with their manufacture:

All C.G.E. Pipe Fittings are made of pure metal, carefully selected to ensure proper tapping and threading, well-japanned on the outside and electro-galvanized on the outside.

The cover openings are ground thoroughly flat and screw holes well centred.

All covers are fitted to castings before shipment, to avoid possible drilling error or extreme shrinkage of porcelain.

In general quality, high finish and uniformity of product, C.G.E. Fittings compare most favorably with any other make on the market.

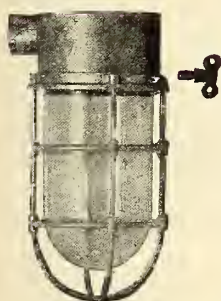
Every shipment is warranted to maintain this high standard—samples will gladly be forwarded free of charge, on request.

C.G.E. Fittings comprise all standard types.

C.G.E. Fittings are approved by the National Board of Fire Underwriters and by the Hydro Electric Power Commission of Ontario.

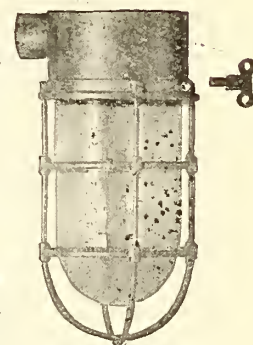
**—AND THEY COST LESS MONEY.**

Bulletin No. 618, describing these fittings will be sent on request to our nearest office.



TYPE V

Vapour, Gas and Dust Proof



TYPE VH

Vapour, Gas and Dust Proof

## CANADIAN GENERAL ELECTRIC CO. LIMITED

Head Office: Toronto. Sales Offices: Montreal, Quebec, Halifax, Sydney, Ottawa, Cobalt, South Porcupine, London, Winnipeg, Calgary, Edmonton, Nelson and Vancouver.





# 2000 ROOMS in the Canadian Pacific Rockies

Three Giant Mountain Ranges  
Making Fifty Switzerlands in One

*Between Calgary and Victoria, B. C.*

Distinctive hotels—each as picturesque as the scenery into which it fits—each with its special feature of glaciers, lakes, Alpine climbing, fishing, pony riding, swimming or golf. Luxurious mountain-guarded Banff Springs Hotel—restful Chateau Lake Louise, among the Lakes in the Clouds. Mount Stephen House at Field, under

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W. B. Howard, District Passenger Agent, Toronto



# War Output in Commercial Shapes

## Ingots

Square

8", 9", & 12"

Fluted

15", 18", 20" & 26"

Sand Cast Any  
Size.

## Blooms and

## Billets

Rolled

1 $\frac{3}{4}$ " to 6" Square

Cogged any size  
above rolled sizes.

## Forgings

Ship Forgings

Heavy Shafting

Locomotive Fr'g.

Electrical Work

Locomotive Axle

Car Axles

Miscellaneous

## Plates

High Carbon for  
Plows, Shovels,  
Harrow Discs  
Soft Centre  
Low Carbon

Any thickness and  
width up to 20"

## Castings

Locomotives

Cars

Electrical Work

Ship Castings

Rolling Mill

Steel Rolls

Miscellaneous

## Specialties

Draft Arm

Draft Gears

Truck Side Frames

Bolsters

Car Couplers

*We Specialize on High Carbon and Alloy Steels*

## Dominion Steel Foundry Co., Limited

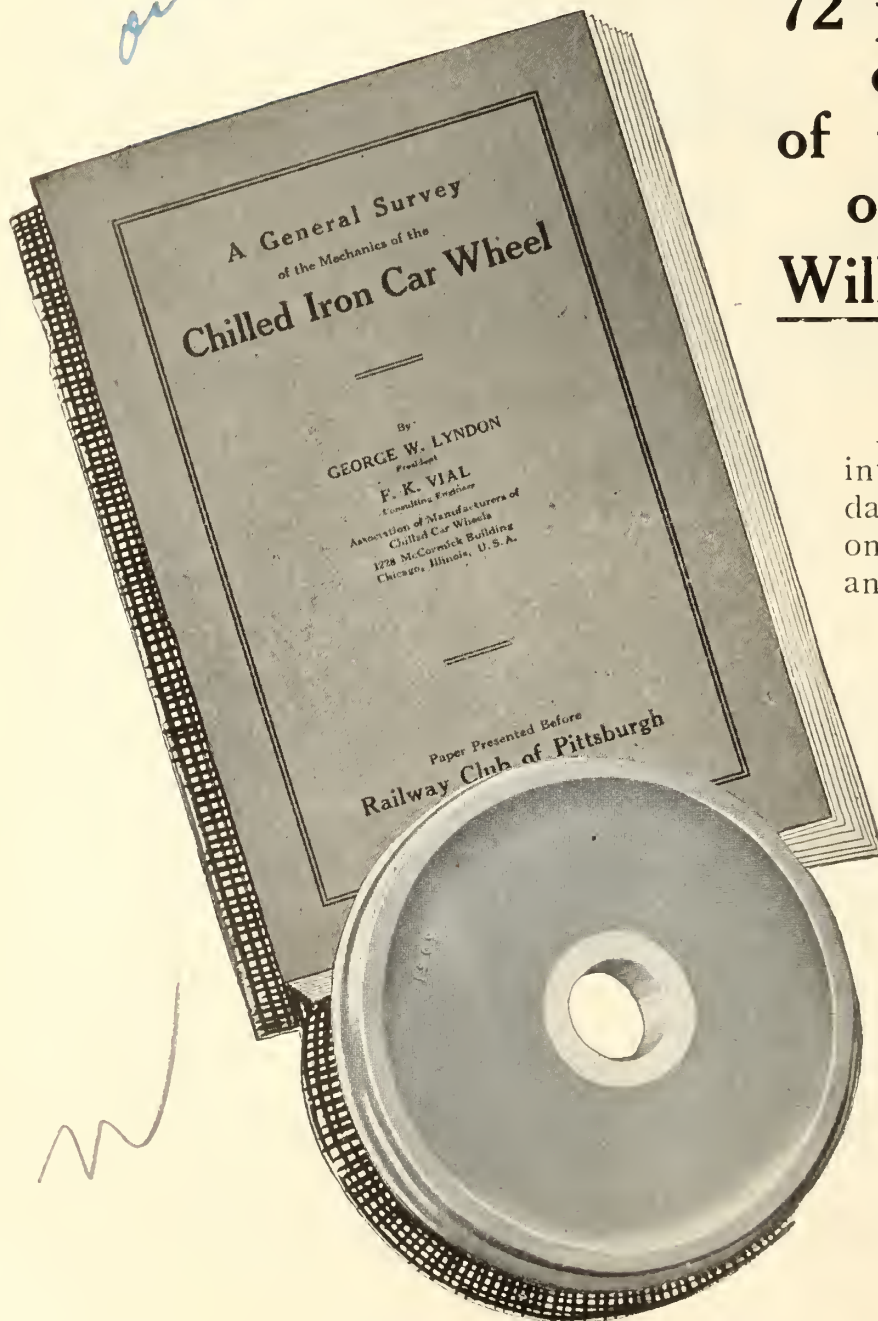
HAMILTON

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CANADA



# Here Is a Valuable Book for Railway Men



72 pages covering  
every phase  
of the mechanics  
of car wheels  
**Will Be Sent Free**  
upon Request

A veritable storehouse of interesting information and data—all with a vital bearing on operation and maintenance.

Among the thirty-three subjects covered by tables, graphs and discussions are: Areas of contact, the effect of coning, brake shoe loss, shoe pressure, flange pressure, gauge points, obliquity of traction, coefficient of friction as applied to shoe and wheel tread; and stresses developed by (A) vertical loads, (B) brake shoe friction, (E) axle pressure.

The above only suggests the scope of its survey—it is a compilation of authentic statistics and facts, stated, tabulated and discussed in proper sequence.

Send for it immediately; besides being instructive at first reading, it will become an invaluable daily reference book. It will be sent to you *without cost*.

**Association of Mfgrs. of Chilled Car Wheels**  
1228 McCormick Bldg., Chicago

Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day



# Why

## Good Men Leave



Hand-pumped cars make the section-men's work unduly laborious and unfit them for efficient efforts.

These men are naturally attracted to railroads which use motor-driven section cars.

The existing unprecedented shortage of labor demands the fullest use of labor-saving devices.

**MUDGE MOTOR CARS**  
will do much to solve your  
Labor Problems

# Why

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Mudge Motor Cars land your men at the point of work, fresh to start the day's labor.

Mudge Motor Cars enable your men to remain on the job until the last moment, when they are returned home without fatigue.

The proof that Mudge Cars satisfy is to be found in the great number of roads using them.

**MUDGE MOTOR CARS**  
will do much to solve your  
Labor Problems

# MUDGE MOTOR CARS



**Mudge & Company**

Railway Exchange,

Chicago, Ill.





*Your Car Signs are actually the first line of contact with your riding public — improve them,*

*use these illuminated signs*



Typical Keystone Type



Typical Hunter Type



Typical Keystone Type

They furnish an excellent inducement to ride, they advertise your service.

They make easy the re-routing of cars and the shifting of them from one barn to another.

They are complete in themselves. Parts are interchangeable. Uniform tension on Curtains. Curtains and mechanism re-

moveable. Curtain interchangeable in types of equal length. No tools necessary to change curtain. Easily cleaned.

*Write for complete data.*

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Monadnock Bldg.

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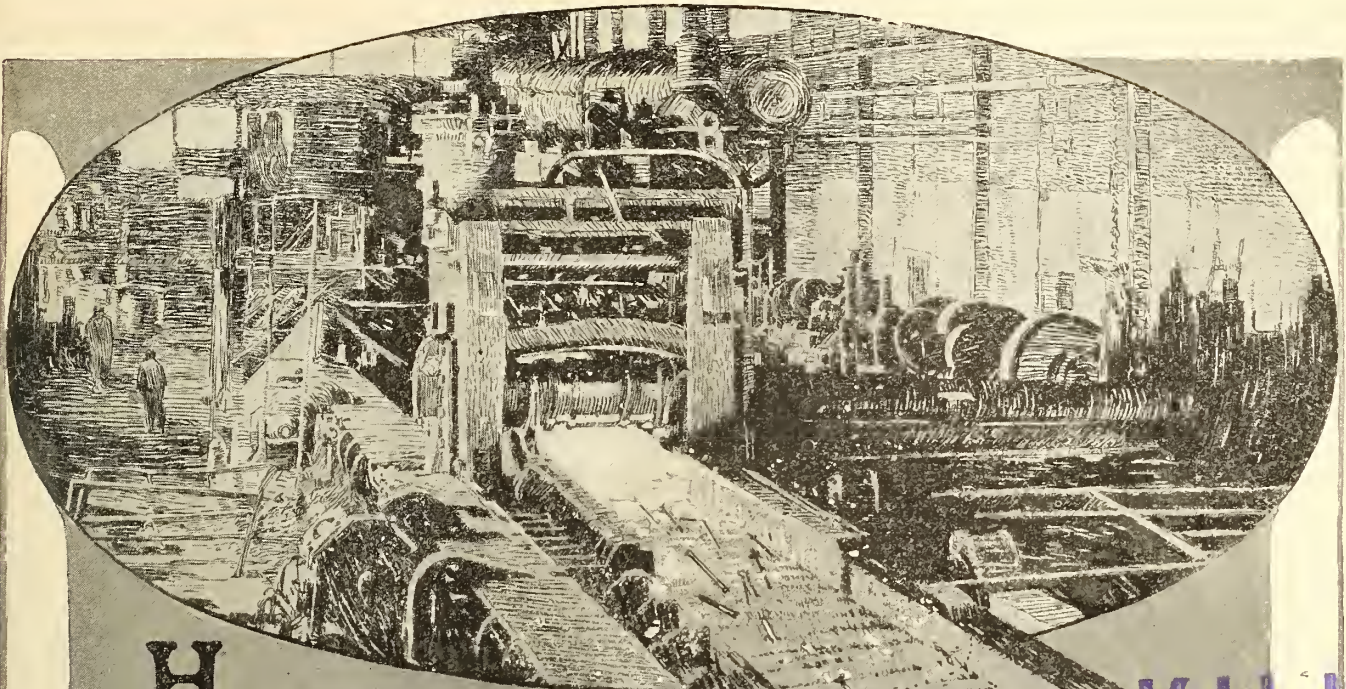
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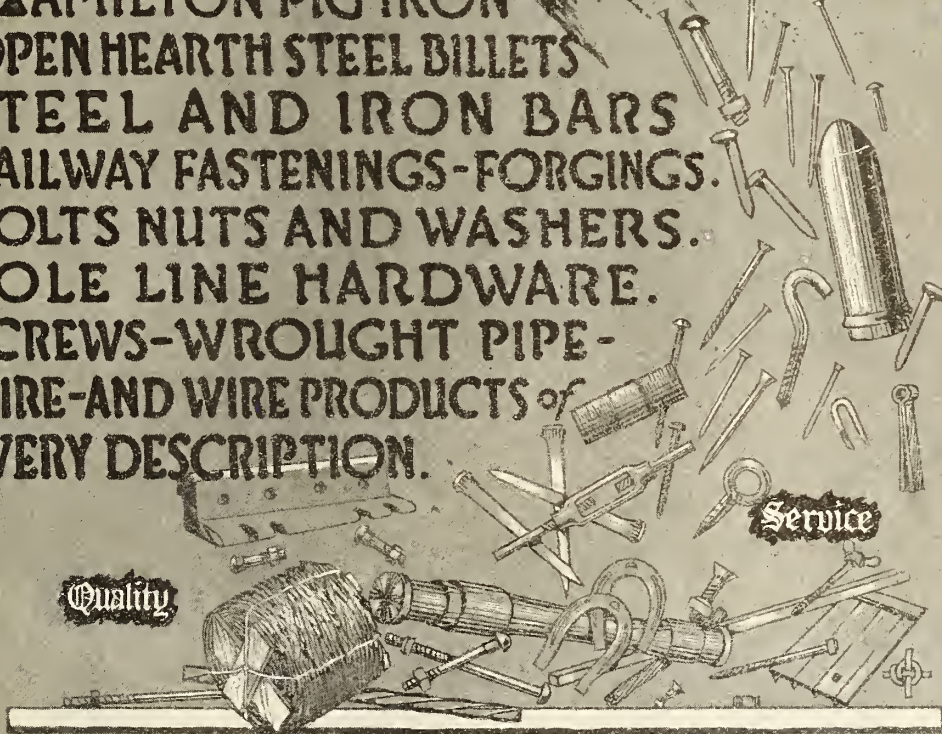
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**H**AMILTON PIG IRON  
 OPEN HEARTH STEEL BILLETS  
 STEEL AND IRON BARS  
 RAILWAY FASTENINGS-FORGINGS.  
 BOLTS NUTS AND WASHERS.  
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 SCREWS-WROUGHT PIPE-  
 WIRE-AND WIRE PRODUCTS of  
 EVERY DESCRIPTION.

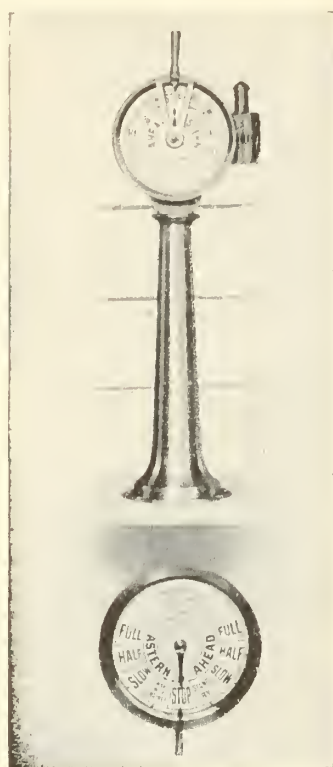
**KILL**  
 LAST AD.



THE  
**STEEL COMPANY**  
 OF  
**CANADA**

HAMILTON - LIMITED - MONTREAL



*Made in Canada*

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Telegraphs for Engine, Twin  
Engine, Stokehold, Steering  
and Docking.

Engine Room Indicators (Speed)

Engine Counters

Chadburn's (Ship) Telegraph Co'y, Ltd.  
Bootle, England

*Sole Canadian Agents*

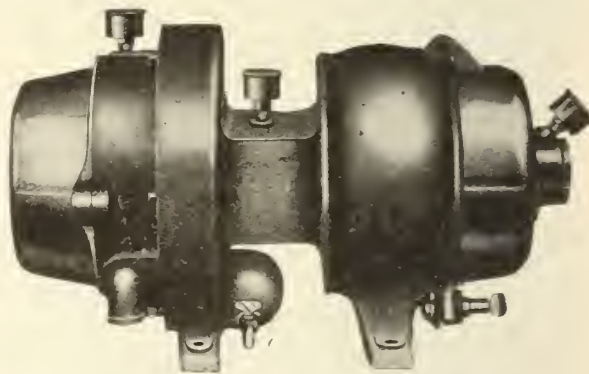
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Montreal

Winnipeg

Vancouver

## The "Taynold" Incandescent Electric Headlight

*Made in Canada*

An Incandescent Headlight that complies with every railroad requirement in every province of Canada. A headlight that has proved efficient and economical.

## Taylor & Arnold, Limited

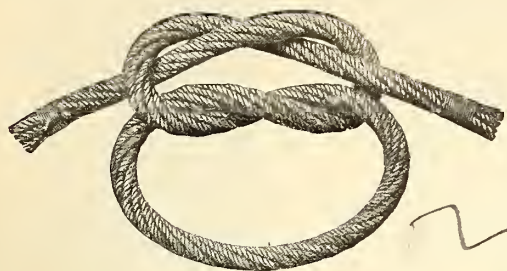
Manufacturers of Railway and Marine Specialties

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## "DURABLE" WIRE ROPE

Made in Canada

Replaces manilla for Stevedoring and other hoisting

**THE DOMINION WIRE ROPE COMPANY, LIMITED**  
 Toronto MONTREAL Winnipeg

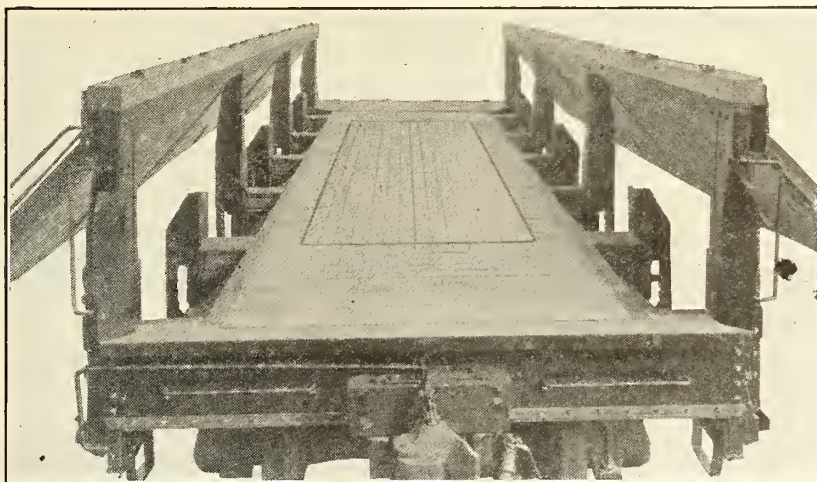
## Side Ballasting With One Side Closed

Canadian Government Railways Standard Ballast Car

25 per cent More  
Door Opening  
Area.

Less Stakes to Ob-  
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Material.

No Clogging of the  
Material or  
Boulders between  
the Plow and  
Stakes.



Dumps Clean and  
Quicker in any  
Material.

No more Breaking  
of Stakes or Cables.

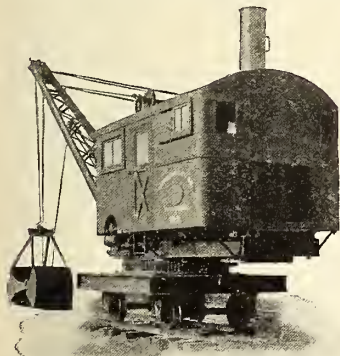
The Car that will  
Give Maximum  
Service with  
Minimum Repairs.

Write for Booklet No. 19 for further information.

—DESIGNED, BUILT AND PATENTED IN CANADA—

**The HART-OTIS CAR CO., Limited, MONTREAL**

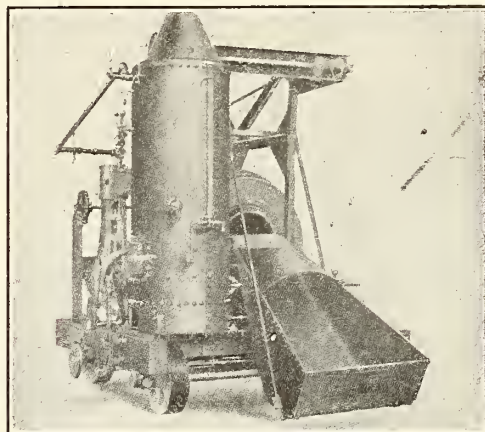
## "Industrial Works" Cranes



Increase Profits by  
Reducing Handling  
Costs

## "Ransome" Mixers

Concrete Carts—Buckets  
Wheelbarrows



Branch :  
108 Mail Building  
TORONTO

**F. H. Hopkins & Co**

Head Office :  
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# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

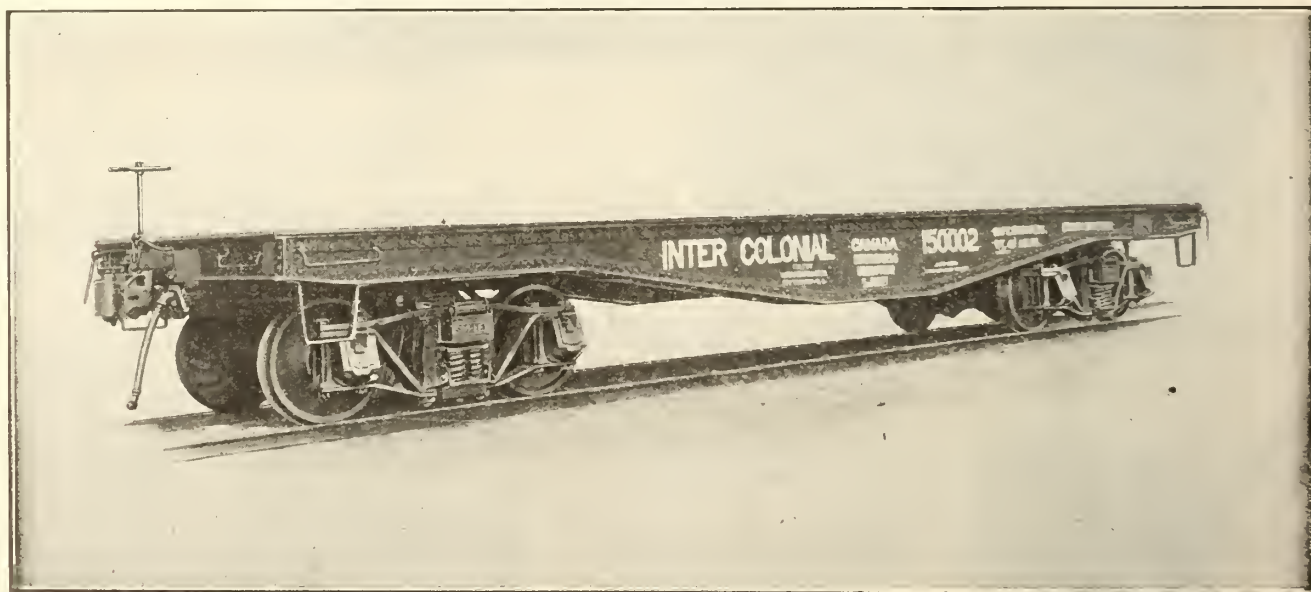
Also can supply forgings of all shapes and sizes made of ordinary or "Harmer" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

*For prices and particulars write to*

**Head Office - - - New Glasgow, Nova Scotia**

**Western Sales Office, Room 14, Windsor Hotel, Montreal**



75 on Special Pit Car For Canadian Government Railways.

## FLAT CARS, CABOOSES AND MINE CARS

We make a specialty of Flat Cars, Caboose and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

## Eastern Car Company, Limited

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**Montreal Office, Room 14 Windsor Hotel**



## Don't Work a File Past Its "Efficient" Point

Throw it away. It is cheaper to buy a new file than to waste time and labour with a dull one.

The "Famous Five" files give long efficient service because they are accurately cut and properly hardened.

They are :

**Kearney & Foot    Great Western  
American    Arcade    Globe**

*Made in Canada by*

**The Nicholson File Company**  
PORT HOPE                      ONTARIO

**50  
YEARS  
IN THE  
BUSINESS**

**OVER  
60,000,000  
FILES  
A YEAR**

## Port Arthur Shipbuilding Co., Limited

Port Arthur, Canada

*Designers and Builders of*

**STEEL SHIPS — BOILERS — ENGINES, Etc.**

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

**Dry Dock — 700 ft. x 98 ft. x 16 ft.**



PLANT AT PORT ARTHUR, CANADA

In Stock for Immediate  
Delivery

Several 1st Class, New

**CLAM SHELLS**

1½ and 2 yards.

**4 HOISTING ENGINES**

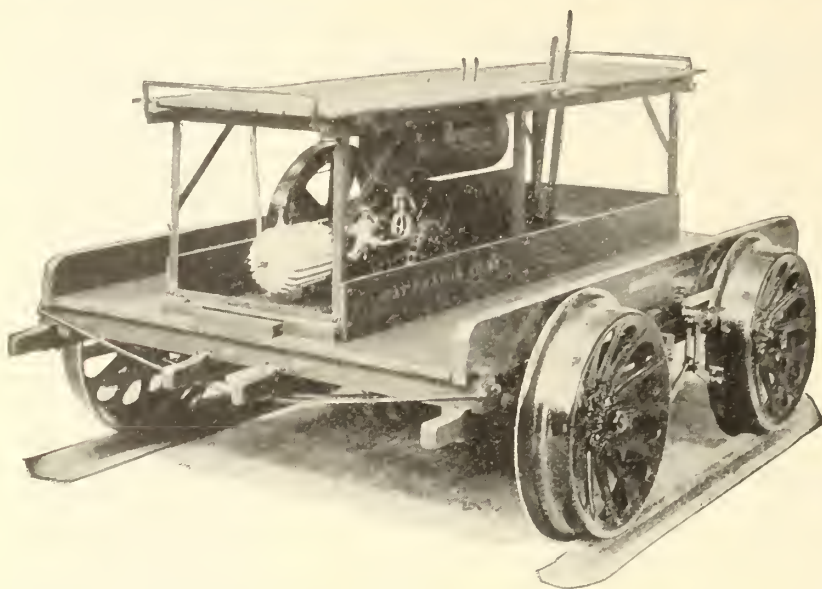
8¼ in. x 10 in.—with  
Boilers.

Head Office and Plant

**Port Arthur, Ontario**



# Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

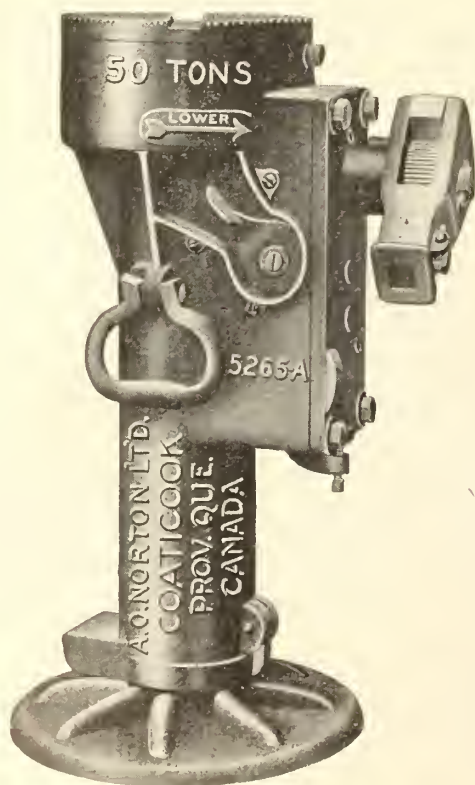
This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

## Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.



# Norton Jacks

For all Classes of Service

## 10 to 100 Tons Capacity

In Stock for Immediate Shipment.

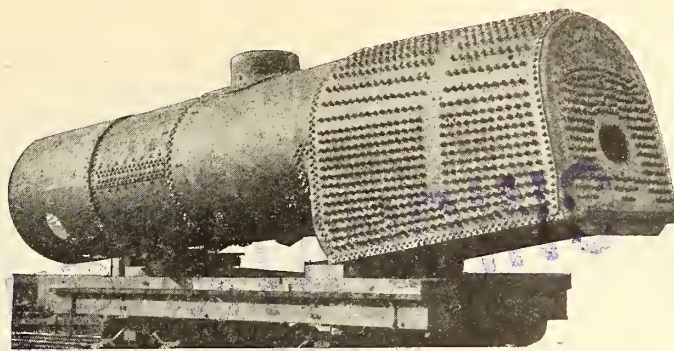
*Send for Illustrated Catalogue No. 29.*

## A. O. Norton, Limited

Coaticook, Prov. Que., Canada

Stock Carried by Canadian Agents: MUSSENS LIMITED  
Montreal Toronto Winnipeg Cobalt Calgary Vancouver





## It is an Established Fact

That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

The Flexibility in the bolt serves to accommodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefulness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintenance.

*In use on all the prominent railroad systems of Canada.*

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.

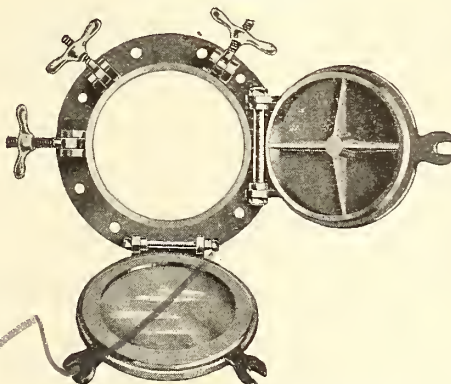
## Marine Specialties

**Marine Pop Valves**



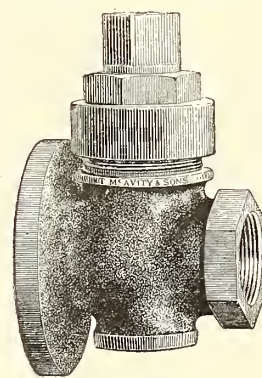
Single or Twin Type

**Port Lights**



Brass and Iron—storm door open

**Marine Cocks**



Iron and Brass  
Flanged and Screwed

Manufactured by

**T. McAVITY & SONS, Limited**

Wholesale and Retail Hardware  
Brass and Iron Founders

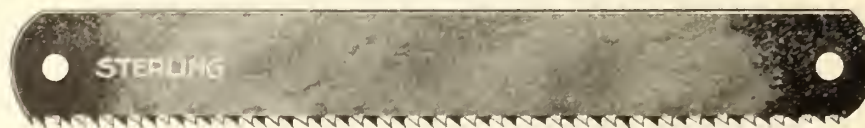
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Established 1834  
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Codes, A. B. C. 4 and 5 Editions

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# HACK "STERLING" SAWS



A combination of "STERLING" Hack Saw Blades and Power Hack Saw Machines will give excellent results, due to the high grade material and skilled workmanship.

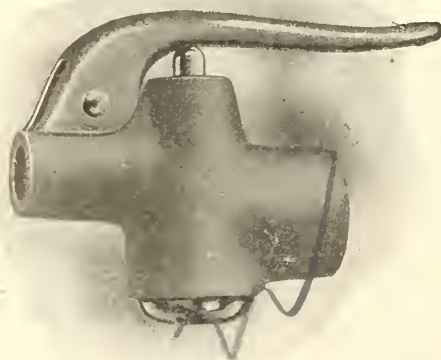


*Sterling*  
HIGH SPEED POWER SAW

Our aim is to give our trade the very best, and thus give full value for every dollar invested. They are worth a trial.

Write for particulars.

Manufactured by  
**Diamond Saw and Stamping Works, Buffalo, N.Y., U.S.A.**



## LESS AIR WASTE

USE THE "BLOW GUN"  
FOR CLEANING

The "Blow Gun" is a simple little cleaning nozzle, with the positive control valve right where needed—at the jet.

**No leakage, no trouble, no strong spring to wrestle with.**

Blow out your motors and clean off your machine tools with compressed air and the "Blow Gun".

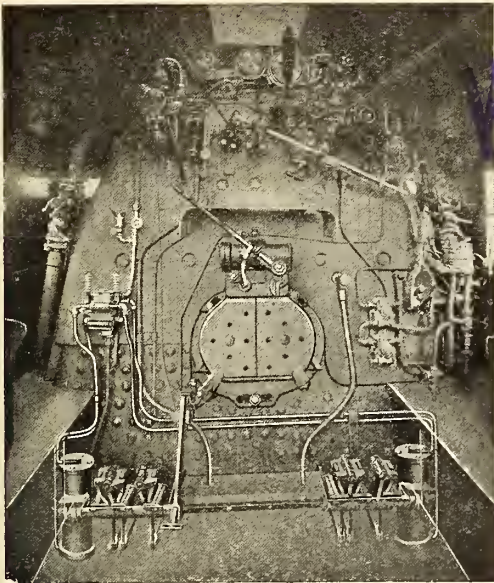
**Canadian Ingersoll-Rand Co., Limited**

General Offices, Montreal

BRANCHES: SYDNEY, SHERBROOKE, MONTREAL, TORONTO, COBALT, TIMMINS,  
WINNIPEG, NELSON, VANCOUVER







Franklin Power Grate Shaker keeps the fires clean.

## IS IT TRUE?

"The average engine is in actual revenue operation four hours and nineteen minutes out of the 24 hours."

This was said four years ago.

You know whether it is true to-day.

If true now or nearly true—lose no time in putting Franklin Steam Grate Shakers on all your engines to cut down the ash pit time.

5 minutes dumps a fire, 15 or less cleans it with the Steam Grate Shaker.

You know how one brisk operation speeds up the whole terminal.

**Franklin Railway Supply Co. of Canada, Limited**

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## A Firm, Dry Roadbed



is one of the most important factors for safety. Consequently a good drainage system is necessary to eliminate the soft spots.

## PEDLAR'S "PERFECT" PERFORATED DRAINS

ARE LIKE SPONGES IN THE ROADBED

They keep the track always dry and firm. Made in all sizes from 8 to 36 inches inclusive from standard heavy gauge Toncan Metal—the metal that successfully resists corrosion.

## THE PEDLAR PEOPLE LIMITED

(Established 1861)

Executive Office and Factories, OSHAWA, ONT.

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TORONTO,

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WINNIPEG,

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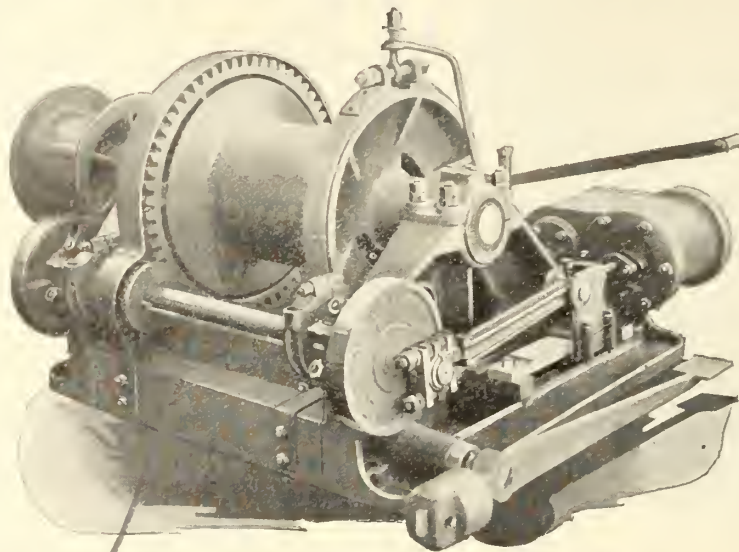


# "BEATTY" DECK MACHINERY FOR SHIPS

The illustration shows the Winch generally used on the ships being built in the United States.

A certain proportion are fitted with two Winch Heads, Extended Shafts and Outboard Bearings.

One of several types we are producing in quantities.



*8 1/4 x 8 Single Purchase, Throttle Reverse Deck Winch.*

Cargo Winches  
Warping Winches  
Ash Hoists  
Anchor Windlasses  
Also  
Hoisting Engines  
Electric Hoists  
Derrick Irons  
Clamshell Buckets  
Send us your inquiries.  
We will quote quickly.

**M. BEATTY & SONS, Limited**  
WELLAND.

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# THERMIT

## The Only Reliable Process for Welding Heavy Sections

**T**HIS explains why railroads and steel mills used over one million pounds of Thermit in 1917. Also why 95% of the railroads in the United States and Canada having over 10 locomotives, use Thermit for welding frames and all heavy sections.

There are few machine parts which are subjected to greater strains or more severe shocks than a locomotive frame or a blooming mill pinion. Yet Thermit welds on such parts are being made every day and **STAND UP IN SERVICE FOR YEARS.** The reason for this is that, unlike ANY OTHER WELDING PROCESS, the steel to make a Thermit weld is produced **IN BULK** at a temperature of

5000° F. Furthermore, results are not dependent on the individual skill of the operator.

We have ample proof for all our claims and our long list of satisfied customers who come back week after week, month after month, and year after year for more Thermit is a never ending testimonial to the efficiency of the Thermit Process.

Remember that Thermit should not be confused with either oxy-acetylene or electric welding. It stands in a class by itself. It welds sections which cannot be successfully welded by any other method.

Write for Pamphlet 2144.

## METAL & THERMIT CORPORATION

(Successors to Goldschmidt Detinning and Goldschmidt Thermit Co.)

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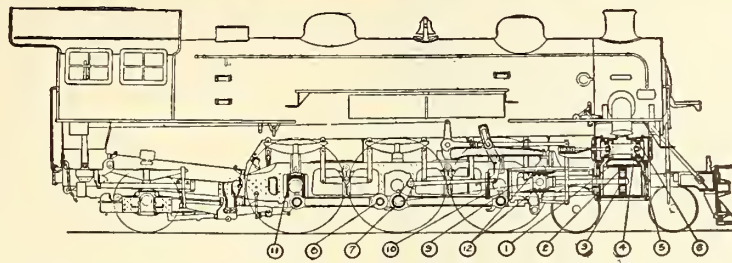
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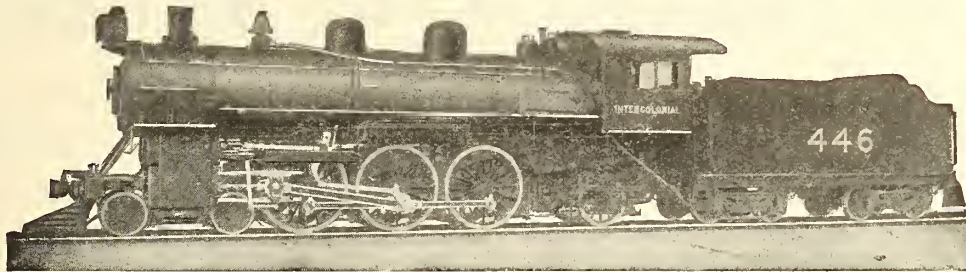
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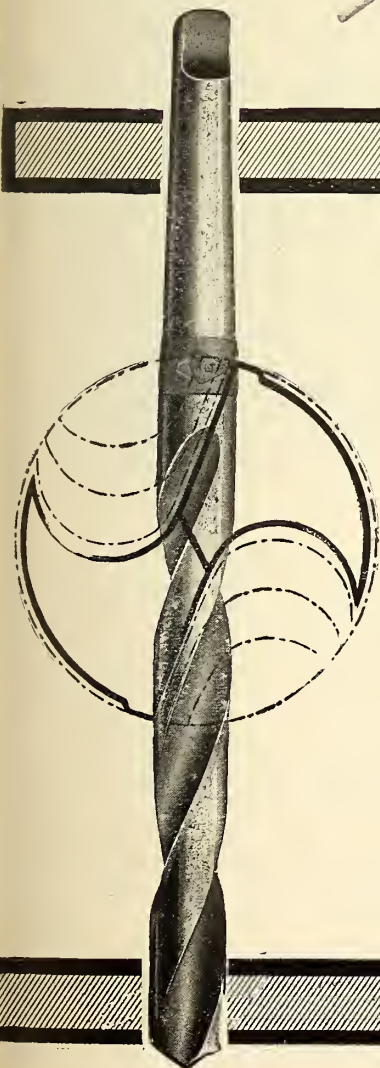
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# Canadian Railway and Marine World

August, 1918

## Light Railways Along the British Front at Close Range.

By Robert K. Tomlin, Jr., War Correspondent of Engineering News-Record.

The primary function of the light railway is to deliver ammunition, troops, rations and supplies from standard gauge railheads to points near the front, and by so doing relieve the highways of the enormous burden of traffic which they used to carry. The accompanying sketch plan, fig. 1, which is purely theoretical and does not convey information as to any actual location on the ground, will show the general relation to one another of the parts of a light railway system for the battle-front, and the area in the rear.

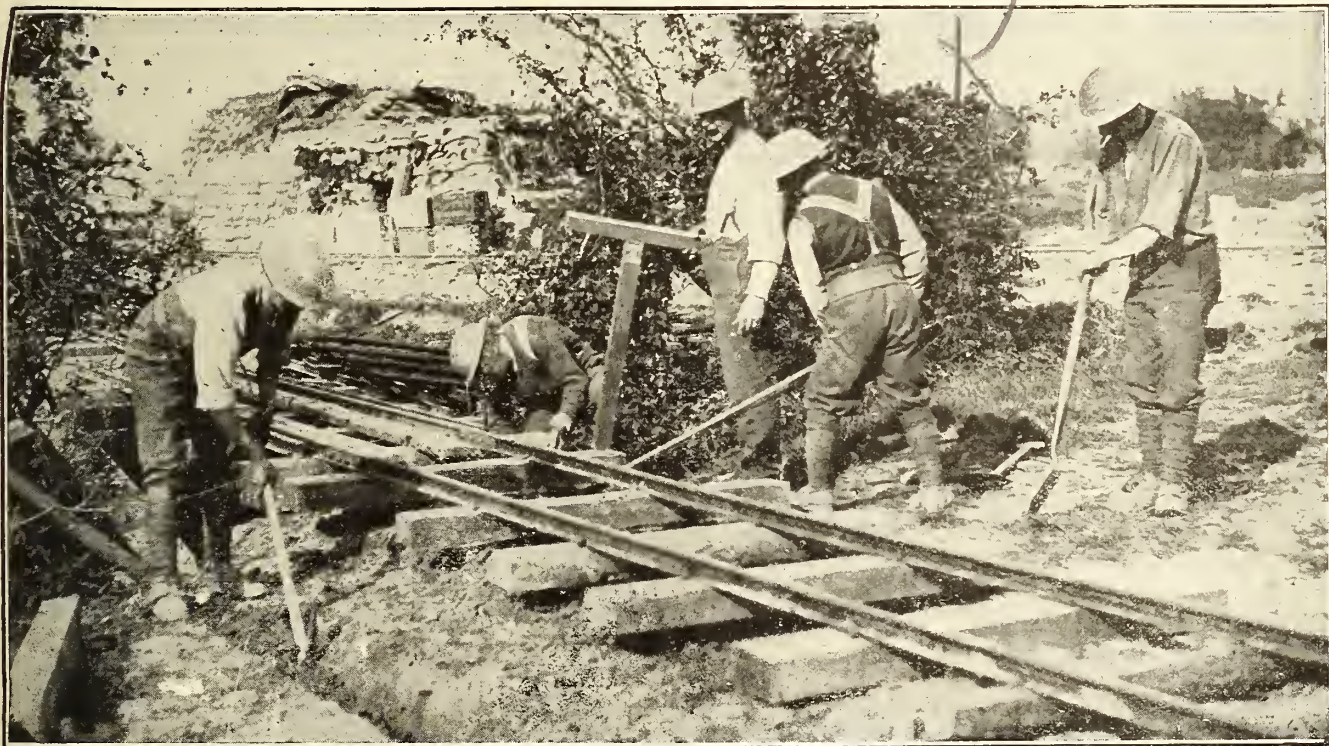
In the extreme forward section, rope-

munition, ordnance and supplies.

Fig. 1 shows also the loop system and cross connections which are characteristic of British light-railway practice. The idea is to have the loaded cars move forward on only one side of the loop, and the empties return on the other. Even where turnouts are built, the British endeavor to prevent even short haul train movements in opposite directions on the same side of a loop, and during my trip over the lines a non commissioner officer in charge of a gang building dug-outs was called to account for running a light push car for-

of track were recorded, while during the Cambrai "show"—every big engagement is called a "show" over here—a Canadian lieutenant colonel and his men laid 6 miles of track in 60 hours.

Repair work for all British armies at the time of my visit was involving the replacement each week of from 1,500 to 2,000 ft. of track broken by shell fire. This is an almost insignificant percentage of the total. In one army, however, 95 breaks in one day, due to shelling, were recorded, but this army has a greater track mileage than any other.



*British Official Photograph*

Fig. 4. Light railway construction at the British Front.

ways or push trolleys may be provided, although many situations demand the packing of ammunition and supplies on the backs of animals or men. Where possible, spurs are run out to artillery batteries, to which ammunition is delivered, one carload at a time. Further to the rear will be noted the various dumps for ammunition and stores. The designation R. E. on the sketch means Royal Engineers, and when used in connection with supplies refers to such material as timber, sand bags, wire mesh trench revetment, barbed wire, corrugated iron covering for dugouts and huts, duckboards, etc. At the extreme left the letters C. C. S. signify Casualty Clearing Station, to which the wounded are brought back, on light railway cars.

The layout at the railhead, fig. 2, provides for the transshipment of material from the standard gauge railway to the light railway, for the assembly of cars into trains, and for the storage of am-

ward on the track over which our train was making the inbound journey.

Although I saw some short sections of double track, the general practice here is to construct single track only, thus offering a smaller target for shell fire and cutting down the time needed for repair work if the track should be hit.

The mileage of light railway track per mile of battlefront varies within wide limits. In a quiet sector it may be as little as five miles, while in territory where there is much activity there may be a mileage of 10, 12 or even more per mile of front. A single track light railway weighs about 72 tons a mile for rail, connections and ties, while, as a rough average, 800 tons of ballast a mile is necessary, unless the ground is unusually bad. I was told that the grading, laying and ballasting of one mile of finished track requires, normally, about 2,400 man-days of labor. On some speedier work 1,760 man-days of labor per mile

At the head of the organization which is assigned to light railways is the Director of Light Railways (D. L. R.) who reports to the Director General of Transportation (D. G. T.). A mere listing of the various rungs in the organization ladder, however, would fail to convey an adequate idea of its real character. It is only when you circulate through the headquarters offices, go out on the line among the men, and see the splendid work they are doing, that you obtain a true appreciation of the light railway forces. Both British and United States officers are all railway specialists, hailing from every corner of the world—men who have built and operated railroads in Great Britain, the U.S., Brazil, Canada, the Argentine, India, Mexico and elsewhere. The U.S. force on one section of the line, for example, had been recruited, whole companies at a time, from such roads as the Boston & Albany, Maine Central, New York, New Haven & Hartford, and Boston



& Maine. The commissioned officers in these various companies, as a rule, came from the same railways as the enlisted men.

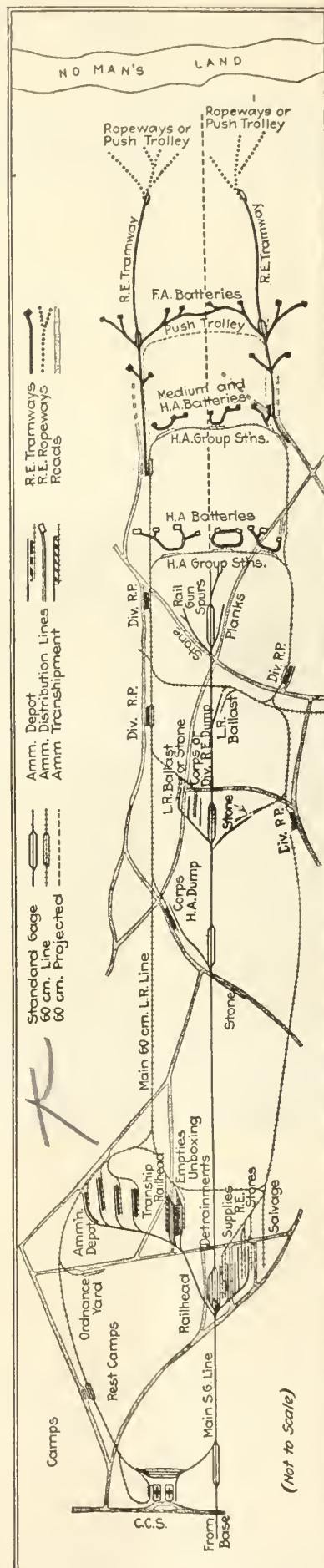
Having spent most of my time among officers and observed the splendid esprit de corps which prevails over the whole front, I was interested in getting the enlisted man's point of view, and during a stop at a siding I went up forward for a chat with the locomotive man and the brakeman of our train. One, I found, had served on the B. & A., and the other on the N.Y., N.H. & H. "Quite a difference between this job and the one back home on the B. & A.," I said to the locomotive man. "What gives you the most trouble in running one of these tractors?" He didn't hesitate a minute. "She's off the iron a little more than I like." Here was a man, who, by night or by day, nosed his trainloads of ammunition or supplies up into the danger zone, where high explosive shells, gas attacks and bombs from airplanes were all part of the day's work, and his chief concern was not of these things, but of locomotive derailments, of being "off the iron," of delays which would slow up deliveries. In answering my question, he had, unconsciously, given me something for which I had been blindly groping—a crystallization in words of the spirit which animates the light railway organization.

In the location of light railways no hard and fast rules can be laid down. The basic principle is that the line must follow the contour of the ground as closely as possible, although sometimes a trestle is built (fig. 3). Heavy cuts or fills must be avoided. It follows, therefore, that a light railway line, particularly near the front, contains a good many curves; the sharpest are of 30m. radius. An effort is made to keep the ruling grade below 2½%, but in some places 4% grades are required by local conditions.

As to proximity to the front, practice varies considerably also. In very quiet sectors, however, the lines may run as far forward as the reserve trenches. In others, single track known as "trench tramways" are used. Location depends upon the ground and the conditions with regard to observation by the enemy.

Fig. 4 gives a good idea of how a light railway line is constructed. Rail connections are made by fish-plates and bolts, four bolts a joint. A radical change in practice has gone into effect recently, involving the substitution of wood for steel ties. I traveled over a great many miles of line in the Flanders area, and close contact with the all prevailing mud of that region indicated quickly the reason for providing as large a bearing area as possible for the track. The wood ties are about 4½ ft. long, 7 in. wide and 4½ in. thick. When steel ties were used, the track sections, built up complete with ties, were delivered and laid in lengths of 5 m. The change to wooden ties, however, makes it necessary to spike down the rails in the field. I passed over long sections of old construction when wooden ties had been inserted under the rails between pairs of the steel ties.

Much of the ground in the northern areas occupied by the British armies is a regular morass, so that the drainage of the light railway roadbed is an extremely important part of the construction. Ditches on one or both sides of the line are universal. In looking over the weekly reports in a U.S. captain's quarters, I found a record of a 17-ton locomotive which had toppled over on its side when standing still, due to settlement of the saturated ground on which the track was laid.



The relation of various parts of a light railway system.

The construction and maintenance problems are further complicated by the scarcity of good ballast. The most easily obtainable material is the chalk which is characteristic of this region, and large quantities of it are employed for track ballast if nothing better can be had (fig. 5è). The chalk, fairly satisfactory in dry weather, "turns to cream when it rains"—to use the phrase of one of the officers who was discussing its properties with me. Another objection to chalk ballast is that it shows up prominently in aerial photographs and offers a good target for artillery fire or bombing. Back of one of the U.S. railway camps is a pit from which sand is being taken for track ballast, and it is proving very satisfactory. In this area the old chalk ballast is either being removed and replaced by sand, or else covered with sand. Another material for ballast is what is called "mine earth," but this is to be had only in places near the coal mining regions. It is a waste product, looks like shale, and serves fairly well as ballast. Traveling over certain sections in northern France and Belgium, I looked down between the rails and read there the tragedy of cities that are no more, for brick and stone, all that remains of the buildings in what used to be towns near the front, are used to a limited extent near destroyed villages for ballasting light railway tracks. A government permit is required for the removal of this debris.

In spite of all the difficulties of construction and scarcity of materials, the track, in all of the regions where I traveled, is in very good condition. Derailments occur, of course, but with the comparatively light rolling stock used it is not much of a job to get an engine or tractor back on the rails. Rounding a curve at Ypres, where the track makes sharp turns to dodge the ruins of buildings, our petrol tractor, a 20 h.p. machine, was derailed. With a few wood blocks and steel bars, carried by every train, we got it quickly on the rails. Another time, when our tractor became unruly and jumped the track, it was lifted bodily and replaced by a working crew which happened to be near—just a case of "Off agin, on agin, gone agin—Finnegan."

Maintenance is consolidated with construction in the extreme forward areas, while farther to the rear separate gangs are assigned to these two duties. The chief task is the relining and reballasting of track—for some of the very muddy areas are great ballast eaters—and the repair of breaks due to shelling. The maintenance crew must also keep the drainage ditches and culverts clear. During periods of frost and thaw a great deal of resurfacing is called for, and at such times the chalk ballast is particularly troublesome. Repair of track broken by shell fire falls to the lot of the maintenance or construction gang, according to whether the damage is at the front or rear. I was told at headquarters that for all the British armies the maintenance work requires about 14 men a mile of track. Breakage due to shelling at the time of my visit varied between 1,500 and 2,000 ft. of track a week for the entire front.

The hauling of light railway trains is done by several types of locomotives. In the rear area three makes of coal burning steam locomotives predominate. Near the front, where smoke and steam would draw enemy artillery fire, petrol-electric and plain petrol tractors do the work. Two of the types of steam locomotives weigh about 14 tons each and the third 17 tons. The 40 to 45 h.p. petrol-electric, or P. E., as it is called, weighs 6 tons. The light



petrol tractor, 20 h.p., weighs somewhat less than 2 tons. There is, in addition, a tractor weighing about one ton, which consists of a small auto engine on a special truck; it is used for inspection trips or for hauling single carloads near the front. The table printed elsewhere in this article gives the load test on different grades for the several types of machine.

The steam locomotives, on account of their visibility, as before noted, and also

lighter and more bulky material, such as R. E. stores, the load per car may be only 5 or 6 tons. With troops the load per car will average about 3 tons. For perishable rations covered box cars are available. Then, too, there are small 4-wheeled wagons, 8 ft. long, for loads of  $3\frac{1}{2}$  tons each. For the hauling of heavy ordnance special trucks have been developed.

Hospital cars (fig. 7), fitted up with

8 and 9), for lifting derailed locomotives and tractors, and special groups of four or more cars, each 20 ft. long and 5 ft. 4 in. wide, constituting machine shops on wheels (fig. 10). The equipment in the latter includes drills, grinders, hack-saws, lathes and planers. These tools are operated by power from one of the standard petrol-electric tractors, which, if the occasion should demand, can haul the machine shop forward or backward. The shop on wheels remains in one location, however, unless it is decided to change the light railway base. The sides of these machine shop cars are hinged at the bottom and open outward, forming a platform extension on each side. Where the repair work is too heavy or complicated to be handled readily in the field, the rolling stock is shipped to a large central repair plant, thoroughly equipped with machine tools, spare parts and appliances of every sort for rehabilitating engines or cars suffering from shell shock or other ailments incident to light railway operation. We had intended to make a detour in our route for a visit to this central



British Official Photographs

Fig. 2. Layout at standard gauge railhead providing for trans-shipment to light railway cars.

the desirability of running them on track which is fairly well aligned, are reserved principally for the rear area haulage, while the petrol-electrics, and particularly the lighter petrol tractors, are for use close to the front lines. The petrol-electrics are equipped with internal combustion engines and generators, the motors being mounted directly on the axles. As indicated in the table, they are for heavier work than the plain petrol machines.

I asked one locomotive man about the relative operating difficulties with the light and heavy rolling stock. He replied, in substance, that the P. E.'s and steam

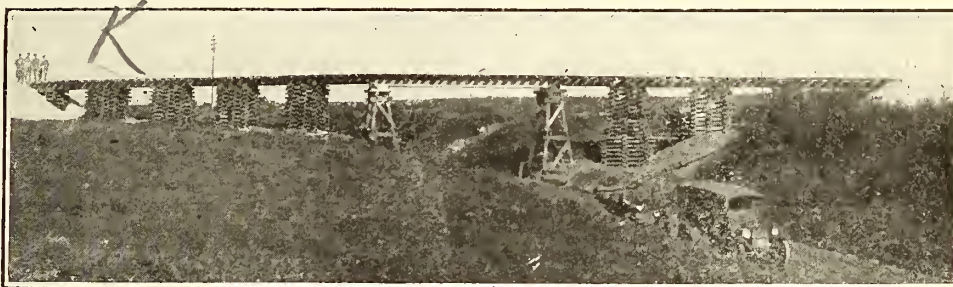
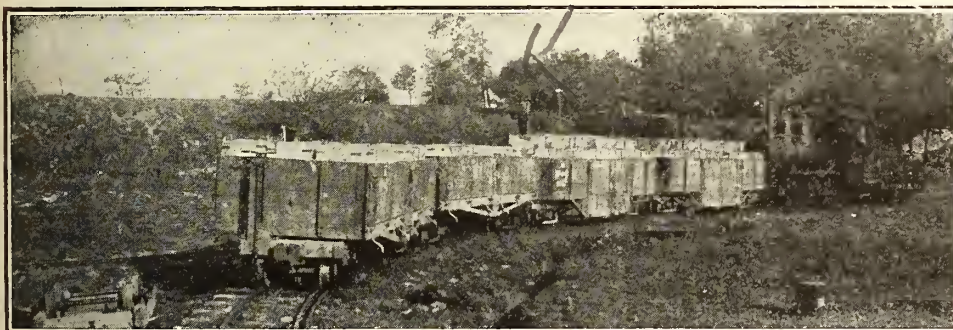


Fig. 3. Trestle on a light railway. British official photograph.



British Official Photographs

Fig. 6. Gondola cars of the flat-bottom and well-bottom types are used in large numbers.

locomotives, if derailed, dug down into the roadbed, and, on account of their weight, came to a quick stop. The lighter machines, while easier to handle in case of accidents, generally ran farther off the rails.

On the petrol-tractor trains the crew consists of two men, driver and brakeman. With steam haulage, a third man, the fireman, is required. The maximum speed allowed is about 8 miles an hour, with a limit of 3 miles an hour at grade crossings.

A great many types of cars are used in light railway operation, depending on the kind of material to be hauled. The bulk of the freight handled comes under the following classifications: Ammunition, timber, coal and coke, rations, ballast, R. E. stores, salvage, stone for highway maintenance, with troops going to or returning from the front. In one army which I visited about a dozen different kinds of car were in service. The prevailing car (fig. 6) is a gondola about 20 ft. long and 5 ft. wide, made in both the flat and the well types. These cars can carry about 10 tons of ammunition, but with

plant, but our schedule was so full that time did not permit an inspection of this very important feature of light railway work.

The information concerning light railways which I had picked up in scraps of conversation here and there before my visit to the front had led me to believe that these systems were operated to some extent on the go-as-you-please plan. An inspection of the field control posts and central train despatching offices in every army on the British front quickly dispelled this impression. Traffic is closely regulated, and the system in force allows the A. D. L. R. or his assistants to know at every hour of the day where each loco-

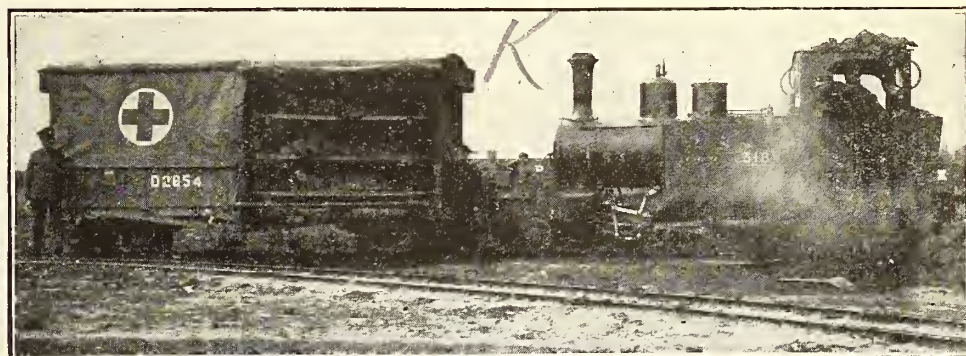


Fig. 7. The wounded are transported by light railways in special cars. British official photograph.

banks of berths for carrying the wounded, are included in the rolling stock. I was told by the Assistant Director of Light Railways in one army zone that under normal operating conditions he considered 75 tons a 10-ton car a week a fair working average.

In addition to the car types enumerated, there are wrecking cars and cranes (figs.

motive, tractor or car is, whether it is loaded or empty, what kind of freight is being hauled, and scores of similar details. In fact, one of our U.S. railway operating detachments has gone to the length of preparing a timetable for its section. The operating scheme in all of its main features is standardized along the whole front. From the nature of

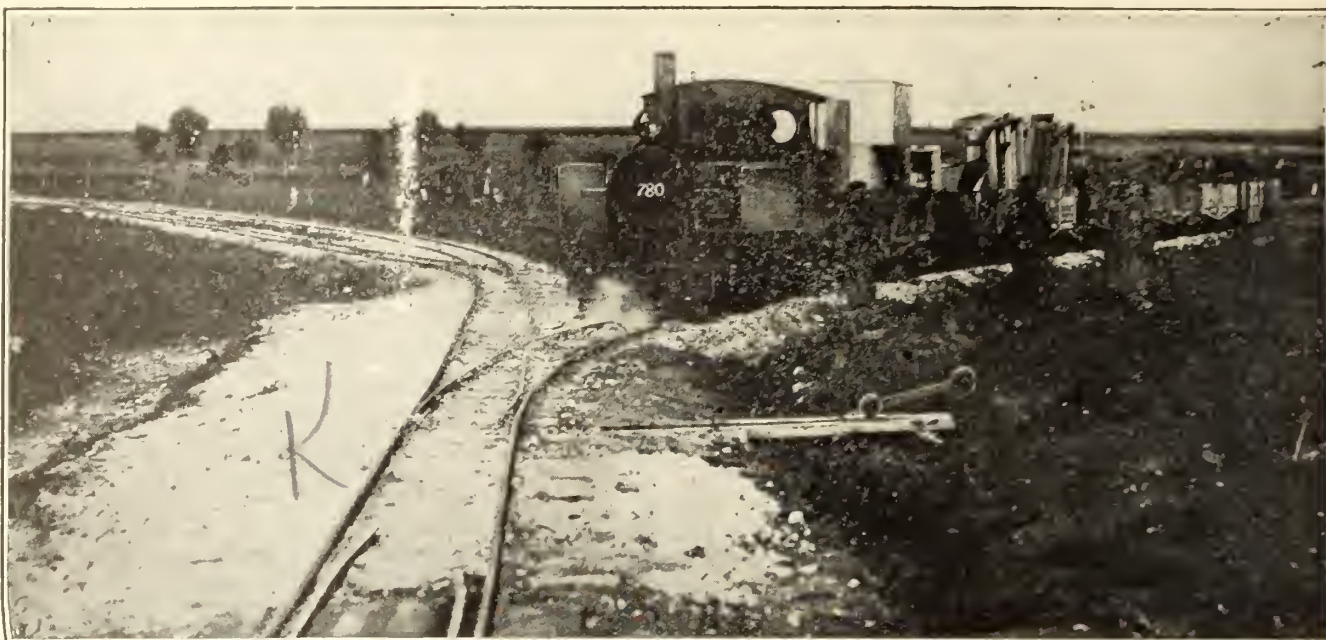


things operation in the forward zone is largely at night.

In every army zone there are a central control station near A. D. L. R. headquarters and district control posts at various

with the approximate time of arrival at the latter, and no train is allowed to pass a district post unless the attendant has been so authorized. On one wall of every central control post is a long board with

lettered on the board. Clips, with hooks which fit into grooves representing the track, are hung up for each train and moved forward or backward in accordance with reports on movements. A glance at



*British Official Photograph*

Fig. 5. A section of light railway track ballasted with chalk found in the vicinity.

Note also the switches, the drainage ditch at the right, which is a very important feature in muddy ground, the type of steam locomotive with water tanks on both sides of boiler, the cars, and the character of material carried in them.



*British Official Photographs*

Figs. 8 and 9. When the heavier steam locomotives are derailed, wrecking cars lift them back. The lighter petrol tractors can often be handled by blocking steel bars or derailing irons.



*British Official Photograph*

Fig. 10. Ordinary field repairs to rolling stock are made in a machine shop on wheels.

For heavy repair work and general overhauling, equipment is sent to a central repair plant.

points on the line, in direct telephonic communication with the main station. The time of departure of a train from the yards is telephoned to the district posts,

slotted wooden strips corresponding to every section of main track and siding in the system. Code numbers are given to each "station" on the line, and these are

the chart with its clips—red for loaded and green for empty—shows the position of every train in operation.

When a train is made up a form (fig.







U.S., and is kept up to date as a piece of extra work.

A very necessary part of the control system is the telephone lines, and to each A. D. L. R. headquarters are assigned a signal officer and men whose job is to keep the wires, switchboards and instruments in working order.

The number of cars per train varies widely. In the rear area one steam locomotive may haul on fairly level track nine 10-ton cars of ammunition or 12 cars of R. E. stores. These loads must be reduced in wet weather. As for the performance of light railways in carrying troops, one British officer told me that in his army zone alone as many as 160,000 had been carried in one day. As an indication of the relative amounts of the various materials which the light railways haul, the following figures, representing a month's traffic on a certain section of line operated by U.S. troops, is of interest, although I do not know whether these figures could be considered typical, for they are now several months old: Ammunition, 4,522 tons; rations, 6,284 tons; personnel, 3,281 tons; light railway ballast, 7,277 tons; salvage, 4,144 tons; miscellaneous, 6,992; total, 32,500 tons.

I am, of course, not at liberty to state the tonnage carried by the British light railway system, the figures for which I saw, among other records, at the headquarters of the Director General of Transportation, but in lieu of something specific this observation is pertinent: During the course of my trip over a good many hundreds of miles of highway, the routes were unobstructed and I noted scores of empty motor trucks, parked and idle, along the roadsides and in adjoining fields, both by day and by night. They told a silent, though none the less convincing, story of the work the light railways have done in the relief of traffic congestion behind the British front.

The foregoing is reproduced from Engineering News-Record, New York, to the editor of which we are indebted for most of the illustrations.

troops has been working unceasingly at the task, some units acting as pioneers in the construction of the great defence line that causes the Huns to hesitate on this sector. Little French villages, that never hoped for steel links with the larger cities, have now become, as if by the rubbing of some magic Aladdin's lamp, great junctions where trainloads of supplies come and go every part of an hour. The new lines run through the fertile fields of growing crops, and careful building has saved the Frenchman his harvest, but for the necessity strip of permanent way. There are alternate routes around towns

needed. The latest German thrust gave us the first test of the system, and divisions were shifted with a speed that must have surprised the Huns.

"In the same way some of the Canadian auxiliary troops have been working untiringly in the gun spurs behind the new front, off which the big howitzers pound the enemy positions. One battery from the middle west has the record of construction, 12 of these in a week and each one cleverly camouflaged from the prying eyes of Hun airmen.

"From the new railheads, many of which have been christened with Cana-



Light railway laid over captured ground on the British Western Front. Official photograph issued on behalf of the Press Bureau. Crown copyright reserved.



Canadian railway troops passing through a ruined town after laying track. Canadian official photograph

### Canadian Light Railway Building at the British Front.

Roland Hill wrote from the war correspondents' headquarters in France to the Militia Department, Ottawa, recently as follows:—

"Behind the new fighting line since the Huns' advance in April there has grown up a network of strategic railways, making a formidable system which more than compensates us for the loss of the lines we had to abandon and destroy in our retirement. Almost from the day the enemy crossed the Nord Canal practically every battalion of Canadian railway

which the Hun might shell, and day by day stores of carefully concealed ammunition dumps grow up which are fed by the strip of steel.

"Speaking from a strategical point of view," said a railway staff officer, "we are in a better position today than we were on the Somme. The hundreds of miles of new track have been built specially for military use and conform with the fighting front. All possibilities have been considered. Where, previously we had to rely on civilian built lines, which wound tediously round the country by indirect routes, we now have a military system which takes out supplies in the quickest and most direct way to where they are

dian names, there start fully constructed light railway systems that wind their way through little valleys, still screened from the enemy, to the fine new reserve trenches which have not yet had to be used, and perhaps never will be. You cannot run trains over a line drawn in blue pencil on an ordnance map, and the railway engineers have to build scores of miles that might be used. They must be there for an emergency.

"The construction of the new British defences—railways play a prominent part—have been marvellously complete, and have been so rapid that before the Huns could take breath for another stage of attacks on this northern section the fabric of a fortress faced them and grew into such menacing shape that he hesitated. Now if he takes another fling at the middle road to the coast he will have to pay the same great price in blood. The 'army behind the army' has done its duty and built well—even better than it destroyed in the sombre days at the end of March."

The Canadian Northern Rolling Stock Co. is reported to have obtained permission from the American Capital Issues Committee to issue \$5,000,000 of 6% equipment trust certificates. The company is a new one, incorporated for the purpose of providing rolling stock for the C.N.R. The certificates will be issued through a trust company and will be placed through a banking syndicate. The rolling stock is to be leased to the C.N.R. for an annual rental.



# Steam Railway Statistics for Year Ended June 30, 1917.

Canadian Railway and Marine World for July contained a table giving the mileage of all steam railways in Canada, with details of the freight and passenger earnings and of the operating expenses and net operating earnings or deficits. In the following table the 1st column shows the net revenue or deficit on the railway operations of the several companies; the 2nd the profit or loss from operations outside railways, and the 3rd the income from all other sources. The 4th column shows the taxes paid, the 5th gives the gross corporate income, from which is deducted rents, interest on funded debt, sinking fund, etc.; the final column showing the net corporate income available for special appropriations, dividends on common and preferred stock, or held in profit and loss account. This is the first year in which we have published this table, but we consider it necessary, to supplement the table given in our June issue and to show the final results of the year's operation for each railway.

Name of Railway	Net operating revenue or deficit	Profit or loss from outside operations	Other income from all sources	Taxes deduction	Gross corporate income or loss	Rents, interest, sinking funds, etc.	Net corporate income or loss
Alberta & Great Waterways	—\$39,345.02	—\$1,708.12	\$25,855.70	\$2,160.60	—\$17,358.04	—\$153,387.28	—\$170,745.32
Algoma Central & Hudson Bay	186,996.68	\$287,521.32	113,765.84	30,728.67	557,555.17	818,994.31	—261,439.14
Algoma Eastern	271,020.22		1,186.98	1,839.13	270,368.07	272,573.07	—2,205.00
Atlantic, Quebec & Western	—13,361.83		59,074.61	3,263.00	42,494.78	78,274.69	—35,799.91
Brandon, Saskatchewan & H.B.	—84,391.13		\$595.31	1,071.89	—84,867.71	1,688.33	—86,556.04
British Yukon	137,377.47		22,592.22	6,805.27	153,164.42	103,889.97	49,274.45
Canada Southern	4,295.68				4,295.68	2,463.15	1,832.53
Canada & Gulf Terminal	5,936,234.61		593,384.38	252,859.82	6,276,759.17	4,149,550.06	2,127,208.51
Canadian Government Railways							
Intercolonial	1,638,139.91				1,638,139.91	786,605.68	851,534.23
International of N. B.	—45,409.86				—45,409.86	18,699.10	—64,078.96
National Transcontinental	—82,032.16				—82,032.16	741,062.29	—823,094.45
St. John and Quebec	—18,115.95		230.67		—17,885.28	11,683.38	—29,568.66
Prince Edward Island	—245,183.35				—245,183.35		—245,183.35
Canadian Northern System	12,159,742.39		364,563.30	903,021.73	11,621,284.16	14,825,021.13	—3,203,736.97
Canadian Pacific	50,055,673.93	1,711,232.60	9,660,476.89	1,882,950.71	59,544,432.71	3,207,263.55	56,337,169.16
Cape Breton	—11,847.19				—11,847.19		—11,847.19
Caraguet	782.17				782.17	8,212.40	—7,430.23
Central Canada	—19,173.12		669.30	138.39	—18,606.21	38,116.41	—56,722.62
Central Vermont	66,305.25		22,546.45	5,450.39	83,401.31	68,296.74	15,104.57
Crows Nest Southern	—105,474.90		5.01	6,341.91	—111,811.80	4,332.60	—116,144.40
Cumberland Ry. & Coal Co.	11,882.88				11,882.88		11,882.88
Dominion Atlantic	321,996.38	—2,666.89	23,291.67	412.36	342,208.80	341,462.43	746.37
Eastern British Columbia	—5,488.14			1,460.07	—6,948.21	6,624.97	—13,573.18
Edmonton, Dunvegan & B.C.	—8,764.90	17,034.41	14,638.89	2,479.86	20,428.54	384,194.37	—363,765.83
Elgin & Havelock	—1,616.39				1,616.39		—1,616.39
Esquimalt & Nanaimo	228,426.31			35,965.95	192,460.36	220,474.11	—28,013.75
Essex Terminal	32,441.92				32,441.92		32,441.92
Fredericton & G. L. Coal & Ry. Co.	41,233.78				41,233.78	51,416.61	—10,182.83
Grand Trunk	13,179,038.48		2,500,485.04	1,289,167.77	14,390,355.75	12,427,361.04	1,962,994.71
Grand Trunk Pacific	—205,734.81		2,535,064.04	44,725.79	2,284,603.44	7,992,184.38	—5,707,580.94
Grand Trunk Pacific branch lines	—203,327.61		909,375.72	22,285.61	683,762.50	1,222,522.66	—538,760.16
Hereford	—55,837.58		382.01	1,800.97	—57,256.54	32,900.00	—90,156.54
Kent Northern	7,500.00				7,500.00		7,500.00
Kettle Valley	—100,159.48			10,020.18	110,179.66	84,392.50	—194,572.16
Lotbiniere & Megantic	1,052.03				1,052.03		1,052.03
Maine Central (Princeton Branch)	3,429.84		35.12	510.00	2,954.96	3,150.00	—195.04
Manitoba Great Northern	—83,218.36		210.54	920.34	—83,928.16	10,321.25	—94,249.41
Maritime Coal, Ry. & Power Co.	42,260.43				42,260.43	5,482.50	36,831.93
Massawippi Valley	—61,767.54		1,450.16	2,403.87	—62,721.25	69,035.52	—131,756.77
Midland of Manitoba	—9,810.70		28,076.90	27,128.45	—8,862.25	86,078.80	—94,941.05
Moncton & Buctouche	—1,230.03				—1,230.03		—1,230.03
Montreal & Atlantic	77,555.95		1,400.00	34,483.58	44,472.37	124,62.18	—80,189.81
Morrissey, Fernie & Michel	8,729.58				8,729.58		8,729.58
Napierville Junction	70,346.41		2,468.51	854.51	71,960.41	23,205.34	48,755.07
Nelson & Fort Sheppard	—47,830.30		105.41	5,619.66	—53,344.55	4,411.27	—57,755.82
New Brunswick Coal & Ry. Co.	—13,591.73				—13,591.73	3,456.43	—17,048.16
New Brunswick & P.E.I.	—27,112.46				—27,112.46	5,107.94	—32,220.40
New Westminster Southern	—5,971.86		350.82	872.32	—6,493.36	16,944.18	—23,437.54
Ottawa & New York	—13,364.78		2,406.98	883.81	—11,841.61	52,240.15	—64,081.76
Pacific Great Eastern	—108,209.77				—108,209.77		—108,209.77
Pere Marquette	1,489,691.35		156,250.35	1,320.64	1,644,621.06	1,105,441.43	539,179.36
Quebec Central	566,082.35		15,427.18	15,046.24	566,463.29	289,970.37	276,492.92
Quebec, Montreal & Southern	—45,055.87		291,634.70	7,696.74	238,882.09	259,515.14	—20,633.05
Quebec Oriental	20,137.40		1.00	3,099.16	17,039.24	118,041.69	—101,002.45
Quebec Ry., Light & Power Co.	19,550.00				11,972.07		11,972.07
Red Mountain	—14,398.41		29.27	1,187.12	—15,556.26	137.73	—15,693.99
Roberval-Saguenay	47,537.00				47,537.00	94,131.73	—46,594.73
Rutland & Noyan	3,068.10		4,000.00	17.44	7,050.66	4,000.00	3,050.66
Salisbury & Albert	6,779.34				6,779.34		6,779.34
St. Clair Tunnel (4)	457,268.32		567.33	5,579.74	452,256.41	236,143.36	216,113.05
St. Martins	—2,809.46				—2,809.46	539.74	—3,349.20
Sydney & Louisburg	127,846.15				127,846.35		127,846.15
Temiscouata	28,866.35		2,485.81	3,628.42	27,696.74	22,560.88	5,135.86
Timiskaming & Northern Ontario	525,577.25		134,700.43		660,277.68	77,706.74	582,570.94
Thousand Islands	12,241.37		534.29	78.99	12,696.67	10,569.90	2,126.77
Toronto, Hamilton & Buffalo	884,948.20		72,684.55	34,988.78	922,643.97	302,635.08	620,008.89
Vancouver, Victoria & Eastern	—333,980.53		168,120.80	64,745.56	—230,605.29	169,918.66	—400,523.95
Victoria & Sidney	1,044.94		344.57	1,488.75	—99.24	449.27	—548.51
Victoria Terminal Ry. & Ferry Co.	12,383.81	246.68	403.43	1,380.05	10,847.01	25,550.87	—14,703.86
Wabash (6)	1,207,668.04				1,207,668.04		1,207,668.04
York and Carleton	1,223.47				1,223.47	426.85	796.62
	\$89,894,376.24	\$2,016,035.61	\$17,731,038.52	\$4,726,462.17	\$104,334,486.19	\$51,175,398.81	\$65,092,798.87
Less—	2,013,534.22	4,375.01			1,437,407.82		13,371,119.32
Net operating earnings, etc.	\$87,880,842.02	\$2,011,660.60			\$102,897,078.37		\$51,721,679.55



## Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1914, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 239. June 19.—Extending to Aug. 1, effective date general order 230, May 17, 1918, re interswitching to freight traffic.

General order 240. June 21.—Amending general order 94, July 24, 1912, re eyesight tests and protection of railway employees.

General order 241. June 29.—Authorizing railway companies engaged in westbound transcontinental traffic to increase commodity rates from Eastern Canada to place them on at least an equality with rates in effect from neighbouring points in U.S., rates so increased to become effective not earlier than Aug. 1, upon not less than 5 days notice to board and shipping public by filing in manner prescribed in Railway Act.

General order 242. June 28.—Authorizing change in rule 1 (c) of Canadian Freight Classification 16, to provide minimum weight for first car in series carrying articles too long for one car. This order is given in full on another page.

27378. June 28.—Dismissing complaint of Crushed Stone, Ltd., Toronto, and Henderson Farmers' Lime & Phosphate Co., Woodstock, Ont., against increased G.T.R. rates on agricultural limestone and stone dust from Kirkfield, Ont., to various points.

27312. June 18.—Approving Chatham, Wallaceburg & Lake Erie Ry. standard freight mileage tariff C.R.C. 530, and standard passenger tariff C.R.C. 37, effective July 1.

27313. June 17.—Approving agreement between Bell Telephone Co. and Mud Lake Rural Telephone Co., Renfrew County, Ont., May 31.

27314. June 15.—Authorizing G.T.R. to build two spurs for Holden-Morgan Thread Miller, Ltd., Toronto.

27315. June 18.—Approving G.T.R. location and detail plan of proposed station at Campbellford, Ont.

27316. June 15.—Approving Canadian Northern Ontario Ry. revised location as built from Lot 123, Con. A, to Lot 8, Con. 3, Foley Tp., Ont., mileage 139.7 from Toronto; and authorizing C.N.O.R. to cross Blackstone Road by subway.

27317. June 18.—Approving Grand River Ry. bylaw authorizing M. W. Kirkwood, General Manager, and C. J. Whitney, General Freight and Passenger Agent, to prepare and issue tariffs of tolls.

27318. June 18.—Extending to Aug. 31 time within which Algoma Eastern Ry. shall complete fencing of right of way on east side of track between mileage 51.5 and 52.5, Merritt Tp., Ont.

27319. June 19.—Extending for two months from date time within which G.T.R. shall provide farm crossings in Bulstrode Tp., Que.

27320. June 18.—Authorizing C.P.R. to build spur for Christian Community of Universal Brotherhood at Trail, B.C.

27321. June 15.—Dismissing application of Rugg-Ball Manufacturing Co., Ayers Cliff, Que., for reduction in classification of wooden snow shovels, without prejudice to renewal of application.

27322. June 18.—Extending for three months from date, time within which G.T.R. shall complete siding for Palmolive Co. of Canada, Ltd., Toronto.

27323. June 6.—Amending order 26847, Dec. 19, 1917, re St. Maurice Valley Ry. (C.P.R.) crossing of highway in Three Rivers Parish, Que.

27324. June 19.—Authorizing London & Port Stanley Ry. to build spur on Bathurst St. between Waterloo & Wellington Sts., London, Ont., without prejudice to G.T.R. rights, if any, in respect of its track on Bathurst St., which has been removed under city authority.

27325. June 20.—Authorizing G.T.R. to build extension of siding, and spur therefrom, for Dupont Fabrikoid Co., New Toronto, Ont.

27326. June 20.—Extending to June 1, time within which City of Fort William, Ont., shall complete installation of half-interlocking plants at intersection of Victoria Ave. and Vickers St., and at intersection of Franklin St., as required under order 19319, May 15.

27327. June 20.—Ordering Bell Telephone Co. to amend its tariff C.R.C. 3100 to provide rate for local messages from coin-box public telephones, or from attended public telephones on two-number basis inside base areas, at 5c each, and from coin-box public telephones outside base areas at 10c each; effective within 14 days from date.

27328. June 21.—Ordering Esquimalt & Nanaimo Ry. to erect shelter and platform at Bowser, B.C.; to be completed by Aug. 15.

27329. June 21.—Dismissing complaint of A. McKinnon, Cumberland, B.C., that Wellington Colliery Ry. refuses to note damages on freight bills when charges are prepaid.

27330. June 22.—Dismissing complaint of taxicab drivers in Winnipeg against treatment received from railway companies at Union station, Winnipeg.

27331. June 24.—Ordering Canadian Northern Ry. to erect platform for shipping milk at Rottluff Road crossing, Matsqui, B.C., to be completed within 30 days.

27332. June 24.—Dismissing complaint of Mac-Cosham Storage & Distributing Co., Edmonton, Alta., that Grand Trunk Pacific Ry. refuses to bill forward complainant's cartage charges in same manner as is done for Western Cartage Co.

27333. June 22.—Dismissing Canadian Northern Ry. application for authority to close station at Dropmore, Man.

27334. June 24.—Refusing application of council of St. Louis rural municipality 431, et al, for order directing Grand Trunk Pacific Ry. to erect station at St. Louis, Sask.

27335. June 22.—Refusing application of City of Moose Jaw, Sask., for order directing Grand Trunk Pacific Branch Lines Co. to install electric alarm bell at crossing of 16th Ave. and Toronto St.

27336. June 24.—Refusing application of W. R. Fansher, Govan, Sask., for order directing Grand Trunk Pacific Ry. and C.P.R. to provide interswitching facilities at Nokomis, Sask.

27337. June 24.—Ordering Canadian Northern Ry. to appoint grain agent at Hodgson, Man., Sept. 1, for grain shipping season.

27338. June 24.—Authorizing Miami Corporation to build across C.P.R. main line overhead at mileage 101.75, Cascade Subdivision, near Port Haney, B.C.; if any dispute, same to be settled by an engineer of the board.

27339. June 24.—Refusing application residents of Vantage, Sask., for order directing C.P.R. to erect new station building there.

27340. June 24.—Dismissing Vancouver Harbor Commissioners' complaint that C.P.R. will not allow foreign cars for Vancouver with export freight to be taken over line leased by British Columbia Electric Ry., to Vancouver wharves.

27341. June 24.—Amending order 26683, Oct. 25, 1917, re highway crossing over Grand Trunk Pacific Ry. at New Hazelton, B.C.

27342. June 25.—Ordering Canadian Northern Ry. to build stock yards at Haight, Alta., to be completed by Aug. 1.

27343. June 25.—Refusing application of residents of Buchanan, Sask., for order directing Canadian Northern Ry. to build siding for elevator site.

27344. June 25.—Ordering Canadian Northern Ry. to appoint station agent at Mecheche, Alta., by Sept. 1.

27345. June 24.—Refusing application of L. R. Barrett Lumber Co., Swift Creek, B.C., for order directing Canadian Northern Ry. to appoint agent there.

27346. June 24.—Refusing application of Purcell Coal Co., Maple Creek, Sask., for order directing C.P.R. to install scale at Taber, Alta.

27347. June 25.—Ordering Edmonton, Dunvegan & British Columbia Ry. to erect portable cattle loading chute at Prest, Alta., by Sept. 1.

27348. June 25.—Ordering Canadian Northern Ry. to provide well and an extra yard for pigs at Kuroki, Sask., by Aug. 1.

27349. June 24.—Extending to July 31, time within which G.T.R. shall complete station at Lyster, Que., as per order 26668, Oct. 18, 1917.

27350. June 25.—Ordering Edmonton, Dunvegan & British Columbia Ry. to install portable station and temporary loading platform at Prest, Alta., by Sept. 1.

27351. June 26.—Refusing application of residents of Buttriss, Sask., for order directing C.P.R. to appoint station agent there.

27352. June 25.—Authorizing Grand Trunk Pacific Branch Lines Co. to build station at Hoey, Sask.

27353. June 26.—Ordering Canadian Northern Pacific Ry. to build 43 crossings over its tracks between mileage 54 and 96, Vancouver Island line, for Cowichan Lumber Co., Mossom Boyd Co., and W. T. C. Boyd Co.

27354. June 25.—Authorizing C.P.R. to divert road allowance on western boundary of Secs. 33 and 28, Tp. 40, Range 24, west 4th meridian, and to carry same across tracks at grade at mileage 14.8, Lacombe Subdivision, Alta.

27355. June 24.—Authorizing G.T.R. to rebuild bridge 143 over White River, Acton Tp., Que.

27356. June 21.—Authorizing G.T.R. to build spur for E. J. Jones, Brampton, Ont.

27357. June 21.—Authorizing C.P.R. to build temporary extension to Canada Iron Corporation siding for Morrow & Beatty, crossing Heriot and Forges Sts., Drummondville, Que.

27358. June 24.—Authorizing Toronto, Hamilton & Buffalo Ry. to build, at grade, across 4 highways in Saltfleet Tp., Ont.

27359. June 21.—Approving Toronto, Hamilton & Buffalo Ry. plans of culvert under its tracks at Albion Stream, between Stoney Creek & Kinnear, Ont.

27360. June 21.—Ordering Michigan Central Rd. to stop train 14 on flag at Woodslee to let off passengers from Windsor and points west.

27361. 27362. June 21.—Authorizing Halifax & South Western Ry. (C.N.R.) to remove regular agents at Barrington and Woods Harbor stations, N.S., caretakers to see stations are kept clean and heated for passengers on arrival and departure of trains, and to care for l.c.l. freight and express.

27363. June 25.—Authorizing C.P.R. to divert road allowance on western boundary of Sec. 34, Tp. 40, Range 24, west 4th meridian, and build

same at grade across its tracks at mileage 15.8 Lacombe Subdivision, Alta.

27364. June 25.—Authorizing Laval Electric Co. to erect wires along C.P.R. at mileage 17, Lachute Subdivision, Que.; and rescinding order 27080, Mar. 20.

27365. June 26.—Authorizing D. Bushby, Keddleton, Sask., to cross under C.P.R. on his property in Tp. 21, Range 23, west 2nd meridian; to repair or fix crossing in any way he desires, providing safety of C.P.R. bridge and track be not interfered with, and permission and rights granted not to be interfered with by C.P.R. without reasonable notice first being given. This without prejudice to rights of either party.

27366. June 27.—Authorizing Toronto, Hamilton & Buffalo Ry. to build branch in Hamilton, Ont., from its belt line near Beach Road, through certain lands named in book of reference, across Ottawa St., to G.T.R. lands, in lieu of present Grasselli connection, and to occupy certain G.T.R. lands.

27367. June 26.—Approving agreement June 14, between Bell Telephone Co. and North Bonaventure Telephone Association, Ltd., Renfrew County, Ont.

27368. June 27.—Authorizing Algoma Eastern Ry. to carry highway over its tracks between Lots 4 and 5, Concession 6, Merritt Tp., Ont.

27369. June 25.—Approving Toronto, Hamilton & Buffalo Ry. plans of rebuilding of Thompson Road subway, Bridgeburg, Ont.

27370. June 27.—Authorizing C.P.R. to divert road allowance in north boundary of n.e. ¼ Sec. 22, Tp. 27, Range 6, west 2nd meridian, Sask.

27371. June 27.—Authorizing Canadian Northern Ry. to build highway crossings between Secs. 34 and 35; and Sec. 34, Tp. 22, and Sec. 2, Tp. 23, Range 27, west 2nd meridian, Sask.

27372. June 25.—Extending to May 1, 1919, time within which Edmonton, Dunvegan & British Columbia Ry. shall complete siding and station facilities at junction of its line with its Grande Prairie Branch, as required under order 25961, Mar. 22, 1917.

27373. June 25.—Ordering Edmonton, Dunvegan & British Columbia Ry. to put entire station building at Donnelly, Alta., to public use; partition same to make passenger waiting room 9 ft. by 15 ft. 8 in., and freight shed 9 ft. by 16 ft. 4 in., appoint caretaker to keep station waiting room clean, heated and lighted, to see that package freight and express matter are properly housed, keep freight shed locked, with notice posted for information of residents, advising where caretaker can be found at convenient point, and make delivery of l.c.l. and express shipments between 8 a.m. and 6 p.m.; to extend station platform at least 100 ft.; all by Sept. 1.

27374. June 28.—Dismissing application of United Farmers of Alberta, Blackie, Alta., for order directing C.P.R. to install telephone at Blackie station.

27375. June 28.—Ordering Canadian Northern Ry. to erect fence on each side of spur for H. E. Cardey, Stettler, Alta.

27376. 27377. June 28.—Authorizing C.P.R. to build at grade its Regina, Saskatoon & North Saskatchewan Branch across East Second St., Renown, and across South St., Holdfast, Sask.

27379. July 3.—Authorizing Hull Electric Co. to file tariffs increasing freight rates, except on coal and coke, by 15c, rates on coal and coke by 15c a ton; and passenger rates so as not to exceed 2.875c a mile; tariffs be effective after compliance with secs. 327 and 331 of Railway Act.

27380. July 3.—Extending to Aug. 31 time within which C.P.R. may remove old piles and abutments from bed of Big Creek, Tilbury North Tp., Ont., as required by order 27110, Apr. 4.

27381. June 28.—Ordering Grand Trunk Pacific Ry. to move station at Three Hills, Alta., from west to east side of track about 300 ft. north of north switch, subject to condition that board of trade and citizens contribute \$300 toward cost; if cost is less, surplus to be returned to contributors; if in excess difference to be paid by company; work to be completed by Sept. 1.

27382. July 4.—Approving Windsor, Essex & Lake Shore Rapid Ry. standard mileage freight tariff C.R.C. 236, effective July 20.

27383. June 28.—Dismissing application of Sidney, B.C., Board of Trade for order to apply B.C. coast terminal rates to Sidney.

27384. July 4.—Authorizing C.P.R. to build spur for Canadian Rolling Mill Co. in Lot 3607, Emard Ward, Montreal Parish, Que.

27385. July 4.—Authorizing Saskatchewan Government to build highway crossing over Grand Trunk Pacific Branch Lines Co.'s track between Regina and Melville on surveyed road north of n.e. ¼ Sec. 26, Tp. 19, Range 15, west 2nd meridian.

27386. June 29.—Dismissing Esquimalt & Nanaimo Ry. application for order exempting it from complying with circular 81, and ordering it to comply with its provisions and to display night signals on main track switches from sunset to sunrise; when weather or other conditions obscure day signals, night signals to be used in addition.

27387 to 27389. July 5.—Dismissing application of City of Galt, Ont., for order directing C.P.R. to provide bell or other appliance at crossing at Bev-



erley St. and Dundas and Waterloo Road, and ordering C.P.R. to flag trains over crossing, also dismissing applications of city that C.P.R. provide gates at crossing of Dundas and Waterloo Road and bell at Beverley St., the first crossing to be protected by watchman during shunting between 7 a.m. and 6 p.m., and trains to be flagged over latter crossing.

27390. July 4.—Authorizing C.P.R. to build extension to spur for D. Auckland & Son, East Kildonan, Man.

27391. July 3.—Approving agreement, June 19, between Bell Telephone Co. and Rydal Bank-Plummer Telephone Co., Algoma District, Ont.

27392. July 2.—Amending order 27241, May 21, re C.P.R. and Ottawa & New York Ry. train service at Finch, Ont.

27393. July 4.—Authorizing Essex Terminal Ry. to build across Sandwich, Windsor & Amherstburg Ry. at grade on Main St., near Langlois Road, Sandwich West Tp., and to cross on Main St. near Chappus St.

27394. July 5.—Authorizing G.T.R. to build two sidings for National Iron Corporation, Toronto.

27395. June 29.—Amending order 15015, Sept. 8, 1911, re G.T.R. connection with Timiskaming & Northern Ontario Ry. at Nipissing Jct., Ont.

27396. June 29.—Authorizing Canadian Northern Quebec Ry. to build branch for Silica Products, in St. Canute Parish.

27397, 27398. July 2.—Approving agreements between Bell Telephone Co. and Osprey Tp., Ont. June 15, and Rose Telephone Co., Algoma District, Ont., June 19.

27399. July 6.—Approving supplement F to Express Classification for Canada 3, to be filed as supplement 12.

27400. July 6.—Relieving Canadian Northern Ry. from providing further protection at crossing 2 miles east of Odessa, Sask.

27401. July 8.—Approving agreement, June 28, between Bell Telephone Co. and Montreal Light, Heat & Power Co., Soulanges County, Que.

27402. July 6.—Re charge by Canadian Northern Ry. for delivery in New Westminster of carload of barley from Clyde, Alta. This order is given in full on another page.

27403. July 6.—Dismissing application of municipalities of Burnaby and Coquitlam, B.C., for order requiring Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to complete work required under order 25260, Aug. 10, 1916, with leave to apply to board re any matters arising out of temporary timber abutments supporting southern end of bridge near Sapperton, B.C.

27404. July 8.—Dismissing application of W. S. Henderson, Drumheller, Alta., for order directing C.P.R. to build spur near high level bridge at Lethbridge, Alta.

27405. July 9.—Dismissing application of John Abrey, Souris, Man., for ruling re fencing by C.P.R. across Souris River.

27406. July 5.—Dismissing application of G. H. Furnival, Edmonton, Alta., for order directing Grand Trunk Pacific Ry. to pay for damages to his property.

27407. July 5.—Dismissing application of South Alberta Wool Growers Association for order requiring railway companies to establish minimum carload weight of 12,000 lbs. on sheep in single deck cars.

27408. July 6.—Ordering Grand Trunk Pacific Ry. to complete fencing of right of way between Houston and Knockholt, B.C., by Oct. 1.

27409. July 5.—Dismissing United Farmers' Association's application for order requiring C.P.R. to appoint agent at Cairns, Alta., and ordering C.P.R. to appoint caretaker to keep station clean, and when necessary heated and lighted for arrival of passenger trains, and to see package freight and express shipments properly housed; C.P.R. to remove coal from freight shed and repair planking of platform; work to be completed by Aug. 1.

27410. July 6.—Dismissing Fort Frances Pulp & Paper Co.'s application for order directing Canadian Northern Ry. to furnish 60 cars daily for transportation of mill refuse for fuel from Beaudette, Minn., to Fort Frances, Ont.

27411. July 10.—Approving Hull Electric Co.'s standard maximum passenger tariff C.R.C. no. P-9, and standard maximum freight tariff C.R.C. no. F-82, effective July 22.

27412. July 8.—Authorizing Grand Trunk Pacific Saskatchewan Ry. to connect with C.P.R. Southernland Subdivision at mileage 7.45, and with C.P.R. Lanigan Subdivision at mileage 105.2; also connect with G.T.P.R. at mileage 471.7; and at mileage 460.7; protection to be determined by board's engineer.

27413. July 4.—Authorizing Shawinigan Lake Lumber Co. to build level crossing for logging railway over Canadian Northern Pacific Ry. right of way at Hunter Creek, Shawinigan Lake, B.C.

27414. July 5.—Authorizing Timber & Logging Co.'s logging railway crossing under Esquimalt & Nanaimo Ry. near Ladysmith, B.C.

27415. July 8.—Authorizing G.T.R. to rebuild bridge 107, near Agincourt, Ont.

27416. July 8.—Ordering Canadian Northern Ry. to erect 3rd class station at Lanfane, Alta.; to be completed by Sept. 1.

27417. July 9.—Approving Minto Tp., Ont., plan and specifications of work to be done on drain under G.T.R. near Harrington station, Ont.

27418. July 9.—Authorizing C.P.R. to build spurs for Consolidated Mining & Smelting Co. of

Canada, at mileage 75.9, Boundary Subdivision, B.C.

27419. July 9.—Extending for two months from date time within which Canadian Northern Ry. shall complete work required under order 27267, May 28, in Worthington Tp., Ont.

27420. July 9.—Amending order 27228, May 14, re G.T.R. sidings for Dominion Steel Foundry Co., Hamilton, Ont.

27421. July 10.—Approving London & Lake Erie Ry. & Transportation Co.'s standard mileage freight tariff C.R.C. 6.

27422. July 10.—Approving agreement, June 20, between Bell Telephone Co. and Renfrew & Shamrock Telephone Association, Renfrew County, Ont.

27423. July 11.—Authorizing Saskatchewan Government to make public highway over Grand Trunk Pacific Ry. between Secs. 5 and 6, Tp. 32, Range 27, west 2nd meridian.

27424. July 5.—Dismissing application of City of Victoria, B.C., for order apportioning cost of maintaining pedestrian traffic over Esquimalt & Nanaimo Ry. bridge.

27425. July 10.—Approving agreement, July 1, between Bell Telephone Co. & Timiskaming & Northern Ontario Ry. Commission, in Nipissing District, Ont.

27426. July 11.—Dismissing complaint of E. A. McKenzie of Arden, Man., against refusal of railway companies to supply him with car doors for sand and gravel shipments or pay him for doors supplied by himself.

27427. July 10.—Ordering C.P.R. to build spur for Simington Co., Calgary, Alta.

27428. July 10.—Authorizing Toronto, Hamilton & Buffalo Ry. to build at grade across highway at Ottawa St., Hamilton, Ont.

27429. July 12.—Dismissing application of Freight & Express Underwriters of Toronto, for same rating for zam-buk as provided in Canadian Freight Classification for vaseline.

27430. July 11.—Authorizing G.T.R. to remove shelter from Ballsville to Willow Grove, Ont., and to discontinue stopping trains on flag at Ballsville.

27431. July 12.—Authorizing New Brunswick (C.P.R.) to expropriate certain lands for additional main line at West St. John and Fairville, N.B.; to build main line at grade across New Brunswick Power Co.'s railway on Main St., Fairville; and to build at grade across North St., Union Point Road, Main St., Raynes Ave., Sherbrooke St., and Sand Cove Road, Fairville, N.B.

27432. July 12.—Authorizing G.T.R. to use highway bridge over its main line at mileage 222.22 near Belleville, Ont.

27433. July 13.—Authorizing Alberta Public Works Department to carry highway over Grand Trunk Pacific Ry. at Thornton, Alta.

27434. July 5.—Dismissing application of W. Harvey and C. C. Hale, Mazana, B.C., for order, directing Kettle Valley Ry. to build spur and shelter for freight and passengers at mileage 41, and ordering K.V.R. to erect shelter platform equal to board's standard 1-A at east end of Osprey Lake station grounds on north side of main line between water tank and east switch; to build spur for at least 2 cars to be spotted; and grade team track to enable cars to be driven along side and loaded from the ground.

27435. July 11.—Authorizing Grand Trunk Pacific Ry. to build over highway at Rosevear Station, Alta.; cost of construction and maintenance to be paid by Alberta Public Works Department.

27436. July 11.—Ordering Grand Trunk Pacific Ry. to build interchange track with C.P.R. near Forrest, Man.; and to file detail plans; work to be completed within 60 days from approval, and expense to be borne by G.T.P.R.

27437. July 15.—Ordering G.T.R. to stop train 103 at Oakville, Ont., when there are passengers for that point from Toronto; this order to remain in effect until Sept. 15.

27438, 27439. July 17.—Suspending, pending hearing on date to be fixed, C.P.R. Supplement 77 to Tariff C.R.C. no. E3210, effective July 25, and G.T.R. Supplement 73 to Tariff C.R.C. no. E3426, effective July 28, cancelling present commodity rates on glass bottles in carloads from Hamilton, Toronto and Montreal; also Supplement 7 to Toronto, Hamilton & Buffalo Ry. Tariff C.R.C. 502; Supplement 20 to G.T.R. Tariff no. E2619, and Supplement 9 to C.P.R. Tariff C.R.C. no. E2641.

27440. July 16.—Approving Minto Tp., Ont., plan of work to be done on municipal drain 10 under G.T.R.

27441. July 16.—Authorizing agreement between Canadian Northern Ry. and C.P.R. re C.N.R. bridge over C.P.R. and Moose Jaw Creek (third crossing) at mileage 86.1, Sask.

27442. July 16.—Authorizing Union Bank of Canada, Estevan Branch, to pay C.P.R. from amount deposited by Biefait Commercial Co. to board's credit, \$3,445.31 allowed for spur at mileage 148.9, Estevan Subdivision, Sask., balance with accrued interest to be repaid to Biefait Commercial Co.

27443, 27444. July 11.—Extending to Aug. 31, time within which G.T.R. shall install gates at St. Phillipe and St. Marguerite Sts., Montreal, provided crossing be protected by watchmen.

27445. July 18.—Authorizing C.P.R. to build spur for Standard Paint Co. of Canada, in Lot 954, Lachine Parish, Que.; and approving clearances at tank house door.

27446. July 18.—Authorizing Essex Terminal Ry. to open for freight traffic the portion of its railway from north side of Titcombe Road, Ojib-

way, to Amherstburg, Ont., 10.5 miles; speed of trains limited to 15 miles an hour.

27447. July 18.—Authorizing Canadian Northern Ry. to build highway over its tracks between Secs. 9 and 16, Tp. 45, Range 17, west 3rd meridian, Sask.

## Training Women as Railway Ticket Sellers.

Because of the need for skilled ticket sellers and the difficulty of obtaining enough trained men, the United States Railroad Administration has opened schools in several sections of the country for training women to fill these positions. The present force of trained men ticket sellers will be retained whenever possible because of the expert character of their work, but it has been found necessary to supplement their activities with women. This is due partially to the increase of traffic and partially to the loss of men to the army and navy. When thoroughly trained, women ticket sellers will be paid the same salaries as men doing the same work. Already enough applications have been made to fill the schools for the present. After preliminary training of from one to two months, the women who show aptitude will be given work of actual selling the simpler form of tickets and gradually will be worked into the sale of more complicated forms.

## Coal Supplies for the Northwest.

The United States Fuel Administration and the U.S. Railroad Administration have arranged for shipments of coal by the Great Lakes to take care of the Northwestern states and that portion of Canada dependent upon coal shipments on the lakes. A total of 28,000,000 tons of bituminous coal will be moved by the Lake Erie ports to the Northwest. Approximately 24,000,000 tons will go to the Northwestern States and the remainder to Canada. The movement of the coal will be forced during the summer months, so that if possible the movement of the coal can be completed by the end of October. This arrangement will avoid a repetition of the trouble last autumn, when Ohio and Michigan were unable to obtain coal in the early fall months because of the lake movement. This year, therefore, it will be possible for these states to lay in their supply before winter, although they will have to wait until autumn to obtain the major portion of their supplies.

## Live Stock Freight Rates in the West.

J. D. McGregor, Food Controller for Western Canada, is reported to have said, July 13, that the railway companies had agreed on a reduction of 50% in the rate for moving live stock and feed from all points in Manitoba, Saskatchewan and Alberta east of Cochrane and Lundbreck, south of a line on the C.P.R., running from Red Deer to Lacombe, to Kerrobert, to Wilkie, to Saskatoon, and by G.T.P., east of Saskatoon to the eastern boundary, about 100 miles west of Winnipeg. Cattle and sheep will be moved to the north at half rate, subject to minimum rate of 5c per 100 lb. on cattle and 6½c per 100 lb. on sheep up to Nov. 15, 1918; shipment returning, half rate in reverse direction prior to Oct. 1, 1919, provided returned by original owner to original point of shipment.

Newfoundland Railway Rates.—The Reid Newfoundland Co., on June 1, increased its railway passenger fares per mile as follows: 1st class, from 3c to 4c; 2nd class, from 2c to 3c. Freight rates have not been increased.



## Birthdays of Transportation Men in August.

Many happy returns of the day to:

V. T. Bartram, ex-Purchasing Agent, Timiskaming & Northern Ontario Ry., now of General Contracting & Dredging Co., Toronto, born at Ottawa, Aug. 2, 1880.

J. C. Beckwith, Engineer of Construction, Canadian Government Railways, Moncton, N.B., born at Fredericton, N.B., Aug. 1, 1875.

C. B. Brown, Assistant General Manager, Eastern Lines, and Chief Engineer, Canadian Government Railways, Moncton, N.B., born at Ithaca, N.Y., Aug. 27, 1879.

J. S. Carter, District Passenger Agent, C.P.R., Nelson, B.C., born at Aurora, Ill., Aug. 14, 1864.

A. E. H. Chesley, General Accountant, Dominion Atlantic Ry., Kentville, N.S., born near Annapolis Royal, N.S., Aug. 27, 1877.

A. B. Chown, Travelling Passenger Agent, G.T.R., Pittsburg, Pa., born at Belleville, Ont., Aug. 4, 1887.

G. T. Coleman, Car Service Agent, Ontario District, C.P.R., Toronto, born at Carleton Place, Ont., Aug. 25, 1875.

C. H. N. Connell, Engineer Maintenance of Way, Quebec District, Canadian Northern Ry., Montreal, born at Woodstock, N.B., Aug. 26, 1876.

H. W. Crawford, General Agent, Canada Steamship Lines, Ltd., Cleveland, Ohio, born at Bowmanville, Ont., Aug. 24, 1887.

E. L. Desjardins, Acting Superintendent, District 5, Intercolonial Division, Canadian Government Railways, Edmundston, N.B., born at St. Jean Port Joli, Que., Aug. 1, 1859.

A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont., and Vice President, Canadian Electric Railway Association, born in Bosanquet Tp., Ont., Aug. 21, 1870.

L. C. Fritch, ex-General Manager, Eastern Lines, Canadian Northern Ry., now General Manager, Seaboard Air Line Ry., Norfolk, Va., born at Springfield, Ill., Aug. 11, 1869.

J. V. Foy, General Passenger Agent, Canada Steamship Lines, Ltd., Toronto, born there Aug. 27, 1882.

G. H. Ham, Head Office Department, C.P.R., Montreal, born at Trenton, Ont., Aug. 23, 1847.

W. B. Harper, Resident Engineer, Laurentian Division, Quebec District, C.P.R., Montreal, born at Baie Verte, N.B., Aug. 15, 1882.

M. B. Helston, Superintendent, Division 3, Western District, Canadian Northern Ry., Edmonton, Alta., born at Michigan, Ind., Aug. 24, 1869.

W. P. Hinton, Vice President and General Manager, Grand Trunk Pacific Ry., Grand Trunk Pacific Coast Steamship Co., and Western Traffic Manager, Canadian Government Railways, Winnipeg, born at Hintonburg, Ont., Aug. 30, 1871.

F. S. Isard, Comptroller, Canada Steamship Lines, Ltd., Montreal, born at Hamilton, Ont., Aug. 14, 1888.

J. D. McDonald, Assistant General Passenger Agent, G.T.R., Chicago, Ill., born at Toronto, Aug. 27, 1855.

T. McHattie, ex-Master Mechanic, Eastern Lines, G.T.R., Montreal, born at Dufftown, Banffshire, Scotland, Aug. 8, 1854.

M. K. McQuarrie, Engineer, Dominion Atlantic Ry., Kentville, N.S., born at Sault Ste. Marie, Ont., Aug. 17, 1884.

A. H. Mahon, District Locomotive Foreman, Grand Trunk Pacific Ry., Ed-

son, Alta., born north of Ottawa, Ont., Aug. 27, 1874.

W. J. Meakin, Locomotive and Car Foreman, C.P.R., Wetaskiwin, Alta., born Toronto, Aug. 22, 1872.

C. Montgomery, Master Mechanic, Pere Marquette Ry., St. Thomas, Ont., born near London, Ont., Aug. 29, 1860.

W. E. Mullins, General Manager (Freight), United Fruit Co., New York, born at Stratford, Ont., Aug. 13, 1870.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver, B.C., born at Greenwich, Eng., Aug. 27, 1875.

F. H. Phippen, K.C., General Counsel, C.N.R., Toronto, born at Belleville, Ont., Aug. 26, 1862.

W. M. Porteous, District Freight Agent, C.P.R., St. Louis, Mo., born at Edinburgh, Scotland, Aug. 3, 1857.

W. G. Ross, President, Montreal Harbor Commissioners, born at Montreal, Aug. 6, 1873.

W. LeB. Ross, Local Treasurer, G.T. Pacific Ry., Winnipeg, born at Ottawa, Ont., Aug. 9, 1868.

F. C. Salter, European Traffic Manager, G.T.R., and Canadian Express Co., London, Eng., born at Sarnia, Ont., Aug. 31, 1863.

W. H. Sample, Superintendent of

Motive Power, Grand Trunk Ry., Montreal, born at Altona, N.Y., Aug. 20, 1864.

A. O. Seymour, General Tourist Agent, C.P.R., Montreal, born at Ogdensburg, N.Y., Aug. 14, 1887.

S. A. Simpson, Superintendent, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Winnipeg, born at Toronto, Aug. 22, 1880.

J. F. Sweeting, Industrial Agent, Natural Resources Department, C.P.R., Calgary, Alta., born at Worthing, Eng., Aug. 20, 1872.

W. J. Sturges, acting Assistant Purchasing Agent, Grand Trunk Pacific Ry., Winnipeg, born at Fairfield, Vt., Aug. 28, 1877.

L. Tait, Secretary-Treasurer, London St. Ry., London, Ont., born at Hamilton, Ont., Aug. 9, 1882.

F. E. Warren, General Car Foreman, C.P.R., Winnipeg, born at Chelsea, Que., Aug. 29, 1872.

W. B. Way, Superintendent, District 2, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., born at Bowmanville, Ont., Aug. 22, 1867.

H. E. Weyman, Manager, Levis County Ry., Levis, Que., born at Guildford, Eng., Aug. 27, 1883.

**Rail Deliveries.**—Up to July 5, the Dominion Iron & Steel Co. had delivered 43,615 tons, out of the 100,000 tons of steel rails ordered by the Dominion Government for various railways.

## Canadian Pacific Railway's Honor Roll 36.

Adair, Wilbert	Lahorer	Lamton	Killed in action
Adam, Charles	Stower	Calgary	Killed in action
Agger, Ralph	Clerk	Winnipeg	Killed in action
Anderson, John Alexander	Assistant agent	Newdale	Killed in action
Arnold, John Henry	Clerk	Parkdale	Wounded
Barlow, Fred.	Wiper	Souris	Killed in action
Bell, Wesley	Car checker	Weyburn	Died of wounds
Bickley, Charles H.	Fireman	Winnipeg	Killed in action
Birkill, Thomas M.	Clerk	Calgary	Presumed dead
Bolt, Arthur	Locomotive fireman	British Columbia Dist.	Wounded
Brown, Joseph	Car inspector	Kenora	Died of wounds
Burchall, Douglas	Car inspector	Kenora	Died of wounds
Clark, Job	Wiper	Broadview	Wounded
Clemis, Wesley	Brakeman	Winnipeg	Died of wounds
Cooper, Alex. M.	Clerk	Montreal	Wounded
Crisp, John	Apprentice	Angus	Gassed
Cumming, John	Checker	Place Viger	Killed in action
Dauphin, Leonard	Apprentice engineer	Victoria	Gassed
Davies, Owen	Lineman	Revelstoke	Killed in action
DeMill, Frank	Clerk	Winnipeg	Killed in action
Duncan, James Foster	Clerk	Montreal	Gassed
Esselmont, John W.	Assistant agent	Hope	Gassed
Exall, Albert E.	Inspector	Terrebonne	Killed in action
Fisher, John	Conductor	Calgary	Wounded
Flint, Alfred W.	Billor	Regina	Killed in action
Gilkes, Handel G.	Engineer	Lethbridge	Wounded
Green, Thomas Bold	Apprentice	Ogden Shops	Wounded
Hansen, P.	Fireman	B.C. Coast Service	Wounded
Harlow, Harry Vernon	Wiper	East Calgary	Wounded
Harrison, James	Sectionman	Westbourne	Killed in action
Hemming, Joseph Chas.	Clerk	Montreal	Wounded
Hickey, Herbert Chas.	Car repairer	Calgary	Died of wounds
Hobbs, Henry Harold	Messenger	Winnipeg	Wounded
Hunter, James	Checker	Victoria	Killed in action
Kelly, Walter	Stower	Winnipeg	Killed in action
Kirkwood, Wm. Hugh	Wiper	Winnipeg	Killed in action
Loudon, Wm. D.	Apprentice	Victoria, B.C.	Gassed
Love, J. R.	Tinsmith	Winnipeg	Wounded
McQuarrie, Geo. L.	Yard foreman	Winnipeg	Wounded
Morris, Alfred William	Clerk	Calgary	Killed in action
Mosley, Charles H.	Clerk	Montreal	Wounded
Moss, Cecil Frederick	Wiper	Outlook	Presumed dead
Piggott, Frank	Car repairer	Winnipeg	Wounded
Porter, George L.	Laborer	Winnipeg	Presumed dead
Reid, William G.	Stock keeper	Ogden	Killed in action
Rider, Ernest H.	Storekeeper	Hardisty	Killed in action
Roy, Joseph Peter	Yardman	Cartier	Wounded
Schroder, George H.	Air brake cleaner	Toronto	Gassed
Sharpe, Allison E.	Watchman	Woodstock, N.B.	Died of wounds
Sharland, Thomas	Car repairer	West Toronto	Presumed dead
South, Thomas	Car cleaner	Calgary	Died of wounds
Tanaka, Yasogiro	Red cap	Calgary	Killed in action
Taylor, George	General helper	Angus	Wounded
Thompson, Jesse C.	Yardman	West Toronto	Wounded
Todd, Harry	Car inspector	Regina	Killed in action
Trites, Barret A.	Locomotive fireman	Moose Jaw	Wounded
Turner, Wm. F.	Yard foreman	Fort William	Died of wounds
VanAlstyne, Wm. F.	Trainman	Winnipeg	Gassed
Walsh, John	Agent	Deleau	Wounded
Weatherhead, John C.	Constable	Kamloops	Died of wounds
Wiseman, Stanley W. E.	Storeman	Winnipeg	Wounded

Shown on honor lists to date:—Killed, 666; wounded, 1,506. Total, 2,172.



# Freight Rates Advanced by Order in Council.

The following semi official statement for the press was given out in Ottawa, July 25:—Acting on a report prepared by the Board of Railway Commissioners, an order in council has been passed increasing freight rates to an amount sufficient to meet the increased operating cost imposed on the railways by the new wage schedule. The increase will average about 20%. The freight rate increases are the direct outcome of the acceptance in Canada of the McAdoo award, which applies to both government railways and railways owned by private companies.

The railway companies, confronted with demands for increased wages, stated that they were willing to grant the increases allowed by Director-General McAdoo in dealing with the wages of railway employees in the U.S. They recognized the general similarity of operating conditions in Canada and the U.S., and admitted that in general wage scales of railway employees in this country were similar to those in force on the other side. The railway employees are taken in their daily work from one side of the line to the other, and the brotherhoods are identical in this scope. Recognizing these facts and conditions, the Dominion Government made effective in Canada the so-called McAdoo scale of wages. As a corollary the Canadian railways insisted that the McAdoo scale of freight rates, which were deemed necessary in order to carry the increased cost of railway operation in the U.S., should be adopted here.

The condition of the Canadian railways made this result all the more certain. The earnings of the Grand Trunk in 1916 of \$1,200,000 dropped in 1917 to such an extent that there were practically no net earnings, and no dividends on any of the preferred stock could be or were declared. There was also a drop in the first six months of this year in the C.P.R. net earnings of \$6,500,000. compared with the first six months of 1917. The deficit on the Canadian Northern was increasing and there was no other way in which money for meeting the increased scale of wages which the men demanded could be raised.

By order in council passed under the War Measures Act the government, after considering a report prepared by the Board of Railway Commissioners on the rate situation in Canada, has practically adopted the McAdoo increases. There are certain exceptions made in cases where it was found that the adoption of the scale would unduly limit or interfere with Canadian commerce. The export and import rates system in Canadian territory where rates were not increased, continue to stand, and can only be increased subject to a maximum of the lowest rate or rates in U.S. territory to or from the seaboard ports. In like manner the low value ore in the Kootenay district, which could not well stand the U.S. increase, is held down to the stone and rubber commodity basis.

The effect of the application of the U.S. increases brings about a different increase in Canadian territory in the East and West. In the U.S. eastern territory advances were made by the Interstate Commerce Commission, in the so-called 15% case. Advances were also made in Canadian territory by the Board of Railway Commissioners in both Eastern and Western Canada, but no advances were granted in U.S. territory on the lines of the Northern Pacific and Great Northern Railways in territory immediately con-

tiguous to the Canadian West. In applying the increases, therefore, in eastern territory the McAdoo increases are calculated upon the rates advanced by the board following the action which has been taken in U.S. eastern territory, while in western territory the advances granted by the Board of Railway Commissioners are struck out and the McAdoo increases calculated upon the former rates.

This percentage of increased rate will not, however, be actually effective. On the short hauls, where the total freight bill does not constitute a large percentage of the value of the article carried, somewhat higher increases would be instanced, but on the longer hauls on most of the important commodities rates are held down to a maximum increase, and in other cases by flat increases, which cannot be exceeded, no matter how long the haul may be. It is impossible to tell what the exact percentages of increase will be that the railways will obtain under the McAdoo order. In all probability it will not exceed 20%.

The increase granted cannot add anything to the net revenues of the companies. It may fall short of meeting their increased expenses. The increased operating cost entailed by applying the McAdoo award is some \$53,000,000, and in 1917, when the Canadian railways probably earned the highest rates in their history, the gross freight earnings amounted to but some \$215,000,000. The government has ordered the Board of Railway Commissioners to check each month the operations of Canada's three main roads—the Canadian Pacific, Grand Trunk and Canadian Northern—so that if it is found that any increase is unnecessary it may be promptly reduced to the proper figure. The board is also ordered to make a monthly report to the cabinet covering the operation of the new tariff.

One important effect of the order will be to bring the western and eastern scale of rates more in line and remove the grounds for complaint by the westerner that he is more heavily taxed for the operation of Canada's railways than is the easterner. In this connection it may be noted that one of the first judgments of the present Chairman of the Board of Railway Commissioners was to reduce the express companies' tariffs in western territory 20%, leaving the rates in the eastern territory as they were. This reduction was followed by the general reduction in freight rates in western territory, which was brought about by the board's judgment in the western rate case, and the board in 1916 increased the freight rates in eastern Canada again, bringing the scales nearer a parity.

## The Order in Council.

Following is the order in council passed by the Dominion Government, July 27, on the Minister of Railways' recommendation:—

Notwithstanding the provisions of any legislation heretofore passed, or of any rate-limiting agreement heretofore made, the charges for the carriage of freight on all railways owned, operated or controlled by the Government of Canada, and all other railways subject to the jurisdiction of the Parliament of Canada, shall be increased to the extent and in the manner hereinafter set out, that is to say:

### Territory East of Ft. William.

Section 1—Class Rates.—All class rates in eastern territory shall be increased 25%.

Section 2—Commodity Rates.—(a) Commodity rates on the following articles in carloads shall be increased by the amounts set opposite each:—

Coal—Where rate is 0 to 49c a ton—15c a net ton of 2,000 lb.

Where rate is 50 to 99c a ton—20c a net ton of 2,000 lb.

Where rate is \$1 to 1.99 a ton—30c a net ton of 2,000 lb.

Where rate is \$2 to \$2.99 a ton—40c a net ton of 2,000 lb.

Where rate is \$3 or higher per ton—50c a net ton of 2,000 lb.

Coke—Where rate is 0 to 49c a ton—15c a net ton of 2,000 lb.

Where rate is 50 to 99c a ton—25c a net ton of 2,000 lb.

Where rate is \$1 to \$1.99 a ton—40c a net ton of 2,000 lb.

Where rate is \$2 to \$2.99 a ton—60c a net ton of 2,000 lb.

Where rate is \$3 or higher a ton—75c a net ton of 2,000 lb.

Ores, Iron—30c a net ton of 2,000 lb., except that no increases shall be made in rates on ex-lake ore that has paid increased all-rail rate before reaching lake vessels. The increase of 30c shall be added to tariffs in force prior to Mar. 15, 1918, and the increase since allowed by the Board of Railway Commissioners is struck out.

Stone, artificial and natural, building and monumental, except carved, lettered, polished or traced—2c per 100 lb.

Stone, broken, crushed and ground—1c per 100 lb.

Sand and gravel—1c per 100 lb.

Brick, except enamelled or glazed—2c per 100 lb.

Cement—2c per 100 lb.

Lime and plasters—1½c per 100 lb.

Lumber and other forest products not otherwise herein specifically dealt with—a flat rate of 1c per 100 lb. to be added to the tariffs in force prior to Mar. 15, 1918, and the rate so obtained to be then increased by 25%, but not exceeding 5c per 100 lb., the increase since granted by the Board of Railway Commissioners to be disallowed.

Pulpwood—25c%, but not exceeding an increase of 5c per 100 lb.

Cordwood, slabs and mill refuse, for fuel purposes—1c per 100 lb.

Wheat—Strike out limitation imposed of 2c per 100 lb. in increase allowed by Board of Railway Commissioners, effective Mar. 15, 1918, and add 25% increase, but not exceeding 6c per 100 lb.

Other grains, flour, and other milled products—To be increased to new wheat rates.

Live stock—25%, but not exceeding an increase of 7c per 100 lb. where rates are published per 100 lb., or \$15 a standard 36 ft. car, where rates are published per car.

Packing-house products and fresh meats—25%.

Bullion, base (copper or lead), pig or slab and other smelter products—25%.

Sugar, syrup and molasses, by cancelling existing commodity rates and applying 5th class rate as increased hereunder.

Ice—25%, calculated on tariffs in effect prior to Mar. 15, 1918. Increases since allowed by Board of Railway Commissioners to be disallowed.

(b) Commodity rates not included in foregoing list increased 25%.

(c) In applying increases prescribed in this section, the increased class rates applicable to like commodity descriptions



and minimum weights between the same points are not to be exceeded.

#### Territory West of Fort William.

(a) All class rates increased 25%, calculated on tariffs in force prior to Mar. 15, 1918; increases since allowed by Board of Railway Commissioners to be disallowed.

Coal and coke—Rates to be increased as rates on these commodities are increased hereunder in eastern territory.

Ores, iron—Rates to be increased same as rates on these commodities increased hereunder in eastern territory.

Ores, other—On ores not exceeding in value \$25 a net ton, 1c per 100 lb.; on ores valued over \$25 to \$50, 2c per 100 lb.; on ores valued over \$50 to \$100, the 10th class rates of the merchandise distributing scale as increased hereunder shall apply; on ores over \$100 in value, the 10th class rates of the merchandise standard scale as increased hereunder shall apply.

Stone (artificial and natural), building and monumental, except carved, lettered, polished or traced—by the addition of 2c per 100 lb. to the tariff in force prior to Mar. 15, 1918; increases subsequently granted by Board of Railway Commissioners to be disallowed.

Stone, broken, crushed and ground, also sand and gravel—by the addition of 1c per 100 lb. to tariffs in force prior to Mar. 15, 1918; increases since allowed by Board of Railway Commissioners to be disallowed.

Brick, except enamelled or glazed—by the addition of 2c per 100 lb. to tariffs in force prior to Mar. 15, 1918; increases since granted by Board of Railway Commissioners to be disallowed.

Cement—2c per 100 lb.

Lime—1½c per 100 lb. on tariffs in force prior to Mar. 15, 1918; increases since allowed by Board of Railway Commissioners to be disallowed.

Lumber—25%, but not exceeding an increase of 5c per 100 lb.

Grain and grain products to Fort William and Port Arthur—By addition of increases granted under the McAdoo order for similar mileages in adjacent U.S. territory, to rates in effect prior to Mar. 15, 1918. Where more than one tariff of a U.S. carrier in an adjacent state exists, the rate increase shall be that allowed on the lowest normal rate for the same or similar mileages in such contiguous territory under the McAdoo order; increases since granted by Board of Railway Commissioners to be disallowed. Provided that rates on said products shall not be greater from Edmonton than from Calgary.

Grain and grain products between local points and to the Pacific coast—By the addition of 25%, but not exceeding an increase of 6c per 100 lb. to tariffs in effect prior to Mar. 15, 1918, and by disallowing increases since made by the Board of Railway Commissioners.

Livestock—By the addition of 25%, but not exceeding an increase of 7c per 100 lb. where rates are published per 100 lb., or \$15 a standard 36 ft. car where rates are published per car; increases to be based on tariffs in effect prior to Mar. 15, 1918; increases since allowed by Board of Railway Commissioners to be disallowed.

Packing-house products and fresh meats—By the addition of 25% to tariffs in effect prior to Mar. 15, 1918; increases since allowed by Board of Railway Commissioners to be disallowed.

Bullion, base (copper or lead), pig or slab, and other smelter products—Rates from British Columbia smelters to Toronto and Hamilton to take rates from con-

tiguous U.S. smelting and shipping point, viz.: Northport, Wash., to Buffalo, N.Y., viz., 71½c per 100 lb.; Montreal to take the New York rate of 81½c per 100 lb. Rates to Canadian points, other than points in Eastern Canadian territory, to be advanced 25%. Rates on zinc for domestic consumption to be the same as on copper and lead.

Sugar, syrup and molasses—To be made on the basis and principle adopted hereunder for eastern territory.

(b) Commodity rates not included in foregoing list shall be increased 25%, calculated on tariffs in force prior to Mar. 15, 1918; increases since authorized by Board of Railway Commissioners to be cancelled.

(c) In applying the increases prescribed in this section, the increased class rates applicable to like commodity descriptions and minimum weights between the same points are not to be exceeded.

#### Territories Both East and West.

Minimum Charges—(a) After the increases hereunder made in class rates, no rates shall be applied on any traffic moving under class rates lower than the amounts in cents per 100 lb. for the respective classes as follows:

Classes	1	2	3	4	5	6	7	8	9	10
Rates	24	21	18	15	12	11	9	10	10	7½

(b) The minimum charge on less than carload shipments shall be as provided in Canadian Freight Classification, but in no cases shall the charge on a single shipment be less than 50c.

(c) Class Rates between eastern and western points—The portion of the rate applicable to eastern territory to be increased 25%, and the portion applicable to western territory, 25%, based on rate in effect prior to Mar. 15, 1918; advances subsequently allowed by board in western territory to be disallowed.

Commodity rates between eastern and western points—On that portion of the rate applicable to eastern territory, the appropriate increase granted hereunder for the commodity for local movements in eastern territory; and on the western portion, the appropriate increase granted hereunder for the commodity for local movement in western territory. Advances allowed by Board of Railway Commissioners in western territory, effective Mar. 15, 1918, to be disallowed.

(d) Import rates—To be increased, subject, as a maximum, to lowest rates obtaining from Baltimore or any North Atlantic seaport in the U.S. to the same destinations, except that the rates from Halifax, N.S., shall be increased so as to continue on the present relative basis.

(e) Disposition of fractions—In applying rates, fractions shall be disposed of as follows:

(1) Rates in cents, or in dollars and cents, per 100 lb. or per package. Fractions of less than ¼ or 0.25 to be omitted. Fractions of ¼ or 0.25 or greater, but less than ¾ or 0.75, to be shown as ½. Fractions of ¾ or 0.75 or greater, to be increased to the next whole figure.

(2) Rates per ton—Amounts of less than 5c to be omitted. Amounts of 5c or greater, but less than 10c, to be increased to 10c.

(3) Rates per car—Amounts of less than 25c to be omitted. Amounts of 25c or greater, but less than 75c, to be shown as 50c. Amounts of 75c or greater, but less than \$1, to be increased to \$1.

(f) Observance of differentials—In establishing the freight rates herein ordered, while established rate groupings and fixed differentials are not required to be used, their use is desirable, if found practicable, even though certain rates

may result which are lower or higher than would otherwise obtain.

(g) All schedules, viz., tariffs and supplements, published under the provisions of this order, shall bear on the title page the following, in bold-face type: "This schedule is published and filed on one day's notice with the Board of Railway Commissioners for Canada, pursuant to order in council No. 1863."

The Board of Railway Commissioners shall obtain from the three larger railway systems, the Grand Trunk, Canadian Pacific and Canadian Northern, the results of railway operation per month, and report on the same monthly to the Governor in council, through the Minister of Railways and Canals, to the end that, should the earnings of the said companies under this order be greater than the sum required to meet increased costs and permit transportation to be properly and efficiently carried on, the appropriate reduction in the rates fixed shall be made. The said reports and the books, accounts and records upon which the same are based, shall be open to examination and audit by the Government of Canada, under such regulations as may be hereafter prescribed by the Governor in council.

The provision herein, and the rates herein prescribed, shall be effective, if filed with the Board of Railway Commissioners, as and from Aug. 1, and shall remain in force for the duration of the present war, and until further orders, subject to the provisions of the section next preceding. Increase of rates may become effective after Aug. 12, 1918, and as and when filed.

### Grand Trunk Pacific Railway Betterments.

The company's traffic will, we are officially advised, enter Saskatoon, Sask., by a connection with the C.P.R. tracks east and west, the C.P.R. tracks, yards and facilities between the two points of connection being joint between the two companies. On the east the connecting line will start from the G.T.P.R. at Duro, connecting with the C.P.R. east of Engen, 3.23 miles. The western connecting line was parallel the joint spur to the government elevator, 0.945 of a mile.

The coal mixing plant at Edson, Alta., is, we are officially advised, being erected to utilize western Canadian coals. The products of three mines will be combined and mixed in this plant to give a fuel which, it is believed, will be entirely satisfactory for railway purposes. It will also enable full use being made of coal offering. The plant will have a reinforced concrete foundation and hoppers. The coal will be carried from the hoppers by conveying machinery to a discharging bin, from which it will either be loaded by car loaders into box cars or directly from the bin into gondola cars. The conveying plant will be in duplicate, and will have a capacity of 150 an hour. It will be operated by electric power.

The station to be built at Prince Rupert, B.C., will, we are officially advised, be a brick or tile and stucco structure, with the usual waiting-rooms, offices, etc., and an umbrella train shed. (July, pg. 297.)

The Canadian Government Railways, on July 22, put an embargo on the transfer of automobiles between the Nova Scotia and New Brunswick mainland and Prince Edward Island, and vice versa, so as not to interfere with freight traffic, which has been very heavy lately.



## Canadian Northern Railway Construction, Betterments, Etc.

**Eastern Lines Track Renewals.**—We are advised that it had been arranged that the C.N.R. should receive 67 lb. rails sufficient to lay 75 miles of track, out of the rails ordered by the Russian Government and lying at Vancouver, B.C. These rails were to be used to replace 55 miles of 56 and 60 lb. rails on the Quebec & Lake St. John Ry., and 20 miles to replace rails of similar light weight on the Halifax & South Western Ry. There appears to be some difficulty, temporary at least, in obtaining the release of these rails from Vancouver.

**Quebec Union Station.**—S. J. Hungerford, General Manager, Eastern Lines, was in Quebec, July 10, looking into the company's terminal facilities there. According to a press report, it is intended to build a passenger and freight station on St. Andrew St., on the site occupied formerly by the old Quebec & Lake St. John Ry. station, the new building to be used jointly by the C.N.R. and the Quebec & Saguenay Ry., which is a part of the Canadian Government Railways system. The new building will be larger than the one which has been demolished, as it will be laid out to meet the requirements of the lines mentioned for some years to come.

**Leaside Terminal Yards.**—The new terminal yard near Toronto lies immediately north of the C.P.R. right of way, and extends from opposite Leaside Jct. station easterly. The work at present in hand is the construction of a freight yard for about 600 cars; a passenger car yard for about 140 cars; a circle track for turning trains, and the buildings which were described in Canadian Railway and Marine World for July. The yards are planned so that additions may be made as required without interference with the work now being done. The grading of the yards is, we are officially advised, approximately 50% completed; the locomotive house and store, and the ice house, are nearly completed; the walls of the passenger car shop are practically completed; the foundations of the general store are in; the water tank is erected, and the foundations for the coaling plant and the turntable are nearly finished. The whole of the buildings are being erected by the company's own forces under the direction of G. C. Briggs, Supervisor of Buildings, and the company's own gangs will lay the rails and ballast the track. The cranes will be supplied by Northern Crane Works, Walkerville, Ont., and the coaling plant by Canadian Fairbanks-Morse Co.

**Ontario District.**—We are officially advised that a contract has been let to Chambers, McQuigge & McCaffrey for building a deviation on the Toronto-Sudbury line, about 1.25 miles, between mileage 139 and 141 on the Muskoka Sub-division. The purpose of the diversion is to avoid three trestles, the filling of which would be an expensive process. The diversion will reduce the gradient slightly and give a better alignment. The greater part of the grading will be through rock, and it is not expected to have the work completed until April, 1919.

**Central District.**—Application was made to the Regina, Sask., City Council, Jan. 11, for permission to build a spur track through Block 80, in order to supply trackage facilities to the T. Eaton Co. M. H. MacLeod, General Manager, was advised that formal permission would be granted at the council's next meeting. (July 16.)

**Western District.**—We are officially advised that a contract has been let to W. A. Dutton, Winnipeg, for grading on the line between Hanna and Medicine Hat, Alta. Some grading had been done previously and it is said that the present contract covers the section of the line to the proposed point of crossing of the Red Deer River.

With reference to track laying on the Oliver-St. Paul de Metis line, we are officially advised that everything depends upon when delivery of the rails can be made. The same condition, we are advised, applies to all other western lines upon which it is proposed to lay rails, details of which were given in our July issue, pg. 293.

In respect to a press report from Edmonton, Alta., that the company proposed to take up the rails on its line from Alberta Beach to Lobstick, 36 miles, and to run its trains over the approximately parallel Grand Trunk Pacific Ry., we are officially advised that the approval of the Railways Department would have to be obtained before this could be done.

**Vancouver Terminals.**—Tenders are reported to have been called for shifting of a further 2,000,000 cubic yards of filling in connection with the reclaiming of the False Creek area for railway purposes by the C.N. Pacific Ry.

**False Creek Wharf Litigation.**—The Dominion Department of Public Works has decided that the Champion and White wharf in the False Creek area of Vancouver, B.C., was erected without the department's sanction and must be removed, unless terms be arranged with the Canadian Northern Ry. and the city for its remaining. The owners of the wharf secured an injunction against the C.N.R., preventing it going ahead with part of its seawall construction because it interfered with access to the wharf. The injunction was upheld on appeal. The Department of Public Works' action will enable the railway to proceed with its development work.

**Vancouver Island Lines.**—In speaking at Victoria, the British Columbia Premier gave some details of his late negotiations with the Dominion Government upon the C.N.P. Ry. situation as affecting the B.C. Government since the company's system had been taken over by the Dominion. The principal portion of his speech, however, was directed to efforts made to get sufficient steel rails from those bought for Russia and lying at Vancouver, in order to lay track on the C.N.P.R. on Vancouver Island from Victoria to Sooke, 40 miles, and from Nitinat to Cowichan, 30 miles, in order to aid in getting out spruce for aeroplane work and logs for ship construction. If this could have been arranged for, the Imperial Munitions Board would have undertaken to build a logging railway through the timber limits to connect with the line. The Dominion Minister of Railways advised the B.C. Government, June 24, that the laying of additional track on the C.N.P.R. lines on Vancouver Island was bound up with the question of the province selling additional land on the Songhees reserve in Victoria for terminal purposes, and asked that a price be fixed for the land required. If this were done, the Dominion Government would accept rails to lay 140 miles of track, which the B.C. Government had offered to loan out of what it had purchased for the Pacific Great Eastern Ry., such rails to be returned from the Rus-

sian rails or from elsewhere. Seventy miles of the rails so loaned would be used on the lines mentioned on Vancouver Island, and the other 70 miles would be delivered in Alberta. On behalf of the B.C. Government, the B.C. Premier denied that there had been any difficulty about Songhees Reserve land, and added that the price would be fixed and the rails supplied.

The Premier is also reported to have stated in an interview on July 4 that consent to action in respect to further construction on Vancouver Island must be obtained from C.N.P.R. officials, and that the company objected to paying any higher price for terminal lands on the Songhees Reserve than the price paid by the C.P.R. (July, pg. 293.)

An Ottawa dispatch of July 19 stated that an agreement had been reached between the Dominion Railways Department and the British Columbia Government under which the Pacific Great Eastern Ry. rails offered by the B.C. Government will be used to lay 70 miles of track on C.N.R. lines on Vancouver Island, as soon as they can be delivered. The condition upon which the C.N.R. will do the work is said to be that the B.C. Government will grant it an additional 40 acres of the Songhees Reserve lands at Victoria for terminal purposes.

We were officially advised, July 25, that an arrangement has been made between the Dominion Minister of Railways, the Premier of British Columbia, and the C.N.R., subject to approval by the Dominion Government, by which the C.N.R. is to immediately undertake the completion of 70 miles of railways northward from Victoria. The rails are to be taken from a quantity which the province has on hand, in connection with the Pacific Great Eastern Ry., and are to be loaned for the present, pending an adjustment after the war. The province has also agreed to convey for railway terminal purposes at Victoria, about 30 acres of the old Songhees reserve, at \$8,000 an acre. (July, pg. 293.)

**Universal Mileage Scrip in United States.**—The U.S. Railroad Administration has announced that there will be placed on sale on or about Aug. 1 a universal mileage scrip at the basic rate of 3c a mile. Each coupon of the ticket will represent the value of 3c and can be used for the payment of sleeping and dining car charges and transportation of excess baggage, as well as transportation charges on all trains on railways under government control. The advantages of this simple form of ticket are obvious, and the change is expected to relieve the pressure on ticket agencies at busy centers. The war tax will be collected by conductors at the time of the presentation of the mileage scrip.

**Deputy Minister of Railways.**—With reference to the announcement in our last issue that Major Graham Airdrie Bell, C.M.G., heretofore Assistant to the Minister, and Financial Comptroller, Railways and Canals Department, had been appointed Deputy Minister, as well as Assistant to the Minister, the positions being amalgamated, we are advised that he has been appointed acting Deputy Minister, A. W. Campbell, Deputy Minister, having been granted a year's leave of absence, on the expiration of which, Major Bell will automatically take the title of Deputy Minister.



## Canadian Transportation Men, Engineers, Etc. in the War.

Timiskaming & Northern Ontario Railwaymen's Patriotic Association.—Up to Mar. 31, \$88,397.45 had been contributed to the Red Cross and Patriotic funds, exclusive of contributions by members of the commission.

### PERSONAL NOTES.

Lieut. H. D. Brydone-Jack, Vancouver, B.C., who has been awarded the Military Cross, was formerly on survey work on C.P.R. western lines.

Lieut. A. G. Bonn, Canadian Railway Troops, has been awarded the Military Cross. When the enemy had penetrated the line, he rallied his men and led them forward again to the original line, which, despite the intense shell and machine gun fire, the company maintained, although both its flanks were exposed. When the order to withdraw had been given, he assisted in carrying away a wounded non-commissioned officer under extremely heavy fire. His marked courage and gallantry, and his untiring devotion to duty, contributed greatly in holding up the enemy's advance.

E. W. Camp, son of W. J. Camp, Assistant Manager of Telegraphs, C.P.R., Montreal, has been given a commission as lieutenant in the Canadian Engineers, and assigned to overseas service. Lieut. F. E. Camp, another son, is an instructor in an Engineers' camp in England.

Lt.-Col. F. F. Clarke, commanding the 2nd Canadian Railway Troops, who, prior to entering the army was Chief Surveyor, Canadian Northern Ry., at Toronto, is referred to in a London, Eng., cablegram of July 27, as follows:—"Singular testimony as to how Canadian railway troops can fight as well as build railways is given in a story regarding the conferment of a bar to the Distinguished Service Order, possessed by Lt.-Col. Frederick Fieldhouse Clarke, of Toronto. In an attack lasting four days, he organized 16 Lewis guns from his battalion, making all arrangements for munitions to be brought on his own lorries. This unit was entirely self-contained. It is officially stated that 'The promptitude and alacrity with which they responded to the call for volunteers, and the splendid manner in which the defence was organized, and the coolness and enthusiasm displayed by all ranks, were largely due to the courage and inspiring example of the fine leadership of the commanding officer.'"

Lieut. E. W. DuVal, who has been reported as killed in action, was born at Toledo, Ohio, June 5, 1885, and entered railway service, July 1, 1902, since when he has been, to June 1, 1905, in Superintendent's office, Canadian Northern Ry., Winnipeg, and at Port Arthur, Ont.; June 1, 1905, to Jan. 2, 1911, successively, secretary to General Superintendent, Central Division, C.P.R., Winnipeg; chief clerk to Superintendent, District 2, Central Division, C.P.R., Winnipeg; assistant chief clerk to General Superintendent, Central Division, C.P.R., Winnipeg; chief clerk to General Superintendent, Western Division, C.P.R., Calgary, Alta.; chief clerk to Assistant General Manager, and, later, to General Manager, Western Lines, C.P.R., Winnipeg; Trainmaster, C.P.R. Terminals, Calgary, Alta.; Jan. 2, 1911, to Apr. 6, 1912, Superintendent, District 1, Saskatchewan Division, C.P.R., Moose Jaw; Apr. 6, 1912, to May, 1913, Superintendent, District 4, Manitoba Division, C.P.R., Souris; May, 1913, to Feb., 1917, Superintendent, Saskatoon Division, Sas-

katchewan District, C.P.R., Saskatoon. He took an officer's training course at Regina, Sask., early in 1917, and recruited a company of reinforcements for the P.P.C.L.I., and subsequently went overseas with them.

Capt. J. E. Finlay, Canadian Railway Troops, has been awarded the Military Cross. He organized and carried out an urgent piece of work under most difficult conditions, working for two days and nights without rest until it was completed. On the following morning, when the enemy was advancing, he showed great coolness in evacuating all his men under heavy shell fire.

Major Chas. Flint, B.A.Sc., 4th Battalion, Canadian Railway Troops, formerly Resident Engineer, C.P.R., Edmonton, Alta., who has received two promotions, has been awarded the Croix de Guerre for gallant and distinguished service.

Capt. R. D. Galbraith, Canadian Railway Troops, has been awarded the Military Cross. On finding that the troops of other units on his right flank had withdrawn, he brought his company out in good order to a support trench, 50 yards in the rear. Going forward himself with a machine gun to his old position, he inflicted very heavy casualties on the enemy. Having expended all the available ammunition, he withdrew his men again to a comparatively sheltered position, where he reorganized and reinforced his company with men of other units, and led it forward to his first position, and maintained it until relieved. His personal example, great courage, and devotion to duty had a most inspiring effect on all ranks.

Acting Lieut.-Col. H. F. H. Hertzberg, D.S.O., M.C., has been gazetted as Temporary Lieutenant-Colonel. He is a son of A. L. Hertzberg, Engineer, Ontario District, C.P.R., Toronto.

Major James Hesketh of the Canadian Railway Troops, was decorated with the Distinguished Service Order and the Military Cross, at an investiture at Buckingham Palace, July 9.

Lieut. A. W. Hott, Canadian Railway Troops, has been awarded the Military Cross. During an enemy attack, he was detailed with a small party to keep forward light railways open for traffic. He kept the lines in operation under heavy shell fire until he was almost surrounded, and then skilfully withdrew his men without casualties. By his coolness and determination he saved a large quantity of ammunition and valuable material.

Lieut. C. E. Knox, who was mentioned in dispatches by Field Marshal Sir Douglas Haig recently, is a son of R. R. Knox, Traffic Superintendent, Winnipeg Electric Ry. He left Canada with the 101st Battalion, and is now with the 16th Canadian Scottish, and has been in France for two years. Prior to entering military service he was chief clerk to his father in W.E.R. service.

Lieutenant L. Lanigan, of the Royal Air Force, reported killed in an airplane accident in England, July 12, was son of W. B. Lanigan, Assistant Freight Traffic Manager, C.P.R. Winnipeg.

Major T. A. Loudon, B.A.Sc., formerly of the Engineering Faculty, Toronto University, and of James, Loudon & Hertzberg, engineers, Toronto, has returned from the front, having been invalided in January. He was mentioned in dispatches.

Capt. Clarence M. Marpole, whose return on leave in June, was mentioned in our last issue, died at Vancouver, B.C., July 16, aged 38, following an operation for the removal of an abscess. He left Canada in 1915, with the 239th Railway Construction Corps and was later transferred to the 3rd Canadian Railway Troops, in France. Prior to going overseas, he was in business in Vancouver. He was a son of R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C.

Col. G. P. Murphy, of the Canadian Army Service Corps, and President, Ottawa Transportation Co., has been made a Commander of the Order of St. Michael and St. George.

Lieut. R. S. Richardson, 13th Light Railway Operating Co., R.E., formerly Superintendent, Canadian Government Railways, Fort William, Ont., writing from France early in June, said: "We have moved several times recently and have been acting in different capacities of labor. The men took it all with good grace, and now we are returning to our railway business once more, and everyone, officers and men, are delighted. We are tracklaying once more and will soon be operating again. I am confident that once the U.S. troops get going in full swing with us the situation will change very rapidly. June 6 was the anniversary of our arrival in France. We celebrated the day by service in the morning and by base ball, a tug of war and a tent pegging exhibition by the Fort Garry Horse in the afternoon, their officers and men being our guests. We had about 500 Canadians in the field."

Major William Sharp, Canadian Railway Troops, received the Military Cross at an investiture by the King, July 9.

W. L. Stone, formerly agent, C.P.R. Telegraphs, Edmonton, Alta., has been appointed to Y.M.C.A. work under the U.S. Army, and went overseas early in July.

J. C. K. Stuart, formerly on the Mount Royal Tunnel & Terminal Co.'s engineering staff at Montreal, has received a commission in the Royal Engineers.

E. D. Toye, formerly Division Storekeeper, Canadian Northern Ry., Trenton, Ont., who went overseas toward the end of 1916, as Quartermaster-Sergeant, No. 1 Construction Battalion, has been gazetted as a temporary lieutenant in the Canadian Militia, whilst serving with the Canadian Expeditionary Force, dating from Nov. 30, 1916.

Company Q.M.S. J. Watson, Canadian Railway Troops, has been awarded the distinguished conduct medal. During a withdrawal he succeeded in removing all the stores and equipment of his company, under an intense bombardment. On the following day, when rations were urgently needed, he went to a ration dump which was under heavy shell fire, and obtained the necessary supplies. On another occasion, he volunteered to remain behind and endeavor to save stores and equipment under heavy fire. He showed splendid coolness and resource.

W. Russell Way, B.Sc., son of W. B. Way, Superintendent, District 2, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., has been given a commission as lieutenant in the Canadian Engineers, and is attached to the Canadian Engineers' training depot at St. Johns, Que.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Edmonton & South Western Ry.**—The Edmonton, Alta., City Council has under consideration an application from the Hydro-Electric Power Co. for an extension of time for carrying out its contract to supply power in the city. A necessary part of the company's plans is a railway, from Edmonton to the Blue Rapids on the Saskatchewan River, where the power plant is to be located, and for the construction of which the E. & S.W. Ry. was incorporated by the Dominion Parliament. Under an agreement entered into in Mar., 1916, the company was to begin work in Jan., 1917, and was, within 2½ years, to expend \$1,500,000, and during the next two years approximately an additional \$2,000,000, unless prevented by causes beyond its control. The company reported that it had spent up to June, \$442,092 in connection with its plans, and that owing to war conditions the money for further development could not be raised. (May, pg. 186.)

**Grand Trunk Ry.**—Application is reported to have been made to the United States Government for aid in the completion of the Northern New England Ry. from Palmer, Mass., to Providence, R.I. This line is being built under the auspices of the Central Vermont Ry., which is controlled by the G.T.R. The line is about 65% completed, but no work has been done on it for several years. It is asked that aid to the extent of \$5,000,000 be provided. The matter came before F. L. Stuart, Chairman of the Budget Committee, Eastern Railways Region, in New York, July 2, and after hearing arguments, it was reported July 4, that the application would be given full consideration. (May, pg. 186.)

**Intercolonial Ry.**—Tenders were received to July 24, for building a siding 2,300 ft. long at mileage 21.3 from Moncton on the main line to Truro, N.S.

Some of the old shops in Moncton, N.B., yards are being pulled down to provide space for additional yard tracks.

Tenders are under consideration for building 40,000 gall. water tanks at Hampton, N.B., and West Bay Road, N.S.

Additional siding accommodation is being provided at Sackville, N.B., to handle the increasing traffic over the Prince Edward Island car ferry. A press report states that about three miles of new tracks are being laid.

At a celebration at Albert, N.B., July 1, in connection with the taking over of the Salisbury & Albert Ry. as an Intercolonial Ry. branch line, L. S. Brown, General Superintendent, Eastern Lines, C.G.R., was reported as saying that the work of bringing the line up to branch railway standard would be proceeded with at once.

C.G.R. officials made a trip of inspection recently over the Elgin & Havelock Ry., which was taken over as an Intercolonial Ry. branch June 1. It is said that the trip was made to see what work has to be done to bring the line up to the branch lines standard.

Work on the repair of the Moncton & Buctouche Ry. between Moncton and Buctouche, N.B., acquired recently as an Intercolonial Ry. branch, was started by the C.G.R. staff July 1. Some new rails are being laid, and a considerable amount of ballasting is being done. The principal part of the work is in the vicinity of Notre Dame, 19 miles from Moncton. (July, pg. 285.)

**Pacific Great Eastern Ry.**—A press report from Victoria, July 12, states that orders have been given by the British

Columbia Government for laying of rails on the right of way graded northwesterly from Clinton, B.C. The report says 29 miles of grading are ready for the track; that 50 cars of rails have been delivered, and that 30 more cars of rails are on the way. It is also expected to complete about six or seven more miles of grading and lay track on it this season.

It is reported that for the accommodation of trade between North Vancouver and Squamish, plans and specifications are being made for a nine car barge, and that tenders will be asked for its construction. The railway at present rents a barge from the C.P.R. at \$60 a day. (June, pg. 241.)

**Quebec, Montreal & Southern Ry.**—A Quebec press dispatch of July 9, stated that advices have been received from the Delaware & Hudson Co., owning the railway, that nothing will be done in the way of extending the railway from Fortierville to Quebec until after the war, by which time the question of terminal facilities for all south shore lines in Quebec will probably be settled.

**Quebec & Saguenay Ry.**—Canadian Government Railways officials made a trip of inspection over the completed section of this railway between St. Joachim and Baie St. Paul, July 5, in connection with arrangements for putting a regular train service in operation. The section of line acquired from the Quebec Ry., Light & Power Co. from St. Joachim to Quebec will be used for the operation of a service from Quebec to Baie St. Paul. Construction is in progress between Baie St. Paul and Murray Bay, and it is expected that this section of the line will be completed in the autumn. The length of the line from St. Joachim to Murray Bay is 54.54 miles, and connection is made there with a line 7.50 miles long, completed in 1911, to Point au Pic, near Nairns Falls.

Tenders were received to July 23 for building of stations, section houses, tanks, etc.

A project is reported to be under consideration for connecting the line with the Quebec & Lake St. John Ry. (C.N.R.) in Quebec, and using the terminals of that railway jointly. (See Canadian Northern Ry. Construction, etc.) (June, pg. 241.)

**St. John & Quebec Ry.**—The New Brunswick Government, on July 10, decided to permit the Nova Scotia Construction Co. to complete its contract for the building of the extension of this line, provided satisfactory guarantees are given that the work will be completed in the autumn. The section under construction is from Gagetown to a junction with the C.P.R. near Westfield, N.B., 37.8 miles. Track was laid during 1917, from Gagetown to Queenstown, 8.5 miles, and considerable progress has been made in grading on the remaining mileage. (July, pg. 285.)

**Toronto, Hamilton & Buffalo Ry.**—The Hamilton City Council has, after considerable delay, decided to grant a lease to the company for five years of the lands necessary for the extension of the company's yards in the city. The city opposed the extension of the yards, but the Board of Railway Commissioners approved the company's plans and recommended the city to grant a lease, on a basis of 7% of the original cost of the land, \$2,960, or on the present assessed value, as may be thought advisable. The city had asked \$933 a year, together with the construc-

tion of a public road along the property leased.

Negotiations between the Saltfleet Tp. Council and the company in connection with building a second track are in progress. It was reported July 12, that some preparatory work was being done between lots 32 and 33, con. 6. (June, pg. 241.)

## Canadian Northern Railway Construction, Betterments, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross		Net	
	Earnings	Expenses	Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
Dec.	3,273,200	3,207,900	65,300	758,500
Jan.	2,715,300	3,290,300	x575,000	1,057,100
Feb.	2,691,000	3,171,400	x480,400	588,600
Mar.	3,436,300	3,225,900	210,400	407,700
Apr.	3,958,100	3,416,800	541,300	216,600
May	3,762,000	3,381,100	380,900	673,500

	\$38,419,500	\$35,007,200	\$3,412,300	\$5,904,500
Inc.	\$ 1,223,400	\$ 4,681,100	.....	.....
Dec.	.....	.....	\$5,904,500	.....

Approximate earnings for June, \$4,031,100, and for three weeks ended July 21, \$2,522,100, against \$4,048,600 and \$2,710,000 for same periods 1917.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, compared with those of 1917, from Jan. 1, 1918:

	Gross		Net	
	Earnings	Expenses	Earnings	Increase
Jan.	\$10,789,818	\$9,621,824	\$1,167,993	\$1,263,485
Feb.	9,574,302	8,983,404	590,898	1,396,151
Mar.	12,427,915	9,435,134	2,992,781	944,536
Apr.	13,328,849	9,873,459	3,455,390	719,588
May	13,314,117	9,626,341	3,687,776	863,944
June	12,577,286	9,765,139	2,812,147	1,103,759

	\$72,012,289	\$57,305,302	\$14,706,985	\$6,290,464
Inc.	\$ 655,510	\$ 6,945,974	.....	.....
Dec.	.....	.....	\$6,290,464	.....

Approximate earnings for two weeks ended July 14, \$5,475,000, against \$5,968,000 for same period 1917.

## Grand Trunk Railway Earnings.

Aggregate from Jan. 1 to June 30:—

	1918	1917	Increase	Decrease
G.T.R.	\$26,162,263	\$24,169,070	\$1,993,193	.....
G.T.W.R.	4,879,272	4,687,643	191,629	.....
D.G.H. & M.R.	1,496,437	1,665,745	.....	\$169,308

Totals	\$32,537,972	\$30,522,458	\$2,015,514	.....
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Approximate earnings for three weeks ended July 21, \$4,512,218, against \$4,034,315 for same period 1917.

## Grand Trunk Pacific Ry. Earnings.

Approximate earnings for May, \$394,052; for June, \$456,787, against \$500,134 for May, and \$523,997 for June, 1917. Aggregate earnings from Jan. 1 to June 30, \$2,861,179, against \$2,509,457 for same period 1917.

**Railway Lands Patented.**—Letters patent were issued during June, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary & Edmonton Ry. ....	4,129.00
Canadian Northern Ry. ....	6,402.00
Edmonton, Dunvegan & British Columbia Ry. ....	416.21
Grand Trunk Pacific Ry. ....	12.18
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. ....	874.05

Total . . . . .	11,833.44
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## Mainly About Railway People Throughout Canada.

Mrs. E. N. Bender, wife of the General Purchasing Agent, C.P.R., died suddenly at Montreal, June 24.

Francis J. Cronk has been appointed Assistant Professor of Railway Engineering, Faculty of Applied Science, McGill University, Montreal.

Miss Florence Odell Bamford, only daughter of W. B. Bamford, District Freight Agent, C.P.R., Toronto, died there July 7, after a long illness.

H. G. Kelley, President, G.T.R. and Grand Trunk Pacific Ry., left Montreal early in July, for an inspection trip over the system to the Pacific coast.

S. G. Hatch, Passenger Traffic Manager, Illinois Central Rd., died suddenly in his office at Chicago, Ill., July 12. He was very well known in Canada.

E. D. Donald, who was accidentally killed by electric shock in a Toronto munitions plant, recently, was the only son of E. Donald, Land and Tax Commissioner, G.T.R., Montreal.

A. W. Smithers, Chairman of the Board, G.T.R., London, Eng., has been adopted as the conservative and unionist candidate for the British Parliament, for the Chiselhurst Division of Kent, at the next election.

Mrs. T. H. Cooper, who died at Toronto, July 18, was widow of the late T. H. Cooper, at one time in G.T.R. service, and mother of D. D'E. Cooper, until recently, Canadian Freight Agent, Lehigh Valley Rd., Toronto.

S. B. Wass, Engineering Department, Canadian Government Railways, Moncton N.B., while travelling over the track near Penobsquis, N.B., July 10, collided with another car, and suffered a compound fracture of a leg.

H. G. Kelley, President G.T.R. and G.T. Pacific Ry., left Montreal, July 6, for Winnipeg. He left Winnipeg for the Pacific Coast July 10, accompanied by W. P. Hinton, Vice President and General Manager, G.T.P.R.

W. R. Smith, Chief Engineer, Edmonton, Dunvegan & British Columbia Ry., Edmonton, Alta., addressed the Calgary Rotary Club, July 11, on the resources of the territory opened for settlement by his company's lines.

Sir Henry Mather Jackson, Bart., Vice Chairman, G.T.R. and Grand Trunk Pacific Ry., and associated with several other railway companies in Great Britain and Havana, has been created a Commander of the Order of the British Empire.

J. F. Kane, who has been elected Secretary, Pullman Co., Chicago, Ill., was born and educated at Ingersoll, Ont., and entered the Pullman Palace Car Co.'s service Sept. 1, 1891, as a telegraph operator, and was appointed Paymaster in 1904, and Assistant Secretary in 1913.

R. E. Marks, who has been appointed Passenger Trainmaster, Eastern Lines, G.T.R., Montreal, entered G.T.R. service Mar. 27, 1897, as brakeman on the Belleville Division, was promoted to conductor May 15, 1906, and acted as such until his appointment to his present position.

Mrs. H. D. Reid, wife of the President, Reid Newfoundland Co., died at St. John's, Nfld., July 12, after a long illness. Although an invalid for many years, she took considerable part in many of the philanthropic organizations brought into being by the war, and contributed largely to them.

D. C. Corbin, formerly President, Spo-

kane International Ry., died at Spokane, Wash., June 28, aged 85. He was considerably interested in railway and mining properties in the west. The Spokane International Ry. was acquired by Minneapolis, St. Paul & Sault Ste. Marie Ry. and C.P.R. interests last year.

John Gordon, who died at Toronto, July 4, aged 88, was born in Scotland, and came to Canada at the age of 22. He entered railway service with the Toronto, Grey & Bruce Ry., and on the absorption of that road by the C.P.R., remained with the latter company, as roadmaster. He retired from active service about 20 years ago.

W. E. Weegar, whose appointment as Trainmaster, Districts 30, 31 and 32, Ottawa Division, Ottawa, Ont., was announced in our last issue, entered G.T.R. service No. 17. 1887, since when he has



W. E. Weegar, Trainmaster, Ottawa Division, Grand Trunk Railway.

been, to Nov. 12, 1899, brakeman; Nov. 12, 1899, to Jan. 20, 1913, conductor; Jan. 20, 1913, to June 22, 1918, Passenger Trainmaster, Montreal.

W. C. Riddell, who has been appointed Advertising Agent, Grand Trunk Pacific Ry., Winnipeg, was born at Port Dover, Ont., and was for many years connected with newspaper and printing work at various point in Ontario. He entered G.T.R. service in 1902, and has since been chief clerk to the General Advertising Agent, G.T.R., Montreal.

F. A. Delano, member of the U.S. Federal Reserve Board, has resigned to accept a commission in the Corps of Engineers, U.S. Army, to engage in railway construction and management in France. He was President and Receiver, Wabash Rd., from 1905 to 1913, at which latter date he became President, Chicago, Indianapolis & Louisville Ry.

E. P. Quirk, who died at Montreal recently, was born in Ireland, and came to Canada in 1874. He was for some time

engaged on harbor works there, and later became associated with various railway undertakings in the vicinity, including the North Shore Ry., Northern Colonization Ry., St. Jerome Ry., South Eastern Ry., Montreal & Chambly, Pontiac Ry., and Montreal & Sorel Ry.

T. H. Gilmour, K.C., Solicitor, Western Lines, Canadian Government Railways, Winnipeg, visited Ottawa, Moncton and Toronto recently, particularly in connection with the operations of the act passed at the Dominion Parliament's last session, which provides that Dominion Government employes shall be subject to the provisions of the workmen's compensation acts in force in the various provinces.

William Edward McGill, who was appointed Assistant Superintendent, Montreal Terminals Division, Quebec District, C.P.R., Montreal, recently, was born at Toronto, Apr. 5, 1884, and entered C.P.R. service in 1900, since when he has been, to 1916, trainman and conductor, Farnham, Que., London and Toronto, Ont.; Feb. to Oct. 1916, Assistant Superintendent, Bruce Division, Ontario District, Toronto; Oct., 1916, to May, 1918, Assistant Superintendent, Sudbury Division, Algoma District, Sudbury, Ont.

John Vass, whose appointment as Assistant Master Mechanic, Ontario Lines, G.T.R., Allandale, was announced in our last issue, was born at Braidwood, Scotland, and went to the U.S. in 1888, and was, to 1894, locomotive fireman, Wabash Rd., Chicago, Ill.; 1894 to 1895, locomotive fireman, G.T.R., Battle Creek, Mich.; 1895 to 1903, locomotive man, G.T.R., Battle Creek, Mich.; 1903 to June, 1918, Road Foreman of Locomotives, Nichols, Mich. On leaving to take up his new duties, he was presented with a chest of silver by associates and other friends.

W. A. Brown, General Superintendent, Western District, Canadian Northern Ry., Edmonton, Alta., who was severely injured in a motor accident on the Brazeau Branch, May 11, is progressing favorably at Jasper Park, Alta., and it is expected that within a short time he will have sufficiently recovered to resume his duties. Five ribs were broken on the right side close to the vertebrae, and from the nature of the break it was expected that it would take some time to heal. He, however, attended at his office until June 17, when he decided to ask for leave of absence.

Leslie Langmuir Grabill, who has been appointed General Baggage Agent, G.T.R., Toronto, was born at Walkerton, Ont., Feb. 6, 1878, and educated in the public and high schools there. After a course in a mercantile business, he entered G.T.R. service in May, 1897, since when he has been to Jan., 1898, freight porter; Jan., 1898, to June, 1905, baggage porter and checker, Bonaventure Station, Montreal; June, 1905, to Dec. 15, 1907, baggage agent, same place; Dec. 15, 1907, to Jan. 1, 1909, chief clerk, General Baggage Agent's office, Toronto; Jan. 1, 1909, to July 31, 1918, Assistant General Baggage Agent, Toronto.

J. J. Sullivan, who has resumed duties as Roadmaster on the C.P.R., after returning from the front, was born at Fishers, N.Y., Apr. 29, 1866. He entered C.P.R. service in July, 1897, since when he has been, to June 20, 1901, rodman, instrument man, etc., on construction; June 20, 1901, to Dec. 1, 1903, Assistant Engineer; Dec. 1, 1903, to Jan. 1, 1907, Construction Engineer; Jan. 1 to Dec. 31,



1907, Assistant Engineer on location; Feb. 13, 1911, to July 11, 1912, Assistant Engineer on construction; Aug. 17 to Oct. 1, 1915, general trackman; Oct. 22, 1915, to July 20, 1916, Roadmaster. He went overseas as Major in the Canadian Railway Troops, and returned early this year.

**John D. Farrell**, who has been elected Vice President, Union Pacific System, was born at Brasher Falls, N.Y., July 31, 1856, and entered railway service as a track laborer in 1877. He was brought to Canada by the late Sir William Van Horne, and was from July, 1882, to May, 1883, chief clerk, and foreman of bridges, buildings and water department, C.P.R., Winnipeg; May, 1883, to Aug., 1884, Assistant Superintendent, Bridges, Buildings and Water Department, Western Lines, C.P.R., Winnipeg. He then returned to the U.S., where his subsequent railway service was given. Latterly he occupied the position of President, Oregon-Washington Rd. and Navigation Co., at Portland, Ore.

**D. H. McDougall**, heretofore General Manager, Dominion Steel Corporation, Sydney, N.S., has retired from that position and has been elected President, Nova Scotia Steel & Coal Co., New Glasgow, N.S., succeeding F. H. Crookard, who has resigned and returned to the United States. Mr. McDougall, who is 39 years of age, started work as assistant to the Dominion Coal Co.'s field engineer, subsequently occupying different positions in that company's service and in that of its successor, the Dominion Steel Corporation, his whole professional and business career having been with those companies, except for two or three years, when he was on engineering and construction work on the New York Central Rd.

**Fred Leonard Lamplough**, whose appointment as Superintendent, Ottawa Division, Eastern Lines, G.T.R., Ottawa, Ont., was announced in our last issue, was born at Cambridge, Vt., Aug. 15, 1867, and entered railway service in Oct., 1882, since when he has been, to Jan., 1883, timekeeper, Canada Atlantic Ry., Alexandria, Ont.; May, 1883, to May, 1884, assistant agent, same road, Greenfield and Alexandria, Ont.; May, 1884, to June, 1885, operator and agent, same road at various points; June, 1885, to July, 1886, operator in dispatcher's office, same road, Ottawa; July, 1886, to Jan., 1900, track dispatcher same road, Ottawa; Jan., 1900, to Apr., 1907, Chief Dispatcher, same road and G.T.R., Ottawa; Apr., 1907, to June, 1918, Trainmaster, G.T.R., Ottawa.

**Louis Drago** who died at Niagara Falls, Ont., July 10, aged 57, from pneumonia after a few days' illness, was born at Prairie Siding, near Chatham, Ont., and entered Great North Western Telegraph Co.'s service about 35 years ago, at Niagara Falls, Ont., as operator. He subsequently entered New York Central Rd. service, and was for several years, to Oct., 1908, Canadian Passenger Agent, Toronto. He was then transferred to Niagara Falls, Ont., in charge of the union ticket office at Clifton Hotel, later re-entering Great North Western Telegraph Co.'s service, latterly occupying the position of night operator at Niagara Falls, Ont. He leaves a widow and eight children and an aged mother. He began work and ended it under Geo. Phemister, Local Manager, G.N.W.T. Co., at Niagara Falls.

**G. A. Stokes**, whose appointment as Terminal Superintendent, G.T.R., Toronto, was announced in our last issue, was born in Nassagaweya Tp., Ont., July 23, 1879, and entered G.T.R. service Nov. 15, 1897, since when he has been, to Oct. 15, 1898,

operator, Listowel, Ont.; Oct. 15, 1898, to Mar., 1899, relieving agent; Mar., 1899, to Apr., 1907, agent, consecutively, at Harriston, Wingham, Wiarton and Brantford, Ont.; Apr., 1907, to Nov. 1, 1910, dispatcher, Stratford, Ont.; Nov. 1, 1910, to Sept. 13, 1912, Yardmaster, Don Station, Toronto; Sept. 13 to Oct. 25, 1912, General Yardmaster, Toronto Terminals; Oct. 25, 1912, to Aug. 10, 1913, Terminal Superintendent, Toronto; Aug. 10, 1913, to Nov. 4, 1915, Division Agent, Ontario Lines, Toronto; Nov. 4, 1915, to June, 1918, Superintendent, Sarnia Tunnel Terminals, Port Huron, Mich.

**J. M. R. Fairbairn**, who has been appointed Chief Engineer, C.P.R., Montreal, was born at Peterborough, Ont., June 30, 1873. He graduated from the School of Practical Science, Toronto, in 1893, and until Aug., 1901, was engaged in survey and construction work, since when he has been, to Nov., 1902, Assistant Engineer, Maintenance Department, Eastern Lines, C.P.R.; Nov., 1902, to Aug., 1904, Resident Engineer, District 4, C.P.R., Ottawa; Aug., 1904, to Aug., 1905, Assistant



**Major Graham Airdrie Bell, C.M.G.**, Acting Deputy Minister of Railways and Canals.

Engineer, Chief Engineer's office, C.P.R., Montreal; Aug., 1905, to Mar., 1906, acting Division Engineer, Eastern Division, C.P.R., Montreal; Mar., 1906, to Nov., 1907, Division Engineer, Ontario Division, C.P.R., Toronto; Nov., 1907, to Oct., 1908, Division Engineer, Eastern Division, C.P.R., Montreal; Oct., 1908, to Oct., 1910, Principal Assistant Engineer, Eastern Lines, C.P.R., Montreal; Oct., 1910, to Feb., 1911, Engineer of Maintenance of Way, Eastern Lines, C.P.R., Montreal; Feb. to Sept., 1911, acting Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal; Sept., 1911, to July 1, 1918, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal.

**J. E. Quick**, who has retired from the position of General Baggage Agent, G.T.R., Toronto, after 47 years of service with the company and its acquired lines, was born at Richmond, N.Y., July 19, 1851. He entered railway service in 1871, since

when he has been, to 1874, baggage master and supply clerk, Port Huron & Lake Michigan Ry.; 1874 to 1876, General Baggage Agent and ticket clerk, same road; 1876 to 1884, agent, Port Huron, Mich., and General Baggage Agent, Chicago & Grand Trunk Ry.; 1884 to Apr. 15, 1896, General Baggage Agent, same road, and Detroit, Grand Haven & Milwaukee Ry.; Apr. 15, 1896, he was appointed General Baggage Agent, G.T.R., and Aug., 1908, also General Baggage Agent, Grand Trunk Pacific Ry., relinquishing the latter position in Jan., 1916. He was elected Secretary of the American Association of General Baggage Agents, July, 1885, and has been re-elected at each annual meeting since. He is one of the surviving charter members of the association, which was formed in 1882. Prior to leaving his office, he was presented with an engraved diamond and gold locket, by a number of his associates.

**Major Graham Airdrie Bell, C.M.G.**, who has been appointed acting Deputy Minister of Railways and Canals, was born at Perth, Ont., Oct. 13, 1874, the son of James Bell, at one time Registrar for the south riding of Lanark County, and grandson of Rev. William Bell, a Presbyterian clergyman, who went to Perth, Ont., when it was opened as a military settlement, and was in the British Government's service as a clergyman there. He was educated at Perth public school and the collegiate institute. He entered government service at Ottawa, Dec. 1, 1890, with a temporary appointment in the Post Office Department, and received a permanent appointment in the Railways and Canals Department July 6, 1893, and has since advanced through the various grades in the accounting and auditing branches of the department. He was appointed Financial Comptroller, Sept. 1, 1908, and Assistant to the Minister, Jan. 1, 1917, holding that position until June 22, when the positions of Assistant to the Minister and Deputy Minister were combined, and he assumed the combined duties, with the title, for the present, of acting Deputy Minister. On the expiry of the year's leave of absence granted the Deputy Minister, A. W. Campbell, Major Bell will succeed to that position. He received a commission as lieutenant in the 43rd Duke of Cornwall's Own Rifles in 1900, and has passed the various grades to the rank of major. In 1912 he went to England at the request of the National Rifle Association to act as range officer at Bisley, and is the only Canadian officer who has held that position. At the end of that year he was appointed executive officer of the Dominion Rifle Association, which position he held until the outbreak of war. During 1915, he spent several months in France and England on special service, and was in the 207th Battalion, Canadian Expeditionary Force, during training, when he was recalled to civil duties. He was made a Companion of the Order of St. Michael and St. George in June, 1917.

**John G. Sullivan**, who has resigned as Chief Engineer, Western Lines, C.P.R., Winnipeg, to engage in private practice there, was born at Bushnell's Basin, N.Y., Jan. 11, 1863, and graduated C.E. from Cornell University in June, 1888. He entered railway service in July, 1888, since when he has been, to Mar., 1889, rodman, Great Northern Ry.; Apr., 1889, to Aug., 1890, rodman, instrument man and assistant engineer, Spokane Falls & Northern Ry.; Aug., 1890, to May, 1893, Assistant Engineer, Great Northern Ry. coast lines; July, 1893, to Feb., 1894, Assistant Engineer, Alberta Ry. & Coal Co.; July to Oct., 1894, section foreman, Northern



Pacific Ry.; Oct., 1894, to Apr., 1895, Locating Engineer, Butte Anaconda & Pacific Ry.; Apr. to Dec., 1895, Division Engineer, Kaslo & Slocan Ry.; Dec., 1895, to Feb., 1901, Locating and Reconnaissance Engineer, and Engineer in charge of construction, Columbia & Western Ry.; Feb., 1901, to Sept., 1905, Division Engineer of Construction, Western Lines, C.P.R.; Sept., 1905, to Feb., 1907, Assistant Chief Engineer, Panama Canal; Feb., 1907, to Sept. 15, 1908, Manager of Construction, Eastern Lines, C.P.R., Toronto; Sept. 15, 1908, to Jan. 1, 1911, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal; Jan. 1 to Oct. 9, 1911, Assistant Chief Engineer, Western Lines, C.P.R., Winnipeg, and from Oct., 1911, to July 1, 1918, Chief Engineer, Western Lines, C.P.R., Winnipeg. The chief work with which he has been concerned of recent years, is the construction of the Connaught Tunnel on the C.P.R. through the Rocky Mountains. He was President of the American Railway Engineering Association for 1917. In connection with Mr. Sullivan's retirement from C.P.R. service, D. C. Coleman, Assistant General Manager, Western Lines, C.P.R., said: "The withdrawal of Mr. Sullivan from active service is deeply regretted by all the officers who have been associated with him. We fully recognized his great abilities, and are proud of the fact that he stood at the very top of his profession in America. His name will always be honorably associated with the great programme of construction and betterments carried out by the railway during the past few years. Apart from his qualifications as an engineering officer, his personal qualities won for him the affectionate regard of all the officers in the west. We are glad that his association in a consultative capacity means that we will still have the benefit of his counsel."

### Freight and Passenger Traffic Notes.

Alberta stock raisers are asking the railways in the province to grant special rates over their lines for the carriage of hay and other feed for next winter's requirements.

The Northern Construction Co., which bought a large quantity of tile in Alberta and consigned it to Vancouver via C.P.R., sought recently to recover from the C.P.R. for tiles damaged in transit. It was shown that the loss by breakage was only about 2%, which the court did not consider excessive and the action was dismissed with costs.

The Board of Railway Commissioners was asked, July 9, to order the restoration of passenger train service on the C.P.R. between Ottawa and Waltham, such as existed prior to 1916. The company contended that the traffic on the extra train asked for would not compensate it for the extra cost of coal and for the wages of the train crew. Decision was deferred.

**Dismantled Railway Lines in Alberta.** The roadbed of the Canadian Northern and Grand Trunk Pacific Railways between Lobstick, on the C.N.R., and Resplendent on the G.T.P.R., about 300 miles, from which the steel rails were removed for shipment to France, is to be used as a highway to Kamloops, B.C. We are officially advised that the Department of the Interior's Parks Branch is having surveys made in connection with the project. Until a definite decision has been reached, the steel bridges on the railway will be allowed to remain.

### Railway Rolling Stock Orders and Deliveries.

The Canadian Locomotive Co. has delivered 3 switching (0-6-0) locomotives to Canadian Government Railways.

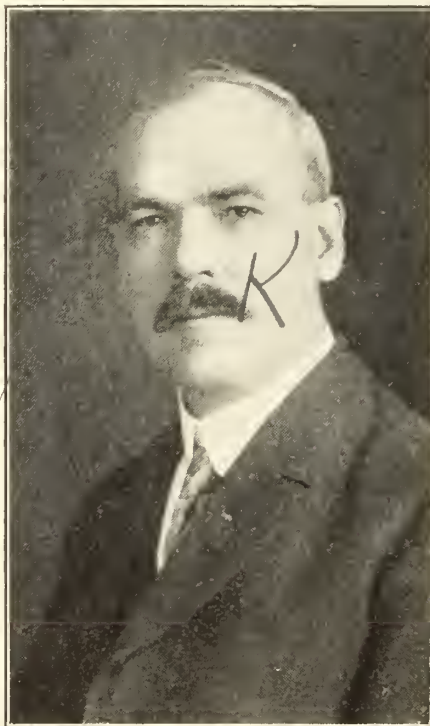
The G.T.R. has received 148 box cars, 80,000 lb. capacity, from American Car & Foundry Co.

The Canadian Copper Co. has ordered an all steel standard gauge snow plough from Canadian Car & Foundry Co.

The National Steel Car Co., since June 18, has shipped 470 box cars, with drop shutters, hand brakes and outside brake chain, to the Paris, Lyons & Mediterranean Ry., France.

The Dominion Iron & Steel Co. ordered recently, from Canadian Car & Foundry Co., 8 pairs of Simplex 80,000 lb. trucks, with solid side truck bearings 65 in. centers, for delivery in July.

Canadian Government Railways have placed two orders with Canadian Car & Foundry Co., covering repairs on approx-



W. C. Riddell,  
Advertising Agent, Grand Trunk Pacific Railway.

imately 400 cars, some of which will be changed into open pulpwood cars.

The C.P.R. received the following additions to rolling stock from its Angus shops, Montreal, between June 18 and July 16,—2 steel mail cars, 7 express refrigerator cars and 4 decapod type locomotives.

The Dominion Government has bought from D. R. Morrison & Sons, Summer-side, P.E.I., 16 second hand dump cars, and 1 second hand saddle dinkey locomotive, 3½ ft. gauge, all for \$4,500, for use on the Prince Edward Island Ry.

The Dominion Government has bought 24 dump cars, 12 yard capacity, from the Dominion Dredging Co., at \$1,060 each. They were being used under rental by the Canadian Northern Ry. in connection with its Montreal tunnel and terminal work, and will be leased, sold or otherwise disposed of, by the government, to the C.N.R.

The Canadian Government Railways are building 200 wood underframe Hart convertible cars in their shops at Transcona, Man., at a total cost of \$625,000. They are of 50 tons capacity, side and center dump, similar to the 200 of the same type ordered in May and mentioned in our last issue, and which are being built by the Canada Car & Foundry Co. at its Fort William plant.

Following are chief details of the 15 Pacific and 20 switching locomotives which the Dominion Government has ordered from the Montreal Locomotive Works, as mentioned in our last issue. Of these locomotives, the 15 Pacific and 10 switching locomotives are for the G.T.R., and the other 10 switching locomotives for the Grand Trunk Pacific Ry.

	Pacific.	Switching.
Cylinders, diam. and stroke . . . . .	24 x 28 in.	21 x 26 in.
Driving wheels . . . . .	69 in.	51 in.
Boiler, diam. . . . .	72½ in.	68 in.
Boiler pressure . . . . .	200 lb.	180 lb.
Firebox . . . . .	108 x 75¼ in.	95-15/16 x 41¼ in.
Tubes, no. and diam. . . . .	228-2 in.	158-2 in.
	32-5½ in.	21-5½ in.
Tubes, length . . . . .	20 ft.	12 ft. 5 in.
Heating surface, firebox . . . . .	215 sq. ft.	132 sq. ft.
Heating surface, tubes . . . . .	3,302 sq. ft.	1,391 sq. ft.
Heating surface, total . . . . .	3,517 sq. ft.	1,523 sq. ft.
Grate area . . . . .	56.5 sq. ft.	27.5 sq. ft.
Wheel base, driving . . . . .	13 ft.	12 ft.
Wheel base, engine . . . . .	33 ft. 10 in.	12 ft.
Weight on drivers . . . . .	170,000 lb.	154,400 lb.
Weight, front truck . . . . .	46,000 lb.	
Weight, rear truck . . . . .	48,000 lb.	
Weight, total . . . . .	164,000 lb.	154,000 lb.
Tractive power . . . . .	39,700 lb.	34,400 lb.
Factor of adhesion . . . . .	4.3	4.49
Tank capacity . . . . .	7,800 gall.	4,560 gall.
Coal capacity . . . . .	12 tons	6 tons
Valve motion . . . . .	Walschaert	Walschaert
Driving wheel centers . . . . .	Cast steel	Cast iron
Tender wheels . . . . .	Roller steel	Tires and retaining rings
Safety valves . . . . .	3-3 in.	2-3 in.
Tender type . . . . .	C.G.R.	C.G.R.
Cab . . . . .	Vestibule	C.G.R.
Grate shakers . . . . .	Pneumatic	Hand
Steam heat . . . . .	Gold	Gold or Vapor
Driving box shoes . . . . .		
and wedges . . . . .	Franklin	Brass
Reverse gear . . . . .	Lever type	Casey-Cavin
Headlights . . . . .	Pyle National	Pyle National

**Twist Drills Investigation.**—A series of experiments to disclose certain facts regarding the performance of metal drills has been completed by the University of Illinois Engineering Experiment Station, and the results published as bulletin 103. One-inch drills of many standard makes and special cast iron blocks made in the shop laboratories were used. The power required at the drill point for different speeds and rates of feed was noted in all tests, the thrust and torque of the drill were recorded by special dynamometers, and the endurance of drills of different designs was studied. The economical helix angle, point angle, clearance angle, speed, and feed were determined, and the effects of pilot holes and rounded corners were shown. Copies of the bulletin may be had free by addressing the Engineering Experiment Station, University of Illinois, Urbana, Ill.

**The Sea Foods Special.**—Following a conference of transportation officials, the principal shippers of fish, the Canada Food Board and representatives of the Canadian Fisheries Association, which was called by the Naval Service Department, and which met recently in Montreal, additional excellent transportation facilities for fish from the Atlantic coast to inland points has been provided. A train, known as the "Sea Foods Special," leaves Mulgrave and Halifax, N.S., on Thursday, Friday and Saturday of each week, hauling refrigerator cars for the transportation of fresh fish. The train operates on a practically express basis, and the cars are hauled right through to Montreal and Toronto.



# Canadian Railway AND Marine World

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TORONTO, CANADA, AUGUST, 1918.

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## The Canadian Railway War Board's Work.

**Accidents to Employees.**—The board's attention having been directed to the large number of accidents to employees which occur through persons being struck by cars "kicked" into yard tracks or sidings at intermediate stations, apparently without proper warning being given, it is urged that member lines direct those of their officers and employees concerned to redouble the efforts to avoid personal injuries, and where safety first departments are employed, to have these organizations give particular attention to the elimination of accidents attributable to operations such as those above mentioned.

**Car Delays.**—In reference to delays to cars at Montreal and other Canadian ports served by Canadian lines, while awaiting orders from various organizations, the board considers that the growing demand for freight cars, which will become heavier as time advances, necessitates the handling of export as well as other traffic in a manner that will permit of cars being released with the least minimum delay. Reports received by the board show that large numbers of cars of export freight have been seriously delayed awaiting orders from ocean steamship lines and others. This practice is similar to that which formerly existed in other countries and which caused car shortage and congestion of unprecedented severity. In view of the burden which will be placed upon sea port terminals during next autumn and winter, and the shortage of box cars that will undoubtedly exist, the board feels that pressure must be brought to bear upon those concerned to unload export freight much more promptly than has been the case heretofore. Action has therefore been taken as an incentive to speedy releasing of cars to apply existing demurrage regulations to export shipments, allowance being made of course for a longer period of free time than in the case of domestic traffic.

**Car Inspection, Etc.**—As separate car inspection and recording staffs are maintained at some interchange points, member companies have been urged, in view of the saving in men and other economies accruing from the employment of joint staffs, to arrange for the adoption of a joint system.

**Cars on Foreign Lines.**—Although the number of box cars in Canada has become greater during the past three months by approximately 14,000, the increase consists almost entirely of U.S. owned equipment which is now being loaded home rapidly. In the meantime the number of Canadian owned box cars on foreign lines has remained stationary, this being due in part to a relaxation on some member railways of the regulations restricting the use of Canadian owned cars to points on Canadian lines. As Canadian railways will, according to all present indications, be called upon to move an unprecedented volume of grain and other foodstuffs during the ensuing autumn and winter, and as experience has shown that the great majority of foreign cars are defective to an extent to render them unsuitable for this traffic, it is imperative, if the demand is to be met, that member lines take action to see that Canadian owned box cars are held, until further notice, in service on Canadian railways. Member lines have been directed to re-issue instructions to those of their officers and employees concerned, prohibiting the loading of Canadian owned box cars contrary to the foregoing, and in addition thereto to in-

struct employees at interchange points with member lines, that in the case of cars being offered in interchange by such connecting member line, loaded or billed in violation of these instructions, the cars to be refused, the offering line to bear any expense involved in such refusal, including per diem charges and cost of transshipping. A member line becoming aware of its box cars being loaded to foreign railways in violation of the foregoing regulations is asked to report full particulars to the board.

In view of the comparatively plentiful supply of U.S. owned box cars at present available in Canada, and with proper intro-line distribution, the practice of using Canadian owned cars for international traffic, goods being transferred to U.S. cars at boundary points, involving as it does, considerable delay to cars and expenditure of labor and money, should be discontinued. Member lines have been asked to issue instructions accordingly to those of their officers and employees concerned.

**Cars on U.S. Government Controlled Lines.**—Certain lines of Canadian railways operating in the United States are now operated by the U.S. Government. Canadian box cars entering thereon are automatically absorbed in the box car pool existing on U.S. lines and are thereby taken from Canadian service. It is essential, if an adequate supply of grain cars is to be available for movement of the 1918 crop, that Canadian box cars be retained in Canada. By way of taking further action to avoid loss of Canadian box cars, existing instructions have been amended to prohibit the loading of Canadian owned box cars to points on Canadian lines in the U.S., except when consigned to a point located upon the line of the owner of the car; for example, G.T.R. box cars, but no other Canadian owned box cars, may be loaded to points on the G.T.R. in the U.S.

**Cars Received Under C.S.S. Orders.**—In the event of Canadian owned cars being received by a Canadian line under a car service section order, such Canadian cars, unless belonging to the road in whose favor order issued, must be diverted to owner instead of being moved through to receiving line on c.s.s. order billing. Deficiencies in deliveries under c.s.s. orders, resulting from abstraction of Canadian cars as above, should be promptly reported to the board, so that adjustment may be arranged by placing of supplementary order or in some other suitable manner.

**Rails for Sidings.**—The board has recommended member lines that the prices for second hand relaying rails, disposed of to industries for sidings, etc., should be the same as fixed by the United States Railroad Administration, viz: from \$55 to \$65 a gross ton, depending upon quality and location, f.o.b. carriers' tracks nearest to delivery point. In general, the price for good second hand rails, for sidings and spur tracks, should be \$60 east of the Rocky Mountains, and \$65 west of them, except that light inferior rails may be sold at from \$55 to \$60.

**Cornwall Terminal Co., Ltd.,** has been incorporated under the Dominion Companies Act, with \$100,000 authorized capital, and office at Montreal, to carry on a general warehousing and wharfinger and forwarding business, and in connection therewith, to own and operate warehouses, railways, tramways and other means of transportation, and to own and operate steam and other vessels.



# Traffic Orders by Board of Railway Commissioners.

## Grand Trunk Pacific Steamship Co.'s Freight Rates.

Commissioner Boyce gave the following judgment June 26, which was concurred in by the Assistant Chief Commissioner, D'Arcy Scott:—

This complaint was on the list for hearing at Vancouver, June 6, 1918, and the parties were notified. No one appeared in support of the complaint, and counsel for the respondents showed cause. Objection was taken to the board's jurisdiction to adjudicate upon the issues involved, on the ground that the tariff filed, and in question, was a special local freight tariff (port to port) of the G.T.P. Coast Steamship Co., which, while admittedly a subsidiary company of the Grand Trunk Pacific Ry. Co., was not, within the meaning of sec. 7 of the Railway Act, a company whose vessels were owned, chartered, used, maintained or worked by the G.T.P.R., nor, as it was contended, was such railway company (within the meaning of such section) a party to any arrangement for using, maintaining or working the steamship company vessels for carrying traffic by sea or by inland water between any ports or places in Canada.

The tariff filed by the steamship company is a purely local, port to port, tariff applicable only for carriage by water between Victoria and Vancouver, B.C., Seattle, Wash., and ports of call on northern British Columbia coast service. No question of a through traff was involved, and the principle of the decision in Dawson Board of Trade vs. White Pass and Yukon Ry., 9 C.R.C. 190, is not applicable. While the G.T.P.R. Co. is the parent company of the steamship company whose local tariff is attacked, there is no such unity or relation between the two separate corporate entities within the meaning of the section referred to which would give this board jurisdiction over the local port to port rates involved in the dispute. The two companies, although, perhaps, having the same interests common to both, preserve their independent corporate existences, and must be treated as separate and individual entities for the purposes of this complaint. This board has never exercised any jurisdiction over port to port traffic, neither do I think that there is any authority conferred upon it by the Railway Act to do so. Wherever the board has exercised such jurisdiction the water traffic has been a part of, and incident to, a through railway rate, and jurisdiction was assumed by reason of the railway and not the water character of the traffic. In the present case the rate is purely a local rate for water-borne traffic between local ports, no part of it being, by any stretch of imagination, attributable to railway traffic or the traffic of the railway company. I am of opinion that this board has no jurisdiction in this complaint.

Apart from the question of jurisdiction, and if the board assumed jurisdiction in this matter, I should be very reluctant indeed upon the statements made at the hearing, to hold that, having regard to the nature of the traffic, the tariff was unreasonable. There is considerable hazard in connection with the traffic, expense of maintenance of it is great, and for many years it has been very unprofitable. It is stated that only last year was there a surplus from the earnings of the company. Added to the above reasons, it is very clear and ought to be a cogent and deciding factor, that the traffic is

largely, if not altogether, of a temporary character and most of it is directly attributable to the state of war now existing, as appears from the statements made at the hearing. It is more than probable that at the termination of the war the traffic would relapse to the former unsatisfactory conditions. The tariffs do not bear such an unreasonable proportion to the marketable value of the commodities carried as would in any event justify the board in going to the length of ruling that they were exorbitant and improper. It may be that there is some evidence in the complaint that they are not normal tariffs, but it is also to be observed that these tariffs are applicable to an abnormal condition of things, and to an exceptional and special condition of traffic which is of a temporary character. In my opinion the complaint must be dismissed.

## Westbound Transcontinental Freight Rates.

General order 241. June 29. Re westbound transcontinental freight rates, and the powers conferred upon the board under sec. 323 of the Railway Act. Whereas the westbound transcontinental freight rates on specific commodities from Eastern Canada to destinations in British Columbia, recognized as Pacific coast terminals, have been in the past and are now lower than the regular scale of rates under the Canadian Freight Classification, and the said commodity rates were definitely related to the rates on the same or similar commodities shipped from the eastern states of the Union to Pacific coast points, including those in British Columbia, until March 15, when the last mentioned rates were increased without corresponding increases from eastern Canada; and whereas the Director General of the U.S. Railroad Administration has ordered U.S. carriers to increase the rates which were in effect from the eastern states immediately before June 25, by 25%, effective from that date, and because of the competitive character of the traffic it is expedient to continue at least the equilibrium existing before March 15, it is ordered that the railway companies in Canada engaged in the said westbound transcontinental traffic be hereby permitted to increase the present so-called commodity rates from eastern Canada so as to place them on at least an equality with the rates now in effect from the neighboring states of the Union, and that the rates so increased be permitted to become effective not earlier than Aug. 1, 1918, upon not less than five days notice to the board and to the shipping public by filing and posting in the manner prescribed in the Railway Act.

## Idle Cars Taking Care of Overhang.

General order 242. June 28. Re application of Dominion Bridge Company, Montreal, for a ruling on the following question: "Should an idler car used to take care of an overhang from a car loaded with articles taking a commodity rate with a greater than classification minimum weight be charged two-thirds of the tariff weight of the commodity tariff or of the classification?" Upon hearing the application at Montreal, June 10, the applicant, the Canadian Freight Association, and the Grand Trunk and Canadian Pacific Railways being represented at the hearing; and upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the authority be, and it is, hereby given for a change in rule 1 (c) of Canadian Freight Classification 16, so as to provide that the mini-

mum weight for the first car in a series of platform cars (the longest car in the series to be considered the first car) carrying articles too long for one such car be that provided for in the appropriate tariff covering such articles, and two-thirds of the said minimum for each additional car over which the load extends. And it is declared that the lawful charge for each additional car used as herein described, prior to the effective date of the amendment herein authorized, was and is, two-thirds of the minimum weight provided for in the Canadian Freight Classification for the articles so carried, unless specifically excepted from the provisions of the said Classification in the tariff applicable.

## Agricultural Limestone and Stone Dust.

27378. June 28. Re complaint of the Crushed Stone, Limited, Toronto, and Henderson Farmers' Line & Phosphate Co., of Woodstock, Ont., against increased rates charged by G.T.R. on agricultural limestone and stone dust from Kirkfield, Ont., to various points. Upon hearing the complaint at Toronto, Feb. 15, the complainant, the Toronto, Hamilton & Buffalo, the Grand Trunk, the Canadian Pacific, and the Canadian Northern Railways, the United Farmers of Ontario, the Guelph Agricultural College, and the Canadian Freight Association being represented; and upon the report of the board's Chief Traffic Clerk, it is ordered that the complaint be dismissed.

## Coast Terminal Rates to Sidney, B.C.

The Assistant Chief Commissioner, D'Arcy Scott, gave the following judgment, June 26:—Sidney is on the south eastern end of Vancouver Island. It is reached by the Great Northern Ry. car ferry from Vancouver, and also by the Canadian Northern Ry. via car ferry to Patricia Bay, and thence by interchange of its railway with the Great Northern Ry., which on Vancouver Island is called the Victoria & Sidney Ry. Sidney is not served by the C.P.R., except by its coast and island boats, which call at Sidney periodically. Sidney is not a port of call for any ocean going vessel.

The applicants state that there is an arbitrary rate of 5½¢ per 100 lb. carload and 11¢ per 100 lb. l.c.l., which is added to the coast terminal rates on all traffic to Sidney. The Sidney Board of Trade applies for the cancellation of this arbitrary rate. Sidney is about 18 miles nearer Vancouver than is Victoria, via the Great Northern car ferry and rail route. There are several industries established at Sidney, notably a saw mill, a plant for the manufacturing of roofing and a cannery. Sidney is not reached by rail by the C.P.R. Therefore, that company may be eliminated from the consideration of this matter, as no case could be made out against it. The Canadian Northern only, reaches Sidney over the Victoria & Sidney Ry. tracks from a point of interchange about 1½ miles from Sidney. Therefore, no stronger case could be made out against the Canadian Northern than against the Great Northern. The latter company's traffic for Victoria passes over the same line as traffic for Sidney and it is hauled 18 miles longer distance at a lower rate than similar traffic to Sidney. If the circumstances and conditions of the traffic are substantially similar, subsec. 5 of sec. 315 of the Railway Act prohibits a higher rate being charged to Sidney, unless the board is satisfied that owing to competition it is expedient to allow the lower toll for the



longer haul. Victoria is a port for ocean going vessels. There is actual competition via the Panama Canal and other water routes with the Great Northern Ry. service to Victoria. It is to meet this competition that the railway maintains the lower rate to that city. There is no such competition at Sidney, as it is not served by ocean going vessels. Under these conditions, I think the railway is justified in maintaining the lower rate to Victoria, without making it applicable to intermediate non-competitive points like Sidney. The reasonableness of the rates to Sidney per se was not attacked. Therefore this judgment deals merely with the competitive feature of the rates referred to. On the evidence before me I think the application should be dismissed.

Order 27,383 was passed, June 28, dismissing the application.

#### Grain Delivery in New Westminster.

27,402. July 6. Re complaint of Grain Growers' British Columbia Agency, that the Canadian Northern Ry., although publishing rates on grain to New Westminster, B.C., makes an extra charge for delivery in that city. Upon hearing the complaint at Vancouver, June 6, the complainants and the railway company being represented, it is declared that the rate the C.N.R. was authorized to charge the complainants for delivery in New Westminster of the carload of barley from Clyde, Alta., was the rate shown in its tariff C.R.C. no. W.384, subject with respect to delivery on the C.N.R. tracks to the board's General Inter-switching Order that the collection by the C.N.R. of the toll of 1c per 100 lb. charged by the Great Northern Ry. for its switching service was unauthorized and illegal under the said tariff, and that the C.N.R. is granted leave to refund to the complainants the excess amount so charged and collected by it on the shipment in question.

#### Minimum Carload Weights for Sheep.

27,407. July 5. Re application of South Alberta Wool Growers' Association for an order requiring railway companies to establish a minimum carload weight to 12,000 lb. on sheep in single deck cars. Upon hearing the application at Calgary, June 10, in the presence of C.P.R. counsel, no one appearing for the applicant, it is ordered that the application be refused.

#### Car Doors for Sand and Gravel.

27,426. July 11. Re complaint of E. A. McKenzie of Arden, Man., against refusal of railway companies to supply him with car doors for sand and gravel shipments or to pay him for doors supplied by himself. Upon hearing the complaint at Winnipeg, June 15, in presence of counsel for Canadian Pacific and Canadian Northern Railways, the complainant appearing in person, it is ordered that the complaint be dismissed.

#### Classification of Zam-buk.

27,429. July 12. Re application of the Freight and Express Underwriters of Toronto, for same rating for Zam-buk as is provided in Canadian Freight Classification for vaseline. Upon hearing the application at Toronto, June 24, the applicant and the Canadian Freight Association being represented, it is ordered that the application be dismissed.

#### Interchange Tracks at Forrest, Man.

27,436. July 11. Re application of Canadian Manufacturers' Association (Brandon Section) and other interested shippers in Brandon, Man., for an order requiring the construction of an interchange track between the Canadian Pacific and the Grand Trunk Pacific Railways at Forrest, Man. Upon hearing the application at Winnipeg, June 15, in the pres-

ence of counsel for the applicants and the Grand Trunk Pacific and Canadian Pacific Railways, it is ordered that the G.T.P.R. be directed to construct interchange tracks between its railway and the C.P.R. near Forrest, Man.; the said railway forthwith to file detail plans of the proposed interchange; the work to be completed within 60 days from the approval of the plans by the board, and the expense of constructing such interchange tracks to be paid by the G.T.P.R.

#### Commodity Rates on Glass Bottles.

27,438. Re complaint of Montreal Board of Trade against proposed cancellation of present commodity rates on glass bottles in carloads from Hamilton, Toronto, and Montreal, published and filed in C.P.R. Supplement 77 to Tariff C.R.C. no. E. 3210, effective July 25, 1918, and in G.T.R. Supplement 73 to Tariff C.R.C. no. E. 3426, effective July 28, 1918: Upon reading what is filed in support of the complaint and on behalf of the railway companies, it is ordered that the said supplements cancelling the present commodity rates on glass bottles in carloads from Hamilton, Toronto, and Montreal, be suspended, pending hearing on a date to be fixed by the board.

#### Rates on Turnips.

27,439. July 17. Re application of Ontario Turnip Association and others for suspension of supplements to tariffs of the Canadian Pacific, Grand Trunk, and Toronto, Hamilton & Buffalo Railways, by which it was proposed to cancel through rates on turnips in carloads from stations in Ontario to points in the southern United States: Upon reading what has been submitted on behalf of the applicants, it is ordered that Supplement 7 to Toronto, Hamilton & Buffalo Ry. Tariff C.R.C. no. 502; Supplement 20 to G.T.R. Tariff no. E. 2619, and Supplement 9 to C.P.R. Tariff C.R.C. no. E. 2461, be suspended, pending hearing on a date to be fixed by the board.

#### Heaters in Banana Cars.

27,458. July 22. Re complaint of Vipond Fruit Company, Winnipeg, against a heater charge of \$15 a car on bananas from Minneapolis, Minn., to Winnipeg: Upon hearing the complaint at Winnipeg, June 15, the complainant and the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railways being represented, and upon its appearing that there is no tariff provision for the supplying of heaters only, it is declared that the heater charge of \$15 a car made by the C.P.R. on bananas from Minneapolis to Winnipeg was wrongfully made, and the C.P.R. is authorized to refund the amount to the complainant company.

#### Coal Rates to Edmonton.

27,459. July 22. Re application of Great West Coal Company, Edmonton Collieries, and Byers Mine Coal Co., for an order directing the Grand Trunk Pacific Railway to reduce its rate on coal from the Great West spur to Edmonton: Upon hearing the application at Edmonton, June 11, it is ordered that the G.T.P.R. be required to reduce the rate on coal, shown in its Special Joint and Competitive Freight Tariff, C.R.C. 285, from the mines on the Great West Coal Co.'s spur to Edmonton to 45c a ton.

27,460. July 20. Re application of Twin City Coal Co., Swift Canadian Co., Northern Alberta Coal Operators' Association, and Alliance Power Co., all of Edmonton, Alta., for reduced rates on slack coal to that city: Upon hearing the application at Edmonton, June 11, the applicants and the Canadian Northern, Canadian Pacific, and Grand Trunk Pacific

Railways being represented, it is ordered that the application be dismissed.

#### Heater Charge on Bananas.

27,461. July 22. Re complaint of Plunkett & Savage of Calgary, Alta., against a heater charge of \$22.50 a car from Minneapolis, Minn., to Calgary, via Minneapolis, St. Paul, and Sault Ste. Marie and Canadian Pacific Railways, on 5 carloads of bananas ex New Orleans: Upon hearing the complaint at Calgary, June 10, and upon its appearing that the bananas arrived at Minneapolis in heated cars, and that there is no tariff provision for the supplying of additional heaters, it is declared that the heater charge of \$22.50 a car from Minneapolis to Calgary made by the C.P.R. was wrongfully made, and the C.P.R. is authorized to repay to the complainants the excess amount collected by it on the shipments.

#### Rate on Bundles of Mouldings.

27,462. July 22. Re complaint of Security Traffic Bureau of Minneapolis, Minn., alleging overcharge by C.P.R. on a shipment from Winnipeg, April 27, 1912, to Wilkie, Sask., described in the bill of lading as 62 bundles of mouldings: Upon hearing the application at Winnipeg, June 15, the C.P.R. being represented, no one appearing for the applicant, it is ordered that the application be, and it is hereby, dismissed.

### Toronto, Hamilton and Buffalo Railway Report.

The report for the calendar year 1917 covers the operation of mileage as follows:—Main line, 79.88 miles; branches, 20.13 miles; lines operated under trackage rights, 4.36 miles; total road operated, 104.37 miles.

The total operating revenues were \$2,358,023.51, an increase over the previous year of \$487,786.83. Freight revenue was \$1,681,869.35, an increase of \$442,607.48, due to the greater volume of coal, iron and steel products, and other commodities handled. Passenger revenue was \$412,900.16, a decrease of \$9,559.98, due largely to a falling off in excursion business in July, 1917. Express revenue was \$51,428.53, an increase of \$14,783.96, due to the heavier volume of business. Switching revenue was \$137,460.87, an increase of \$28,323.33, and demurrage revenue was \$40,507.75, an increase of \$7,989.25, largely due to greater activity of industries at Hamilton and Welland. Dining and buffet revenue was \$24,578.36, an increase of \$3,670.64. Operating expenses were \$1,535,072.25, an increase of \$390,203.58, and were 65.10% of the operating revenues, which is 3.88% more than the operating ratio of the previous year. The increases in operating expenses are due to the handling of a greater volume of business than in the previous year, to higher rates paid for labor, and to increases in the cost of fuel and material. After payment of dividends aggregating 5% on outstanding capital stock, a surplus of \$308,914.30 was carried to profit and loss.

Unusual weather conditions which prevailed during the spring and early summer and recurrence of same during the latter part of the year seriously interfered with construction work in the Bridgeburg yard, in consequence of which no part of the yard was actually put into service. Two tracks, however, were completed on Canada Southern Ry. right of way leading from the entrance of the International Bridge to that company's Victoria yard, and they were put into service about Dec. 1. This relieved considerably the operating conditions at the



Victoria yard terminal. Yard construction was resumed as early as weather conditions justified, and it was expected to complete the same so as to bring the yard into operation Aug. 1, 1918.

The steel car ferry boat Maitland No. 1, owned and operated by the Toronto, Hamilton & Buffalo Navigation Co., resumed operation about the middle of March, continuing in service through the remainder of the year. The net income for the year amounted to \$10,711.02, or approximately 2.68% on the navigation company's capital stock, all of which is owned by the T.H. & B. Ry. Co. While this net income alone is not sufficient to justify the ownership and operation of the steam-

ship, the other benefits, resulting to the railway company, make such ownership and operation profitable, as the operating income of the branch line extending to Port Maitland amounted to \$57,824.74 for the year. After deducting interest and other fixed charges, the net surplus from the handling of traffic over the branch line was \$16,880.27. The revenue accruing to this company, on business originating on or in connection with the Port Maitland line, over and above the earnings on traffic handled over the branch line itself, amounted in the year to \$131,254.05. The railway company earnings, mentioned, are largely due to the operation of the car ferry steamer.

## Great Northern Railway Report.

The report for the calendar year 1917 is the first for a full twelve months since the date of the ending of the fiscal year was changed from June 30 to Dec. 31. The directors' report states there has been no change in the capital authorized to be issued, which remains at \$250,000,000, of which \$249,478,250 has been issued. The unissued stock includes 17½ shares held to acquire 14 shares of St. Paul, Minneapolis & Manitoba Ry. stock, of which 10 shares are in the company's treasury and 4 are still outstanding, and 5,200 shares of the last issue of \$19,000,000 which have not yet been offered for subscription. Of the bonds outstanding, \$163,140,515.16 are in the hands of the public, \$39,813,393.93 held by mortgage trustees, \$500,000 held in pension fund, and \$17,716,000 held in the company's treasury. There were issued during the year first and refunding mortgage gold bonds, series A., 4¼%, for \$3,567,000, in accordance with the terms of the mortgage against the acquisition of the following securities:—\$707,393.93 St. Paul, Minneapolis & Manitoba Ry. Pacific extension mortgage 4% bonds; 26,500 shares of capital stock of Vancouver, Victoria & Eastern Ry. & Navigation Co.; 850 shares capital stock of the Crows Nest Southern Ry.

The company's investment in Canadian companies has been increased as follows: By purchase of capital stock of V.V. & E. Ry. & Navigation Co., \$2,650,000; purchase of capital stock of Crows Nest Southern Ry., \$85,000; purchase of capital stock of Midland Ry. of Manitoba, \$250,000; by advances to Brandon, Saskatchewan & Hudson Bay Ry., \$1,300,93; to Manitoba Great Northern Ry., \$2,479.40; to Nelson & Fort Sheppard Ry., \$8,828.83; to Red Mountain Ry., \$1,671.24; making a total of \$2,999,280.90. From this is to be deducted \$1,779,760.48, repaid the company on account of advances made in previous years, leaving the net increase on investment in Canadian companies for 1917 at \$1,219,520.42. The proceeds received from the sale of their share capital by the Canadian companies named, was used in making repayment to the G.N.R., in paying cost of construction and additions and betterments during the year, or is being held for payment of cost of future construction, additions and betterments.

The President's report shows that 9.71 miles of additional sidings, spurs and other tracks were laid in connection with the controlled lines in Canada; that 240,544 cubic yards of material were moved in filling the terminal grounds at False Creek, Vancouver, B.C.; and that the new passenger station at Vancouver was put in use. The work in progress at Vancouver includes not only the new passenger station, with express wing, but also

a bright freight house, power house, fuel oil plant, locomotive house, turntable, sand house, ice house, etc. Among the improvements on the company's lines are the building of a 200 ft. extension to the dock at Burrard Inlet, Vancouver, and a 200 ft. extension to the warehouse thereon.

Following are the results of operation:	
Revenue from transportation .....	\$86,479,067.60
Revenue from operation other than transportation .....	2,119,666.04
Gross operating revenue .....	\$88,598,734.64
Operating expenses .....	59,282,156.31
Net operating revenue .....	\$29,316,578.33
Railway taxes accrued .....	6,302,952.08
Operating income .....	\$23,013,626.25
Other income .....	8,031,140.95
Gross corporate income .....	\$31,044,767.20
Deductions from income .....	8,004,594.98
Net corporate income .....	\$23,040,172.22
Dividends .....	\$17,462,959.50
Appropriations .....	5,385,635.00
	22,909,069.00
Balance to profit and loss .....	\$ 131,103.22

The consolidated general balance sheet shows the company's investments in Canadian lines as follows:—

Midland Ry. of Manitoba .....	\$2,400,000.00
Manitoba Great Northern Ry. ....	2,073,449.73
Brandon, Sask. & H. B. Ry. ....	1,151,943.09
Crows Nest Southern Ry. ....	4,295,000.00
Nelson & Fort Sheppard Ry. ....	1,129,407.26
Red Mountain Ry. ....	312,290.81
Vancouver, Victoria & Eastern Ry. ....	23,580,000.00
New Westminster Southern Ry. ....	260,000.00
Total .....	\$37,202,090.89

The mileage of lines owned by the G.N.R. and its controlled companies is 7,843.64, or, including second, and additional tracks, 8,119.23 miles, and including sidings, spurs and yard tracks, 10,495.60. In addition, the company has trackage rights over 420.35 miles of other companies' tracks. Following are the mileages in Canada:—

	Main line.	Spurs, etc.
Midland Ry. of Manitoba (joint with Northern Pacific Ry.) ...	2.10	11.11
Manitoba Great Northern Ry. ...	91.77	9.61
Brandon, Sask. & Hudson Bay Ry. ...	69.45	1.61
Crows Nest Southern Ry. ....	74.18	13.92
Nelson and Fort Sheppard Ry. ....	55.42	3.27
Red Mountain Ry. ....	9.59	2.84
New Westminster Southern Ry. ....	15.18	1.31
Vancouver, Victoria & Eastern Ry. ....	269.66	61.21
(Second track) .....	....	7.12
	587.35	121.00

Trackage rights:—	
Canadian Northern Ry.—From boundary at Noyes, Minn., to Midland Ry. of Manitoba at Winnipeg .....	66.57
Canadian Northern & Grand Trunk Pacific Ry. at Winnipeg .....	1.68
Grand Trunk Pacific Ry. at Portage la Prairie .....	.99
Canadian Northern Ry., Hope to Camrose, B.C. ....	37.18
Kettle Valley Ry., Brookmere to Hope, B.C. ....	53.47

Canadian Pacific Ry., Troup Jet. to Nelson, B.C. ....	5.44
Province of B. C., New Westminster Bridge .....	1.43
	166.81

## Canadian Pacific Railway Construction, Betterments, Etc.

**New Brunswick District.**—It is reported that Grant & Horne, contractors for the erection of the new grain elevator at no. 1 berth, St. John, N.B., have begun work thereon.

We are officially advised that no new elevator is being built at St. John. Grant & Horne, contractors, are doing some maintenance reconstruction on the company's grain conveyor gallery from elevator A to no. 1 berth, and along the face of no. 1 berth, a length of 581 ft. of gallery.

The Board of Railway Commissioners, July 12, authorized the company to appropriate certain lands for an additional main track between West St. John and Fairville, to build the main line at grade across the St. John Ry. at Main St., and also to cross at grade, North St., Union Point Road, Main St., Raynes Ave., Sherbrooke St. and Sand Cove Road, Fairville.

**British Columbia District.**—The Vancouver, B.C., City Council is negotiating with the company for the construction of a ramp to improve the approach to the C.P.R. station and other public property.

We are officially advised that business between the mainland and Vancouver Island has been increasing very rapidly, and that as barges cannot be taken in or out of Burrard Inlet, except at favorable tides, it has been decided to build a second transfer slip at Vancouver. It will be a three track slip, to be built just east of the present one, with an apron about 70 ft. long, similar to the one built at Esquimalt. It will be built of creosoted piles and lumber and is expected to cost \$70,000. (July, pg. 300.)

## Amendment of Rules re Testing Eyesight.

The Board of Railway Commissioners passed general order 240, June 21, as follows:—Re the application of C.P.R. for an order amending clause 20 of general order 94, July 24, 1912, prescribing uniform rules governing the determination of visual acuity, color perception, and hearing of railway employees on steam railways so as to read "minimum" instead of "maximum standard specified." Upon hearing the application at Montreal, June 10, 1918, in the presence of counsel for the applicant, the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen being represented, it is ordered that the said general order be amended by striking out the words "maximum standard specified" in clause 20 of the rules thereunder approved and inserting in lieu thereof the words "the minimum standard of vision."

The clause as amended now reads as follows:—

"20. An employee in Class C, D, E or F who has been in continuous service for a period of not less than 5 years, and who, through diminution of vision or muscular imbalance, fails to reach required standard will be considered satisfactory if his acuteness of vision, with or without glasses, reaches the minimum standard of vision for the class of service in which he is employed."



# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Boston & Albany Rd.**—H. M. BISCOE, heretofore Vice President, has been appointed Federal Manager, under the U.S. Railroad Administration. Office, Boston, Mass.

**Boston & Maine Rd.**—B. R. POLLOCK, heretofore General Manager, has been appointed Federal Manager under the U. S. Railroad Administration. Office, Boston, Mass.

**Canadian Government Railways.**—W. R. DEVENISH, Superintendent, Moncton, N.B., has had his jurisdiction extended to cover the Elgin & Havelock, St. Martins, Moncton & Buctouche, and Salisbury & Albert Rys., which are now incorporated with District 3, Intercolonial Division.

G. W. VAUGHAN, heretofore Superintendent, St. Martins Ry., Hampton, N.B., has been appointed a conductor on the St. Martins Branch, District 3, Intercolonial Division, C.G.R., and will also act as special agent. Headquarters, Hampton, N.B.

W. R. FITZMAURICE, Superintendent, Campbellton, N.B., has had his jurisdiction extended to cover the York & Carleton Rys., which has been incorporated with District 2, Intercolonial Division.

G. C. BROWNELL has been appointed Chief Dispatcher, Grant, Ont., vice J. P. Johnson.

F. H. PAULLEY has been appointed foreman upholsterer, Transcona, Man., vice C. Kemkes, enlisted in the 76th Battery.

**Canadian Northern Ry.**—W. ADAMS is reported to have been appointed signal inspector, Port Arthur, Ont., vice H. E. McDonald, transferred to Duluth, Winnipeg & Pacific Ry.

J. C. O'DONNELL, Superintendent, Divisions 2 and 3, Central District, Winnipeg, has been appointed acting General Superintendent, Western District, during the absence, through injuries, of W. A. Brown. Office, Edmonton, Alta.

J. J. CROWE is reported to have been appointed acting signal inspector, Edmonton, Alta.

**Canadian Pacific Ry.**—J. M. R. FAIRBAIRN, heretofore Assistant Chief Engineer, Eastern Lines, Montreal, has been appointed Chief Engineer of the C.P.R. system. Office, Montreal.

J. G. SULLIVAN, heretofore Chief Engineer, Western Lines, Winnipeg, has retired to engage in private practice, but will remain associated with the company as Consulting Engineer.

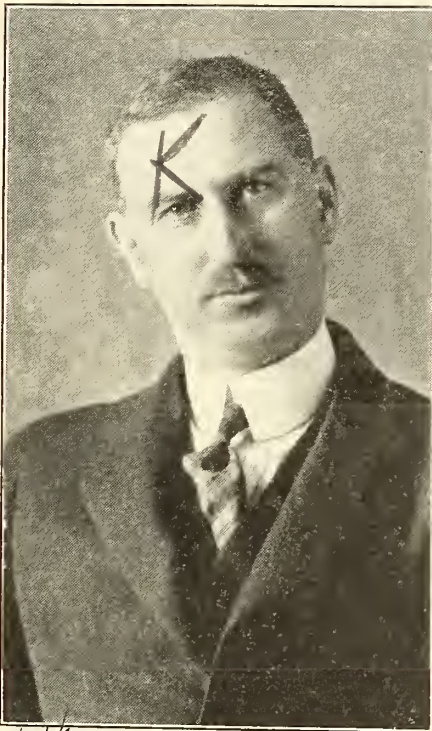
Sir George Bury, Vice President, issued the following circular, in connection with the above changes: "J. G. SULLIVAN, who has so well filled the position of Chief Engineer, is retiring to enter private practice, but will remain associated with the company as Consulting Engineer. J. M. R. FAIRBAIRN is appointed Chief Engineer."

W. A. JAMES, heretofore Division Engineer of Construction, Western Lines, Winnipeg, has been appointed Assistant Chief Engineer, Western Lines. Office, Winnipeg. No appointment as Division Engineer of Construction is to be made for the present.

Grant Hall, Vice President and General Manager, issued the following circular in connection with the above:—"W. A. JAMES is appointed Assistant Chief Engineer, with office at Winnipeg, in place

of J. M. R. FAIRBAIRN, who has been appointed Chief Engineer, with office at Montreal.

L. BERGER, heretofore Roadmaster, Winchester Subdivision, Smiths Falls,



J. M. Fairbairn,  
Chief Engineer, Canadian Pacific Railway.



W. A. James,  
Assistant Chief Engineer, Western Lines, Canadian Pacific Railway.

Ont., has been appointed Roadmaster, Sherbrooke, Que.

JOHN BURNS, heretofore Master Mechanic, Quebec District, Montreal, has been appointed Assistant Works Mana-

ger, Angus shops, Montreal, vice J. W. Buckland, granted leave of Absence.

C. A. WHEELER, heretofore Division Master Mechanic, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Master Mechanic, Quebec District, vice John Burns, promoted. Office, Montreal.

E. J. MELROSE, Assistant Superintendent, has been appointed acting Superintendent, London Division, Ontario District, during the absence of A. Williams, on holidays. Office, London, Ont.

W. J. STINSON has been appointed acting Assistant Superintendent, London Division, Ontario District, London, Ont., while E. J. Melrose is acting as Superintendent.

P. J. BELL has been appointed General Foreman, North Bay, Ont., vice J. S. Allen, promoted.

J. S. ALLEN, heretofore General Foreman, North Bay, Ont., has been appointed Division Master Mechanic, Sudbury Division, Algoma District, vice C. A. Wheeler, promoted. Office, Sudbury, Ont.

J. F. EARL has been appointed Resident Engineer, Winnipeg, vice C. H. Fox, on leave of absence for military service.

J. KILPATRICK, heretofore Roadmaster, La Riviere and Gretna Subdivisions, Winnipeg Division, Manitoba District, Winnipeg, has been appointed Roadmaster, Kenora Division, Manitoba District. Headquarters, Kenora, Ont. This is a new position.

C. BRYNELSON has been appointed Roadmaster, La Riviere and Gretna Subdivisions, Winnipeg Division, Manitoba District, vice J. Kilpatrick, transferred. Headquarters, Winnipeg.

D. M. SMITH, heretofore Road Foreman of Locomotives, Medicine Hat, Alta., has been appointed Division Master Mechanic there, his former position remaining vacant for the present.

E. J. LEMIEUX, heretofore Division Master Mechanic, Lethbridge, Alta., has been appointed Division Master Mechanic and Trainmaster, Calgary Division, vice A. E. Dales, now locomotive man, Winnipeg, and J. D. Fraine, transferred, respectively. Office, Calgary, Alta.

J. D. FRAINE, heretofore Trainmaster, Calgary Division, Alberta District, Calgary, has been appointed Terminal Trainmaster, Calgary, Alta.

J. M. GILMOUR, heretofore chief clerk to Superintendent, Edmonton, Alta., has been appointed Yardmaster, Edmonton and Strathcona terminals, vice L. Stone, enlisted for active military service.

F. REYNOLDS, heretofore store man, Calgary, Alta., has been appointed storekeeper, Field, B.C., vice L. Norman, who has enlisted for military service.

**Delaware & Hudson Co.**—W. H. DAVIES, heretofore Comptroller, Albany, N.Y., has been appointed Treasurer, vice C. A. Walker. Office, New York.

W. H. EPPLER, heretofore Chief, Bureau Departmental Accounts, Albany, N.Y., has been appointed Comptroller, vice W. H. Davies. Office, New York.

L. K. LUFF, heretofore Auditor of Revenue, has been appointed General Auditor. Office, Albany, N.Y.

W. J. DALLER has been appointed Auditor of Revenue, vice L. K. Luff, promoted. Office, Albany, N.Y.

A. J. GIES, heretofore Auditor of Disbursements, has been appointed Auditor of Expenditures. Office, Albany, N.Y.

W. L. SCHNEIDER has been appointed Freight Claim Agent, Albany, N.Y., vice H. D. Chamberlain, transferred.



**Duluth, Winnipeg & Pacific Ry.**—H. E. McDONALD, heretofore signal inspector, C.N.R., Port Arthur, Ont., is reported to have been appointed signal inspector, D. W. & P. R., Virginia, Minn.

**Grand Trunk Ry.**—L. L. GRABILL, heretofore Assistant General Baggage Agent, has been appointed General Baggage Agent, vice J. E. Quick, who, after continuous service for 47 years on the G.T.R. System, retired, July 31, under the pension rules. Office, Toronto.

C. H. TILLETT, heretofore Supervisor of Signals, Eastern Lines, Montreal, has been appointed Electrical Engineer, vice J. A. Burnett, whose appointment as Technical Assistant to the British War Mission at Washington, D.C., was announced in our last issue. Office, Montreal.

J. J. GINTY has been appointed Supervisor of Signals, Eastern Lines, Montreal, vice C. H. Tillett, promoted.

R. E. MARKS, heretofore conductor, has been appointed Passenger Trainmaster, Eastern Lines, vice W. E. Weegar, whose appointment as Trainmaster, Ottawa Division, was announced in our last issue. Office, Montreal.

J. C. GARDEN, heretofore Master Mechanic, Battle Creek, Mich., has been appointed Master Mechanic, Stratford Shops, Ont., vice C. Kelso, assigned to other duties.

E. P. EAST has been appointed Road Foreman of Locomotives, Stratford, Ont., vice W. Kirkwood, promoted.

W. KIRKWOOD, heretofore Road Foreman of Locomotives, Stratford, Ont., has been appointed Travelling Engineer, London, Ont.

H. W. MATTHEWS has been appointed Superintendent Sarnia Tunnel Terminals, vice G. A. Stokes, whose appointment as Terminal Superintendent, Toronto, was announced in our last issue. Office, Port Huron, Mich.

C. J. HAIG, having been assigned to other duties, the position of Commercial Agent at Philadelphia, Pa., has been abolished. All correspondence with respect to business transacted at that office is dealt with by the General Eastern Freight Agent, 1450 Woolworth Bldg., New York, N.Y.

J. B. HECKENDORN has been appointed Lake and Rail Agent, Chicago, Ill., vice G. J. Harris, who, owing to ill health, has been assigned to other duties. Office, Canada Atlantic Transit Co.'s Dock, 309 East North Water St.

The following positions have been abolished, and correspondence with respect to business transacted there, is now dealt with by the Assistant Freight Traffic Manager, Chicago, Ill.: Pacific Coast Agent, W. H. BULLEN, Los Angeles, Cal.; Commercial Agent, J. WAUGH, San Francisco, Cal.; Commercial Agent, G. H. Brown, Omaha, Neb.; Commercial Agent, H. A. RICHARDS, Kansas City, Mo.

The position of City Passenger and Ticket Agent, Portland, Ore., heretofore occupied by D. B. SMITH, has been abolished.

**Grand Trunk Pacific Coast Steamship Co.**—J. H. BURGIS, heretofore General Agent, Passenger Department, G.T.R., Seattle, Wash., has been appointed General Agent, Passenger Department, G.T.P.C.S. Co. there, and his former position has been abolished.

**Grand Trunk Pacific Ry.**—W. C. RIDDELL, heretofore chief clerk to General Advertising Agent, G.T.R. System, Montreal, has been appointed Advertising Agent, G.T.P.R., and will act as assistant in Western Canada, of the General Ad-

vertising Agent, G.T.R. System. Office, Winnipeg.

**Great Northern Ry.**—L. W. HILL, Chairman of the Board, has been elected President, vice W. P. Kenney, appointed Federal Manager under the U. S. Railroad Administration. (Note.—As the operation of the railways in the U.S. is now undertaken by the U. S. Railroad Administration, the duties of presidents are presumably concerned with corporate affairs.)

**Maine Central Rd.**—D. C. DOUGLASS, heretofore General Manager, has been appointed General Manager under the U. S. Railroad Administration. Office, Portland, Me.

**New York Central Rd.**—M. S. BARGER has been appointed Treasurer of the company, vice E. L. ROSSITER, appointed Treasurer, N.Y.C.R. and Lake Erie & Pittsburg Ry. for the U. S. Railroad Administration, reporting to the Federal Manager. Office, New York, N.Y.

H. G. SNELLING and E. FREEMAN have been appointed Assistant Treasurers of the company. Offices, New York, N.Y.



L. L. Grabill  
General Baggage Agent, Grand Trunk Railway.

L. BENDER and G. W. PORTER have been appointed Assistant Treasurers, N. Y. C. R. and Lake Erie & Pittsburg Ry. for the U. S. Railroad Administration, with offices at New York, and R. P. AHRENS has been appointed Local Treasurer, for the U. S. Railroad Administration at Cleveland, Ohio.

**New York, New Haven & Hartford Rd.** E. J. PEARSON, heretofore President, has been appointed Federal Manager, N. Y.N.H. & H.R. and Central New England Ry., under the U. S. Railroad Administration. Office, New Haven, Conn.

**Quebec, Montreal & Southern Ry., Napierville Junction Ry.**—W. H. DAVIES, Treasurer, Delaware & Hudson Co., has been appointed Treasurer, Q. M. & S. and N. J. Rys. Office, New York.

W. E. EPPLER, Comptroller, Delaware & Hudson Co., has also been appointed Comptroller, Q. M. & S. and N. J. Rys. Office, New York.

H. D. CHAMBERLAIN, heretofore Freight Claim Agent, Delaware & Hudson Co., has been appointed Auditor, Q. M. & S. and N. J. Rys. Office, Albany, N.Y.

A. L. CURRIE, heretofore Secretary, has been appointed Superintendent, Napierville Jct. Ry. Office, Sorel, Que.

R. F. HOLLAND has been appointed Car Accountant, Montreal.

## Railway Finance, Meetings, Etc.

**Canadian Northern Ry.**—Payment of an issue of \$5,700,000 of notes maturing is reported to have been made in New York, July 10. Another issue amounting to \$10,000,000 matures in September.

The company is reported to have sold through W. A. Read & Co., New York, an issue of \$5,000,000 of 6% equipment trust certificates at a price to yield the investor 7½%. Of these notes \$750,000 will mature July 1, 1919, and July 1, 1920; \$450,000 annually thereafter until July 1, 1926, inclusive, and \$400,000 on July 1, 1927, and July 1, 1928, respectively. The proceeds of the sale have been utilized to buy 4,500 steel frame box cars, 250 gondolas, 215 flat cars, 200 stock cars, 250 ballast cars and 25 steel tank cars.

There has been deposited with the Secretary of State at Ottawa, duplicate original of a lease dated July 1, 1918, and executed July 9, made by Canadian Northern Rolling Stock, Ltd., to the C.N.R., covering certain rolling stock, and attached, an assignment thereof to The Pennsylvania Company for Insurances on Lives and Granting Annuities.

**Canadian Northern Ry.**—Equipment trust certificates, series A, 6%, for \$5,000,000, maturing in different amounts from July 1, 1919, to July 1, 1928, have been bought by W. A. Read & Co., New York.

**Pacific Great Eastern Ry.**—The Premier of British Columbia announced July 6 that arrangements had been made to pay interest on the bonds of this railway from the consolidated revenue fund. The amount involved is \$452,541, of which \$309,293 is payable in London, Eng., and \$143,248 in Victoria, B.C. Up to January, the Government had paid for interest on the bonds, \$1,927,916.50 under its guarantee, and the company had paid \$1,021,647.60 out of the money turned over to it by the government from the proceeds of the bonds on construction account.

**Pacific Great Eastern Ry.**—  
Traffic earnings for May ..... \$12,833.13  
Traffic earnings for May, 1917 ..... 8,174.16

**Timiskaming & Northern Ontario Ry.** Passenger receipts for May, \$54,992.67; freight receipts, \$182,645.02; total receipts, \$237,637.69, against \$53,266.07 passenger receipts; \$143,972.47 freight receipts; \$197,238.54 total receipts, for May, 1917. Aggregate total receipts for five months ended May 31, \$1,106,983.84, against \$855,732.45 for same period 1917.

**White Pass and Yukon Route.**—Earnings for March, \$16,209, against \$44,714 for Mar., 1917. Aggregate earnings for three months ended Mar. 31, \$35,370, against \$83,921 for same period 1917.

**Pacific Great Eastern Ry. Lands.**—The British Columbia Government announced July 13, that it had decided to assume ownership of the P.G.E. Development Co.'s property, under the terms of the settlement agreement with the P.G.E. Ry. Co. The land includes 516 town lots and 7,000 acres of land, valued by the railway company at \$1,300,000.



# Electric Railway Department

## Increases in Electric Railway Freight and Passenger Rates.

The Board of Railway Commissioners has passed the following orders, in addition to those given in Canadian Railway and Marine World for May, June and July:—

**Hamilton Radial Electric Ry.**—27471, July 22. Re application of Hamilton Radial Electric Ry. for an order permitting it to file tariffs providing for a general advance in the tolls for the carriage of passengers and freight over its line, in the same manner and to the same extent as has been permitted by the board in the case of steam railways: Upon hearing the application at Toronto, June 24, the applicant company, the townships of Nelson and Trafalgar, the Burlington Beach Commission, the towns of Oakville and Burlington, and the city of Hamilton being represented, it is ordered that the company be authorized to increase its standard maximum freight mileage tariff by 15%, and its carload rates on coal and coke by 15c a ton. That the company be authorized to increase its standard maximum passenger tariff from 2c to 2½c a mile, subject, however, to the limitations created by the bylaws of the townships of Saltfleet and Nelson, the village of Burlington, and the town of Oakville, consenting to the construction and operation of the company's railway through their respective municipalities. And it is further ordered that the increased rates herein authorized shall not become effective until the company has complied with the requirements of sec. 327 and 331 of the Railway Act.

**Hull Electric Co.**—27379, July 8. Re application of Hull Electric Co. for authority to file tariffs providing for a general advance in tolls for carriage of passengers and freight in the same manner and to the same extent as has been permitted by the board in the case of steam railways: Upon hearing the application at Ottawa, May 21, in the presence of counsel for the company, the Town of Aylmer being represented at the hearing, and what was alleged; and upon reading the further submissions filed, it is ordered that the company be authorized to publish and file tariffs increasing its existing freight rates, except on coal and coke, by 15%, and its rates on coal and coke by 15c a ton; also to increase its standard maximum passenger rate so as not to exceed 2.875c a mile. And it is further ordered that the said tariffs may be made effective in 15 days from the date of this order, subject to the provisions of sec. 327 and 331 of the Railway Act as to standard tariffs.

27411, July 10. Approving Hull Electric Co. Standard Passenger Tariff C.R.C. no. P9, and Standard Mileage Freight Tariff C.R.C. no. F82, to become effective July 22, same having been filed on basis permitted by order 27379 of July 8.

**London & Lake Erie Ry. & Transportation.**—27421, July 10. Approving L. & L.E. R. & T.C. Standard Mileage Freight Tariff, C.R.C. 6, filed on basis permitted in order 27105 of April 4.

**Montreal & Southern Counties Ry.**—The Chief Commissioner gave judgment, July 11, to allow the M. & S.C.R. to file tariffs providing for a general advance in freight and passenger rates in the same manner and to the same extent as permitted by the board in the case of

steam railways. At the hearing the Town of St. Lambert and the municipalities of Greenfield Park and Longueuil objected to the proposed advances on the ground of agreements. The agreement between the Town of St. Lambert and the company provided that the rates to be charged should not be higher than those charged by steam railways for similar tickets at the date of passing the bylaw. The Chief Commissioner held that it would be unfair to increase the rates in other municipalities and not in St. Lambert and the other municipalities which had agreements, and stated that in his opinion an order should issue as asked for, notwithstanding any municipal agreement to the contrary. Up to the time of writing (July 24), the order had not been issued.

**Windsor, Essex & Lake Shore Rapid Ry.**—27382, July 4. Approving W.E. & L.S.R.R. Standard Mileage Tariff C.R.C. 236, to become effective July 20, same having been filed on basis permitted by order 27308, June 15.

### OTHER APPLICATIONS AND INCREASES.

**The Brantford Municipal Ry. Commission**, which operates the electric railways owned by the City of Brantford, Ont., in that city and the interurban line between Brantford and Paris, which was formerly a part of the old Grand Valley Ry., being faced with a deficit of \$12,000 for the year, largely owing to increased wages, has abolished the sale of green limited tickets heretofore sold, 8 for 25c, and which were good from 6 to 8 a.m., from noon to 2 p.m., and from 5 to 7 p.m. Only one class of tickets, red, is now sold, 6 for 25c. The cash fare remains at 5c. Following is a comparison of the rates on the Brantford-Paris line:—

	Old rate	New rate
Single fare . . . . .	20c	20c
Return fare . . . . .	30c	35c
Children's return fare . . . . .	15c	20c
Workmen's card ticket, return . . . . .	20c	25c
Workmen's book of tickets, return . . . . .	25c	30c

The fares between Paris and Brantford cover transfer on the Brantford city lines when required.

**British Columbia Electric Ry.**—We were officially advised, July 16, that arrangements had been made between the company and the Vancouver and New Westminster city councils under which cash passenger fares have been advanced to 6c in those cities, and also in the Vancouver city lines in South Vancouver and Point Grey municipalities, 6 tickets being sold for 35c. Children's fares remain at 2½c. The cash fare from Vancouver to South Vancouver and Point Grey is 12c. Settlers' tickets giving transfer into Vancouver City from South Vancouver and Point Grey are sold for 7c each in strips of 10. North Vancouver having refused permission to charge 6c, the company has ceased operating there. Burnaby having also taken the same attitude, the 2 miles in that municipality are also not being operated. In Victoria the mayor flatly refused to agree to an increased rate, so the company took advantage of its charter powers and is charging a 5c fare without giving a transfer. Children's fares have been abolished.

The Cape Breton Electric Co. applied in June to the Nova Scotia Board of Pub-

lic Utility Commissioners for authority to increase its cash passenger fares in Sydney and Glace Bay from 5c to 6c. On the Sydney and Glace Bay interurban line there are 5 zones, in each of which a 5c fare is charged, making the one way fare from Sydney to Glace Bay 25c. The company has asked authority to increase 1c in each zone, which would make a 6c fare in each zone and 30c for the through fare from Sydney to Glace Bay. It has also asked for authority to charge 1c each for transfers, which are now issued free. It does not sell any tickets at reduced rates, either unlimited, workmen's or school children's. The application was heard by the board at Sydney on July 16, 17, 18 and 20, when the hearing was adjourned to Aug. 13. The municipalities in which the company operates were represented by counsel, who opposed the increases asked.

In connection with the application, the company has been carrying on an advertising propaganda in the form of one-minute talks on tramway matters, in which its side of the question is stated. The local newspapers have been carrying on a counter editorial campaign.

**Edmonton Radial Ry.**—The Edmonton, Alta., City Council, on June 25, refused to again take up the question of re-introducing workmen's tickets on the municipal railway.

**Fort William Municipal Ry.**—The managements of the Fort William Municipal Ry. and the Port Arthur Civic Ry. have made a joint application to the Ontario Railway and Municipal Board for authority to make a further increase in passenger fares. As the board considers that a serious point of law is involved in connection with the matter, it has been referred back, and no further action has been taken.

**Grand River Ry.**—The Ontario Railway and Municipal Board issued the following order June 10. Re application of Grand River Ry., on behalf of the Galt, Preston & Hespeler St. Ry. and Berlin & Waterloo Ry. for an increase of 15% in freight and passenger rates: Upon reading what has been filed in support of the application and upon the report and recommendation of the board's Traffic Expert, it is ordered that the Galt, Preston & Hespeler St. Ry. and the Berlin & Waterloo Ry. increase their freight rates by 15%, with the following disposition of fractions of one cent:—.24 and under to be dropped, .25 to .74 to be counted as ½c, .75 and over to be counted 1c. That the passenger fares of the said companies may be increased by 15%, but not to exceed a maximum of 2c a mile. The disposition of fractions to be as provided by the Ontario Railway Act. It is also ordered that the increased rates may be made effective after compliance with the requirements of sec. 177 of the Ontario Railway Act.

As soon as the board's decision was announced, municipal councils and boards of trade in Galt and Kitchener asked for the going into effect of the order to be delayed so that they might be heard. A protest was also made by the South Waterloo District Trades and Labor Council, to which the board replied, in part, as follows:—"The passenger rates approved by the board are those allowed under sec. 210 of the Ontario Railway



Act, chap. 185, R.S.O., 1914, which reads as follows:—“(a) The fare to be taken by a company on a railway operated by electricity for each passenger shall not exceed 5c for any distance not exceeding 3 miles, and where the distance exceeds 3 miles, shall not exceed 2c a mile or fraction thereof for the distance actually travelled,” etc. For example, the distance from Galt to Preston is 4.54 miles; under the act the company can charge 10c. These rates could have been charged by the company since 1906 under the law. The Lake Erie & Northern Ry., which runs from Galt to Port Dover, under Dominion jurisdiction, had its rates increased from 2½c to 2¾c a mile. In granting the increase in freight rates of 15%, it was shown to the satisfaction of the Board's Tariff Expert and to the board that the average increase in cost of material in 1917 over what it cost in 1915 was 90.66%, and another statement showed an increase in the cost of labor, covering operation and maintenance, of 30.31% for the same period. In addition to this, our Tariff Expert advises us that the London & Port Stanley Ry., London & Lake Erie Ry. & Transportation Co., Chatham, Wallaceburg & Lake Erie Ry., Windsor, Essex & Lake Shore Rapid Ry., Brantford & Hamilton Ry., Quebec Ry., Light & Power Co., and Lake Erie & Northern Ry. were all allowed similar increases for these same reasons by the Board of Railway Commissioners, and as a result the Ontario Railway and Municipal Board could not do otherwise under the circumstances. Much of the Grand River Ry.'s track and equipment requires renewal and repairs, and for some time back this board has been insisting on the company putting its tracks and equipment in better shape, and to comply with the board's request in this particular would require the expenditure of a considerable sum.”

**Montreal Tramways Co.**—Canadian Railway and Marine World for July gave some particulars, from press reports, of the increases in fares authorized by the Montreal Tramways Commission. We have since received an official copy of the resolution adopted by the commission on June 21, as follows: Whereas

An operating allowance of 22c per revenue car-mile for cars equipped with motors, and an operating allowance of 15c per revenue car-mile for trailers, used for the transportation of passengers, have been granted this day to the Montreal Tramways Co. for its operating expenses and taxes for the year ending June 30, 1919;

A maintenance allowance of 7.9c per revenue car-mile for cars equipped with motors, and a maintenance allowance of 5.2c per revenue car-mile for trailers, used for the transportation of passengers, have been granted this day to the M.T. Co. for its maintenance and renewal expenses for the year ending June 30, 1919;

The M.T. Co. must receive an annual return of 6% on \$36,286,295, its capital value, including all physical assets owned by it on Dec. 31, 1917;

The said company has a right to receive an annual return of 7% on all additions made to its capital value from Dec. 31, 1917, to this date, the additions amounting to \$195,086.56;

This commission must provide for an annual return of 7% on all additions to be made by the company to its capital value within its first year of operation;

This commission must provide for an annual return of 6% on all working capital to be furnished by the company during the first year of operation;

The company must receive annually, out of gross revenues, \$181,431.47 to cover the expenses to be incurred by it in procuring additional capital;

The City of Montreal must receive out of gross revenues over and above all other amounts to which it may be entitled under the contract governing the operation of the company, \$500,000 a year.

This commission must provide for a contingent fund into which a sum equal to 1% of the gross revenue of the company shall be paid annually;

This commission must amend the tramways tariffs in order to give full effect to the contract executed by the City of Montreal and the company, on Jan. 28, 1918;

Be it resolved that the following tariffs be established and put in force for the passengers carried by the company:—

1.—In the uniform tariff territory comprising the City of Montreal, as it exists at present, as well as the Towns of Westmount, Outremont, Verdun, St. Laurent, Mount Royal, also the territories of the portions of St. Laurent Parish and of the Municipality of Cote St. Luc, lying to the east of the company's line, running from Snowdon Jct. to Cartierville, including the land occupied by that line:—

(a) From midnight to 5 a.m., 15c cash.  
(b) From 5 a.m. to midnight, 6c cash or 5 tickets for 25c.

(c) For school children, from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.

(d) Transfers shall be issued free to school children specified in clause (c) and to all passengers travelling on cars between 6 a.m. and 8 a.m., on week days only. At all other times, a transfer shall be issued to any passenger paying his or her regular fare, at a charge of 1c.

**Municipalities Outside the Uniform Tariff Territory.**

2.—Town of Montreal West. Local traffic:—

(a) From midnight to 5 a.m., 5c cash fare.

(b) From 5 a.m. to midnight, 2c cash fare or 6 tickets for 10c.

(c) For school children, from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 1c cash fare or 6 tickets for 5c.

3.—Town of Lachine. Local Traffic:—

(a) From midnight to 5 a.m., 10c cash fare.

(b) From 5 a.m. to midnight, 5c cash fare or 6 tickets for 25c.

(c) For school children from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.

(d) The above tariff will also apply to all passengers travelling from the Town of Lachine to the western limit of the uniform tariff territory and vice versa.

4.—Ville St. Pierre.

From the western boundary of Ville St. Pierre to the western limit of the uniform tariff territory and vice versa:—

(a) From midnight to 5 a.m., 5c cash fare.

(b) From 5 a.m. to midnight, 2c cash or 6 tickets for 10c.

(c) For school children from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 1c cash fare or 6 tickets for 5c.

5.—Town of Montreal North. Local traffic:—

(a) From midnight to 5 a.m., 10c cash fare.

(b) From 5 a.m. to midnight, 5c cash fare or 6 tickets for 25c.

(c) For school children from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.

6.—Town of Montreal East. Local traffic:—

(a) From midnight to 5 a.m., 5c cash fare.

(b) From 5 a.m. to midnight, 2c cash fare or 6 tickets for 10c.

(c) For school children from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 1c cash fare, or 6 tickets for 5c.

7.—Town of Pointe aux Trembles and Town of Laval de Montreal:—

(a) From midnight to 5 a.m., 10c cash fare.

(b) From 5 a.m. to midnight, 5c cash fare.

(c) For school children from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.

Interurban Traffic—From Laval de Montreal to western limits of Pointe-aux-Trembles, and vice versa:—

(a) From midnight to 5 a.m., 10c cash fare.

(b) From 5 a.m. to midnight, 5c cash fare.

(c) For school children from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.

From Pointe aux Trembles to eastern limits of uniform tariff territory:—

(a) From midnight to 5 a.m., 10c cash fare.

(b) From 5 a.m. to 8 a.m., 10c cash.

(c) For school children from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.

In connection with the decision, the following statement was given out:—

“The Tramways Commission, in establishing the tariffs, were bound to carry out the stipulations of the contract entered into by the City of Montreal and the Montreal Tramways Co. on Jan. 28, 1918, and ratified by the Quebec Legislature on Feb. 9, 1918. The tariffs, according to the act, must give full effect to this contract. The revenues to be derived from such tariffs are to provide tramways service at cost. The commission, after a careful study of the expenditures incurred by the company in previous years, and taking into consideration the increase in labor and material, found it necessary to provide for a total revenue of approximately \$10,000,000 for the 12 months ended June 30, 1919. This gross revenue exceeds the revenue of the year ending June 30, 1917, by about \$2,500,000, during which period the fares averaged 4.11c per revenue passenger. The increased cost of wages and material, as well as the increased fixed charges due to additional capital required, bring up the estimated cost per revenue passenger to approximately 5.5c. This increase of about \$2,500,000 is made up as follows:— Estimated increase in wages for 13 months, \$750,000; deficit incurred since putting in force of contract until June 30, 1918, \$400,000; estimated increased cost of material and supplies, \$1,000,000; additional fixed charges, \$280,000.

A Montreal paper points out that those living in the center of the city or adjacent thereto will help to bear the cost of operating the tramways in the newer parts of the city, for under the franchise agreement, the whole of the city of Montreal, including Cartierville, comes under the uniform tariff rate, as do also the cities of Westmount, Outremont, Verdun, and the towns of St. Laurent, Mount Royal and portions of St. Laurant parish and Cote St. Luc east of the tramways line, running from Snowdon Jct. to Cartierville.

People who do not buy 5 tickets for 25c, will have to pay a cash fare of 6c, and if they want a transfer after 8 a.m., they



must pay an extra cent.

People travelling after midnight and before 5 a.m. will have to pay a fare of 15c cash, against the 10c cash fare heretofore in force.

Workmen who formerly were able to buy 8 yellow tickets for 25c, and get a free transfer, will, when the new rates go into operation, be able to secure only 5 tickets, the same as every other citizen. The concession is made to them, however, that between 5 and 8 a.m., when most of them go to work, they will be able to get a free transfer on week days. There will be no free transfers for the return journey in the evening, and if they have to transfer to reach their homes from their work, they must pay 5c for their fare and 1c for their transfer.

Under the uniform tariff system a citizen can travel from Cartierville to the limits of the city east or west, a distance of about 12 miles, for 6c, including a transfer, or in the early morning for 5c. The previous fare from Cartierville was 15c, in addition to the city fare.

The rates outside of the uniform tariff territory are considerably altered. Heretofore there was an additional fare on the Lachine line ranging from 5c to 15c. Under the new tariff it will be 5c additional. To get to the end of the line in Montreal West, there will be an additional 2c in the day time, or 6 tickets for 10c, but as the uniform tariff territory extends to the corner of Westminster Ave., this will not be paid by many, as the car line only extends three blocks beyond the city limits.

The residents of Ville St. Pierre will also have to pay an additional 2c, or get 6 tickets for 10c, while passengers travelling to Montreal East will have to pay a straight 2c cash fare additional. To get to Montreal North the additional cash fare will be 5c, and the same to Pointe aux Trembles and Laval de Montreal, as against a maximum of 20c heretofore to the end of the line, while for interurban traffic between the two last named places the fare will be 5c straight. In the case of Lachine, Montreal North, Pointe aux Trembles and Laval de Montreal, the fare after midnight will be 10c additional to the city fare of 15c, making a total of 25c.

There will be no change in the fare for residents of Notre Dame de Grace, or Rosemount, for early morning workers, as they now pay a straight 5c fare, but those travelling after 8 a.m. and needing to transfer will pay a cent more.

In regard to the charge of 1c for a transfer, we are officially advised that a passenger desiring to make more than one transfer on a continuous trip in the uniform rate territory, will only be required to buy one transfer ticket.

As a result of several meetings held in the municipalities in which the Montreal Tramways Co. operates, appeals against the new schedule of fares were entered by all the municipalities on the general ground of the amount fixed by the Tramways Commission for the operation and maintenance expenses per car mile, and the fares fixed for the transportation of passengers for the year ending June 30, 1919; while additional objections were set out in one or two particular cases. The company also entered an appeal, contending that the sums allowed for operation and maintenance and renewals are too small; that the amount allowed for deficit on the working of cars during May and June is not sufficient; that allowance should be made for a deficit in operation for July, or until such time as the Public Utilities Commission decides the appeals and the new fares are put in force. The

Quebec Public Utilities Commission fixed July 19 for hearing of the appeals.

Prior to the day appointed by the Quebec Public Utilities Commission for the hearing of the appeals referred to above, a writ of prohibition was obtained from a Quebec court with the object of restraining the Q.P.U. Commission from acting until the general question of the validity of the legislation appointing the Montreal Tramways Commission is settled by the courts. The action was taken by L. Dubois and H. Robert, the Montreal Tramways Commission, the M.T. Co., the local municipalities and the Attorney General being named as defendants. At the Quebec Public Utilities Commission's sitting on July 19, counsel for the plaintiffs in the action argued in favor of postponing the hearing by the commission until the civil action is disposed of, but counsel for the city and for the M.T. Co. urged the necessity of an early settlement. The Public Utility Commission, after hearing argument, adjourned until July 14, when the Chairman, F. W. Hibbert, gave judgment, holding that the Public Utilities Commission has plenary powers in its own field and is not a court of inferior jurisdiction to the Superior Court. It also pointed out that a stay of proceedings might injuriously affect the public interests. The Public Utilities Commissioners then fixed July 31 for the opening of the hearing on the appeals.

**New Brunswick Power Co.**—See article "New Brunswick Power Co. Investigation" on another page of this issue.

**Port Arthur Civic Ry.**—See Fort William Municipal Ry. in an earlier part of this article.

**Quebec Railway, Light & Power Co.**—In reference to changes in this company's fares, detailed in Canadian Railway and Marine World for July, pg. 305, it was stated that workmen's tickets, the price of which was changed from 8 for 25c to 7 for 25c, good between 6 and 8 a.m. and 5 and 7 p.m., would be accepted only from males, and not also from females as formerly. It is now announced that their use by both sexes will be allowed during the limited hours above mentioned.

### Electric Railway Statistics for Year Ended June 30, 1917.

A table prepared by the Comptroller of Statistics of the Railways Department at Ottawa as to electric railway operations in Canada for the year ended June 30, 1917, give the following details:—

	1916-1917.	1915-1916.
Mileage, operating ..	1,743.54	1,730.73
Capital stock .....	\$70,606,520.00	\$67,738,275.00
Funded debts .....	90,628,219.00	87,157,349.00
Gross earnings .....	30,237,663.54	27,416,284.60
Operating expenses ..	20,098,634.35	18,099,905.65
Net earnings from operations ..	10,139,029.19	9,316,378.95
Miscellaneous income ..	2,292,200.76	2,928,573.83
Corporate income ..	\$12,431,229.95	\$12,244,952.78
Taxes, interest, etc..	7,552,368.55	7,358,283.67
Net income ..	\$4,878,861.40	\$4,886,669.11
Appropriated to reserves ..	1,285,654.22	1,535,071.35
Appropriated to dividends ..	2,468,686.61	2,834,906.82
Unappropriated net earnings ..	\$1,124,520.57	\$516,690.94
Passengers carried ..	629,441,997	580,094,167
Tons of freight hauled ..	2,333,539	1,936,647
Car mileage ..	84,073,046	82,516,612
Equipment, all kinds ..	4,295	4,442
Employees, all grades ..	11,696	10,622
Salaries and wages ..	\$9,451,685.00	\$8,767,734.00
Accidents, all kinds—		
Killed ..	63	50
Injured ..	2,728	3,029

### Toronto Suburban Railway Trailer Cars.

The Toronto Suburban Ry. has bought 2 second hand trailer cars, for use on its Guelph Division, where the existing rolling stock has proved quite inadequate to cope with the traffic. They were built by the Pullman Co., and purchased from the Transit Utilities Co., New York, and are finished straight panel outside and with mahogany and wood head lining inside. There are two steps on each side of the platform, 10 and 13 in. respectively, the drop from the lowest step to the ground being 26 in., for which a stool is used. The seats are both cross and longitudinal, upholstered in cane, and there is seating accommodation for 48 persons. There are 12 windows on each side and 4 at the ends, with upper and lower sash and pantosote curtains. The main body longitudinal sills, of which there are six, are 4 by 5½ in., platform sills, two outside 8 by 3¼ in., tapering to 6 in. at outer edge of platform; these run under the main sills of car body, with dimensions of 3¼ by 3½ in., and butt against car body steel bolster. The inside sills, 3½ by 8 in., are reinforced by steel plates and tied by rods, and they project under the main car body the same as the outside sills. Following are the chief dimensions:—

Length outside of sills .....	38 ft. 3 in.
Length over all .....	46 ft. 5 in.
Width outside of sills .....	8 ft. 6 in.
Width at eaves .....	8 ft. 9½ in.
Height over all .....	13 ft.
Length inside .....	38 ft. 3 in.
Width inside .....	7 ft. 10 in.
Weight of body .....	31,772 lb.
Truck wheel base .....	5 ft.
Wheel gauge .....	4 ft. 8¼ in.
Wheels ..	Chilled, 33 in.
Axles ..	M.C.B.
Journals ..	¾ by 6 in.
Truck weight ..	6,200 lb.
Brakes ..	Westinghouse hand
Coupler ..	Tomlinson
Heating ..	Hot air

### Calgary Municipal Railway Finances and Fares.

In an interview on July 10, Commissioner Graves, discussing the financial position of the city's electric railway for the six months ended June 30, is reported to have said that there was a surplus of \$4,672 this year, against a deficit of about \$20,000 at June 30, 1917. It might be said that the line was \$24,000 better off than in 1917, but that was not a justifiable premise on which to base any argument. The different position is due to better business conditions, general prosperity, and to the saving in cost of operation due to the introduction of the one-man cars. Mr. Graves further said that there will be considerable extra expenditure this year for many necessary repairs. Extensive repairs of an expensive character are necessary on the cars. The first shipment of wheels for this purpose is expected early in August. The car repairs are only the first of the big items of expense that will have to be taken into account. This will mean, he added, that increased revenue will have to be found somewhere, and the suggestion that workmen's fares be eliminated, will likely be the first step in that direction.

The matter of fares on the municipal railway was casually mentioned at a recent meeting of the city council, when the estimates for 1918 were under consideration. Suggestions were then made in the direction of cutting off workmen's tickets, of making the ordinary fare a straight 5c one; and of a double fare on the Bowness Park line.



## Increases in Electric Railway Employes' Wages.

**British Columbia Electric Ry.**—As mentioned in Canadian Railway and Marine World for July, a board of conciliation and investigation was appointed by the Dominion Minister of Labor, to deal with a dispute between the company and its employes. The application for the appointment was made by the company, the board being constituted as follows: Mr. Justice W. A. MacDonald, chairman; F. Buscombe, representing the company; and T. J. Coughlin, representing the men. The nature and cause of dispute, including claims and demands by either party to which exception was taken, were set forth as follows: "The B.C.E.R. Co., on Sept. 1, 1915, entered into an agreement with the Amalgamated Association of Street & Electric Railway Employes of America, represented by local division 101, of Vancouver; local division 109, of Victoria; and local division 134, of New Westminster, comprising employes in various departments of the company, which agreement embodied a wage schedule and working conditions for the period ending June 30, 1918. On Sept. 16, 1916, and again on June 21, 1917, certain amendments to the agreement, by way of increase in wages and change in working conditions, were made by mutual agreement between the parties thereto. The company has offered to continue the agreement of Sept. 1, 1915, as amended, for a further period to be agreed on, with an increase in the wages therein stipulated equivalent to 10% of the total aggregate wages now paid to all the employes affected by the agreement, the allocation of such increase to be mutually agreed upon. The association has refused to continue the agreement after June 30, 1918, on the terms offered by the company and has demanded from the company wages and working conditions to take effect from July 1, which the company cannot accept."

The rate of wages per hour paid under the old agreement was as follows:—

	City lines.	Interurban lines.
1st six months .....	27c	28½c
2nd six months .....	35c	36½c
2nd year .....	35c	36½c
3rd year .....	36c	37½c
4th year .....	38c	39½c
After 4th year .....	40c	41½c

No extra rate for Sundays; overtime for day men, time and a half for first 6 hours, double time afterwards; overtime for night men, time and a half for first 2 hours, double time thereafter.

The men asked for an 8 hour day and other concessions, and for a maximum rate of 51c an hour, while the company offered 44c an hour as the maximum rate for the Vancouver men.

A majority report was issued July 6, the dissentient being T. J. Coughlin, the men's representative. The report concedes the principle of the 8 hour day, but recommends that its application be postponed until after the war; the minimum wages for conductors and motormen and conductors recommended is 40c an hour, and the maximum 47c an hour, this maximum to be reached in 2 years instead of 4 as heretofore; the new agreement to be for one year, and it is recommended that in the event of an appreciable further increase in the cost of living, the rate of wages be varied accordingly. The report also recommends that overtime should be paid after 9 hours' work instead of after 9½ hours as heretofore. The report refers to the jitney traffic, which materially affected the company's receipts, and added: "Whether, under the circum-

stances, the company will attempt to meet the heavy loss in operation, by curtailment of its lines, reduction of the number of cars, elimination of jitney traffic, increase of fares, or adoption of the 'carry for cost' scheme, is not for us to determine. At present it is in the unfortunate position of being unable, under existing conditions, to pass the enormously increased cost on to the public, upon whom, however, it must inevitably fall in the end; for if the public wants the service, it will have to pay for it."

Prior to the issue of the award, the men showed considerable restiveness, and on June 27, the chairman of the conciliation board intimated that they would be guilty of a direct violation of the law if they went on strike before the award was made. Notwithstanding this intimation, they decided at a meeting on the night of June 29, to go on strike July 2. The strike extended over the entire system, both on the mainland and on Vancouver Island, and continued until July 10. As the men refused the conciliation board's recommendation, a new scale was arranged, ranging from 40c to 51c an hour, the maximum to be reached in 2 years. Another strike started July 16, the men going out in sympathy with the electrical workers.

**The Montreal & Southern Counties Ry.** has advanced its conductors' and motormen's wages to the following rates per hour:—

Suburban lines, conductors and motormen, 1st year, 28c; 2nd and 3rd years, 29c; 4th and 5th years, 30c; 6th and 7th years, 31c; 8th and 9th years, 33c; 10th year, 35c.

Interurban lines, conductors and motormen, 1st year, 30c; 2nd and 3rd years, 31c; 4th and 5th years, 32c; 6th and 7th years, 33c; 8th and 9th years, 35c; 10th year, 37c.

Interurban lines, trainmen, 1st year, 28c; 2nd and 3rd years, 29c; 4th and 5th years, 30c; 6th and 7th years, 31c; 8th and 9th years, 33c; 10th year, 35c.

Conductors and motormen entering the company's employ must work at least six months on the suburban lines before being eligible for work on the interurban division.

**Montreal Tramways Co.**—In the particulars of increases in wages, given in Canadian Railway and Marine World for July, on pg. 308, the new rate for 4th year men was stated as 35c an hour. It should have been 33c, the same as for the 3rd year. As stated in the same issue, the increases were to date from June 1, but they were held back owing to the City of Montreal and surrounding municipalities having appealed against the Montreal Tramways Commission's decision authorizing the company to increase its passenger fares. Towards the end of July the men refused to wait longer and the new scale of wages was put into effect.

**New Brunswick Power Co.**—The board of conciliation appointed to investigate the dispute as to the New Brunswick Power Co.'s street railway employes' wages, consisting of Judge Chandler, of Moncton, chairman; G. E. Day, representing the company, and W. F. Hathaway, representing the men. The men asked an increase of 7c an hour for all classes of employes, with an additional 4c an hour for Sunday work. The present schedule for conductors and motormen is: 1st six months, 25c; second six months, 27c; after one year, 28c; after two years,

30c. Sunday labor is paid for at 4c an hour above regular rates.

**Ottawa Electric Ry.**—A board of conciliation was appointed recently to arbitrate as to employes' wages. The present rate of wages for conductors and motormen is 26c an hour for the 1st year, 27c for the second year, and 30c afterwards, with 4c an hour extra on Sundays and legal holidays and double time for over 9 hours' work. The wages of chief conductors and chief motormen are \$95 a month. The men asked for a rate starting at 46c and rising to 50c an hour, the higher rate to be reached after one year's service. The company expressed its willingness to accept any award made by the board, at the same time stating that it regarded the increase asked for by the men as being exorbitant. The board consisted of Judge Gunn, chairman; G. F. Henderson, K.C., representing the company, and F. Bancroft, representing the men.

**Regina Municipal Ry.**—Representatives of the union employes petitioned the Regina, Sask., City Council on July 16, asking that the minimum rate for all employes be 40c an hour. The present rate of pay is 30¼c an hour for the first 6 months and 33c thereafter. The council's street railway committee, on July 15, recommended the council to raise the minimum rate to 55c an hour. The whole question was referred back to the committee for further consideration.

**The Three Rivers Traction Co.,** Three Rivers, Que., which heretofore paid its motormen from 25c to 29c an hour, has advanced them to from 30c to 34c an hour.

**Toronto Ry.**—See under "Toronto Ry. Machinists' Wages" on another page of this issue.

### Regina Municipal Railway Investigation.

An investigation into Regina Municipal Ry. affairs was opened at Regina, Sask., before Judge Harrison, July 2. The scope of the investigation was set out in the report of the city council's committee published in Canadian Railway and Marine World for July, pg. 305. The parties interested were represented by counsel, who examined witnesses at length, and a considerable number of documents were put in. The judge of investigation sat until July 6, and again on July 13, it being expected that the hearing of evidence would be concluded early the following week.

It was reported at a meeting of the City Council July 12, that it had been arranged to postpone further investigation proceedings until the autumn.

**The Southern Canada Power Co.,** which comprises among its properties the Sherbrooke Railway & Power Co., Sherbrooke, Que., has made some changes in its directorate. C. J. McCuaig, of Montreal, having retired. W. C. Hawkins, Vice President and Managing Director, Dominion Power & Transmission Co., Hamilton, Ont., has been re-elected President, the other directors being: F. W. Teele, Vice President; J. B. Woodyatt, General Manager; L. C. Haskell, Secretary-Treasurer; W. K. Baldwin, H. T. Chalifoux, Jas. Davidson, W. H. Miner, J. R. Moodie, A. J. Nesbitt, Geo. Parent, K.C., C. E. Read, J. M. Robertson, C. W. Tooke, J. S. Gillies, H. A. Sifton.



## Toronto Railway Machinists' Wages Arbitration.

The Minister of Labor appointed a board of conciliation in June to deal with a dispute between the Toronto Ry. and its machinists, members of the International Association of Machinists. Judge Ruddy, of Whitby, Ont., was chairman, H. H. Dewart, K.C., representing the company, and F. Bancroft the men. The chairman and F. Bancroft made a majority report on July 4, from which the following are extracts:—

The company's representatives sought to show that its machine shop is not one which could be compared with a machine shop connected with an industry producing commodities for sale, and endeavored to compare it with locomotive houses on steam railways. The men's representatives sought to prove that the machinists employed by the company are doing general machine work for the company, for subsidiary companies associated with it, and also for other parties distinct from the Toronto Ry.

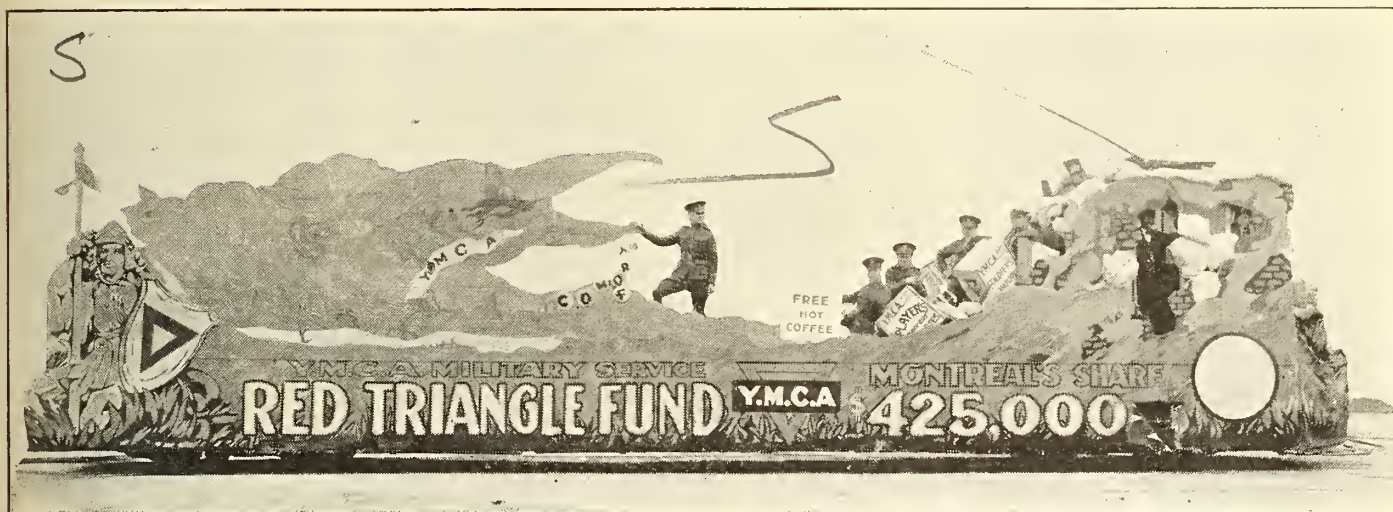
The members of the board who sign this award are convinced that the men's representatives have established by the evidence adduced that the men involved

of the week, time and a half. After 10 p.m., double time, until workman is finished and goes off duty. On Saturday, time and a half shall be paid for 4½ hours after one-half of the regular day has been worked, and then double time until workman leaves duty. Double time shall be paid on Sundays and holidays. No man shall suffer a reduction through the adoption of the foregoing rates. If any grievance arises between the parties to the contract, the company shall receive a committee of its machinists, and, if possible, adjust such grievance. In case of a disagreement over the interpretation of the schedule, there shall be no cessation of work until negotiations between the highest representatives of both parties shall have failed to come to an understanding. No discrimination shall be shown against shop committees elected by the men to transact their business. The award shall remain in force for one year from June 1, 1918, unless 30 days notice be given by either party of a desired change.

While the majority award is retroactive to June 1, and the machinists have

fares, it is unable to raise fares in order to compensate for advances in wages. He considered that the minimum rate of wages should be 55c an hour; that 9 hours should constitute a day's work on the first five days of the week and 5 hours on Saturday. The two matters affecting overtime and Sunday labor were dealt with together. He considered that as the Toronto Ry. operates continuously day and night all the year round, at a fixed schedule of fares, which is reduced during certain hours daily and on Sundays, the company is in a different condition from ordinary manufacturing and industrial concerns. He recommended that all hours worked in excess of 9 per day be considered overtime, and paid for the 10th hour at a rate not less than the minimum flat rate of 55c an hour; that the rate for Sunday labor be the same, subject to the provisions that no man shall be required to work more than 6 days in any one week. The terms of the award to be accepted for one year from June 1, and to be binding upon both parties.

While disagreeing with the majority report, the company considered it in the best interests of all concerned to accept it, and notified the Department of Labor accordingly.



Montreal Tramway Co.'s Float in Y.M.C.A. Campaign.

The float was made on a freight car, which was fixed up with beaver board, sand bags and paint, to represent a scene at the front, showing the trenches and a Y.M.C.A. hut, the latter being made from the car's cab. The car was run all over the city lines during the days and evenings of the campaign, carrying a uniformed band, and attracted great attention. We are indebted to A. Gaboury, Superintendent, M.T. Co., for the photograph.

are qualified machinists; that the standard minimum rate in Toronto for machinists is 55c an hour; that the standard working day for machinists in Toronto is 9 hours, and that overtime rates prevail after a regular working day of 9 hours for five days a week, and half a day on Saturday. The company's own witnesses to some extent corroborated these claims. It was established by witnesses for the company that men in the C.P.R. and G.T. R. machine shops enjoy a 9 hour day and general overtime rates. The majority of the board recommends the following as terms of employment for the men involved, "which ought to be satisfactory to both parties":—

That the minimum wages be 55c an hour. Nine hours shall constitute a day's work, for the first five days of the week, and 4½ hours on Saturday, to be worked as follows: From Monday until Friday, inclusive, between 7 a.m. and 5.30 p.m., and on Saturday between 7 a.m. and 12 noon. All hours worked in excess of this shall be overtime and paid for as follows: From the end of the regular working day until 10 p.m. on the first five working days

been working 10 hours a day during June, it is recommended that the 10th hour from June 1 to July 4 be paid at straight time, and after July 4 overtime rates prevail as herein before recommended.

H. H. Dewart, representing the company, made a minority report in which, after reviewing the nature of the application, and the efforts made to bring about a settlement, he set out the following matters as being in dispute and upon which the board's recommendation should be made:—The minimum rate of wages per hour; the hours of labor per day; the question of weekday overtime, time and half; double time for Sundays and holidays; the period during which any settlement should continue and the date when it should commence. The two first mentioned matters are dealt with together. The machinists based their claim upon concessions made by a large number of firms in February, 1918, which gave a rate of 55c an hour, both night and day, for practically a nine hour day. He contended that the Toronto Ry. stands in a different position from other concerns. On account of having a fixed tariff of

**Regina Municipal Ry. Traffic.**—The Regina, Sask., City Council on July 9, took up the question of street car service to the military camp on the exhibition grounds. In addition to the present street car service, jitneys are being operated for which the council charges a license fee. It was stated that 15 cars would be required for the transportation of the soldiers on their being released from their afternoon work, and that an additional number over the present service would be required to land them back at closing time. This is a question of extraordinary traffic of a temporary character, for the accommodation of which special provision can only be made by reducing service on other parts of the system, or by having rolling stock and a staff sufficient to cope with it.

The Levis County Ry. has bought a simplex side dump car, 12 to 14 yards capacity, with double trucks, cabin at one end, G.E. equipment and Westinghouse straight air brake.

The Toronto & York Radial Ry. has bought two second hand cars from Edmonton Radial Ry.



## Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—The Brantford, Ont., City Council, on July 8, decided to employ a qualified electrician to make a report on the line from Brantford to Paris, and to have the City Engineer report as to the condition of the roadbed. This was the outcome of a discussion as to the condition of the line, its earning power and prospects. W. R. Turnbull, one of the commissioners in charge of the line, said the investigation would show that the line was safe, though not in a first class condition.

Reference was made to the projected Terrace Hill line, but no action was taken. (May, pg. 211.)

**British Columbia Electric Ry.**—We are officially advised that the only work being done now is the completion of the substation at Point Grey, and that no other betterments are contemplated at present. (July, pg. 308.)

**Calgary Municipal Ry.**—Several meetings have been held, at which the city council and the property owners affected by the proposal to straighten the Ogden line, were represented, but after considerable discussion no decision was reached. The Calgary & Western Land Co. gave certain parts of the present right of way, on certain understandings with the city, and it is opposing any change. The proposed straightened route would cut down the operating time on the line by three minutes a trip. (July, pg. 308.)

**Edmonton Radial Ry.**—The City Council has authorized the placing of new crossings on Jasper Ave., from 102nd to 108th streets at a cost of \$1,150, and some track repairs on Saskatchewan Ave., at a cost of \$800. (July, pg. 308.)

**The Guelph Radial Ry.** is, we are officially advised, constructing 3,000 ft. of track on Garden St., Guelph, Ont. A. H. Foster, Guelph, is Manager. (May, pg. 211.)

**Kettle Valley Ry.**—J. J. Warren, President, is reported to have stated recently that arrangements had been completed for carrying through the development of the Copper Mountain plans, which include the building of a branch of the K.V.R. to the mining properties. The three projects—the railway, the West Kootenay Light & Power Co.'s power line, and the erection of the ore mill by the mining company, will, he said, be carried through simultaneously. The contract for the railway was let to W. P. Tierney, who got his outfit on the job at the end of April. (July, pg. 285.)

**The Levis County Ry.** received tenders recently for the supply of 16,000 cedar, hemlock or jackpine ties, no. 1 grade, 6 in. thick, with a minimum face of 6 in., delivered at Levis, Que. H. E. Weyman, Levis, Que., is Manager.

**Montreal Tramways Co.**—We were officially advised, July 12, that work on the extension of lines in the city had not been commenced owing to the impossibility of obtaining the special type of rails required. As a result, the date of starting the work had been extended by the commission to July 15, and it was thought likely that it would be further extended until early in 1919. The work to be done is as follows:—

Route A, 1.95 miles—On St. Patrick St., from Church St. to Monk Boulevard, and on Monk Boulevard from St. Patrick St. to Allard St., these lines to be connected with those on Church St.

Route B, 1.49 miles—From Westmount on the company's property and on the

Cote de Neiges Road to Queen Mary Road with connections both east and west to the existing tracks on this last mentioned road.

Route C, 1.84 miles—On Park Ave. from Atlantic Ave. to Beaumont St., from Park Ave. to Bickerdike St., and on Bickerdike St. to Ball St.

Route E, 2.78 miles—On De Fleuremont St. from Christophe Colomb St. to Papineau St., with connection to the existing lines on De Fleuremont St. and with connection to the lines on Christophe Colomb St. and Papineau St. to the north; on Rosemont Boulevard from Papineau St. to Boulevard Pie IX., with connection to the lines on Papineau St., and on Boulevard Pie IX. to the south; on Boulevard Pie IX. from Rosemont Boulevard to the present double track of Boulevard Pie IX.; on Bellechasse St. from Henri Julien St. to St. Denis St., with connection to the lines on St. Denis St. in both north and south directions; the construction of these lines thus forming a continuous line from St. Lawrence St. to Pius IX. Boulevard, inclusively by way of Bellechasse, St. Denis, De Fleuremont and Papineau Streets and Rosemont and Pius IX. Boulevard.

Route F, 2.31 miles—On Iberville St. from Mason St. to Belanger St., with connections with the present lines on Iberville and Mason Sts., and with connections with the lines to be constructed on Rosemont Boulevard both east and west.

These lines are to be laid with 115 lb. steel rails on 6 x 8 x 8 ties, welded joints, without bonds, and to be ballasted with stone.

The other line, route D, is 4.11 miles long, and is on Kelly St. in Bordeaux Ward, from the Ahunstia railway station to Tolhurst St., on Tolhurst St. from Kelly St. to Daze St., on Daze St. from Tolhurst St. to Meilleur St., on Meilleur St. from Daze St. to McDuff St., on McDuff St. from Meilleur St. to Poincarre St., on Poincarre St. from McDuff St. to Boulevard Gouin, with a connection with the line to the Bas de Sault. This line is to be laid with 80 lb. steel rails on 6 x 8 x 8 ties, continuous joints, 2—4/0 bonds, and to be ballasted with stone. (June, 1917, pg. 243.)

**Moose Jaw Electric Ry.**—The Moose Jaw, Sask., City Council, on July 2, ordered the stopping of street railway traffic over the South Hill bridge, on and after July 5. A committee of investigation reported that while the bridge was in good condition, the method of laying the rails was such that the supports of the understructure must be absolutely sound. The stringers had become more or less rotten and the track was dependent upon the rails for alignment, the condition being such that the bridge was dangerous for traffic. The company had been advised that the council would take no responsibility for its further operation over the bridge. It was recommended that the finance committee and the City Commissioners consult with the committee as to necessary repairs to the bridge.

**Quebec Ry., Light & Power Co.**—W. J. Lynch, General Manager, on his return from a consultation with the company's directors in Montreal, July 10, is reported to have said that as soon as estimates are completed showing the materials required, construction will be started on the projected extension of the line along the Beauport Road, from Limoilou to the city boundary. It is also reported that the company will take over the spur line from Mastai station to Beauport asylum and

operate it in conjunction with its system. (July, pg. 308.)

**The Suburban Rapid Transit Co.**, a subsidiary of the Winnipeg Electric Ry. Co., applied to the Assiniboine Municipal Council, July 2, for concessions respecting its pole lines. The council refused the application on the ground that the changes proposed were not in the locality's best interests.

**Toronto Suburban Ry.**—Under an agreement made with the Toronto City Council Nov. 30, 1917, and ratified at the Ontario Legislature's recent session, the company is granted an extension of time to Nov. 30, within which "to construct, complete, equip and put in operation its railway upon the portion of Davenport Road lying east of Bathurst St., to the northern limits of the city as the same existed in 1899. (Mar., pg. 117.)

**Winnipeg Electric Ry.**—The Winnipeg City Council received notice, July 3, that the company proposed to start work on the Sargent Ave. extension at once. (July, pg. 308.)

**Winnipeg Electric Ry.**—The city engineer reported to the Winnipeg Board of Control July 8, that the company had expended \$30,000 upon betterments and improvements to its lines and cars during May, being \$5,000 more than the agreement with the city called for. No expenditures had been made in the nature of construction work, so far as the elimination of electrolysis was concerned.

The city council was informed, July 10, that although the company looked upon an extension of the Talbot Ave. line to Cameron St. as a necessary one, it could not undertake it this year. (June, pg. 255.)

**Fuel for Chatham, Wallaceburg & Lake Erie Ry.**—The Ontario Railway and Municipal Board, on July 17, granted an extension of time to Aug. 1, for the use of natural gas for the generation of power for the operation of this railway. The reason for the extension is that there has been a delay in the delivery of repair parts required for the plant before other fuel can be used.

The Hydro Electric Power Commission of Ontario has received 10 of the 12 electric locomotives which it ordered recently from C. E. A. Carr Co., Toronto, for use in connection with its Chippewa-Queens-ton power development scheme. The trucks, bodies and cabs are being built by the National Steel Car Co. Six of the locomotives are supplied with General Electric equipment, and are supplied complete by C. E. A. Carr Co., and for the other six, which have Westinghouse equipment, that firm supplies the trucks, bodies and cabs only. These locomotives were completely described in Canadian Railway and Marine World for Dec., 1917, and illustrated in Apr., 1918.

The London Public Utilities Commission entertained representatives of London and other municipalities at dinner at Port Stanley, Ont., July 11. Among the speakers were the Premier of Ontario; Sir Adam Beck, chairman of the Hydro-Electric Power Commission of Ontario; R. Pocock, chairman London Public Utilities Commission, and J. W. Lyon, President Hydro-Electric Radial Ry. Association. Sir Adam Beck, in referring to criticisms of the London & Port Stanley Ry. finances, said the audited reports showed that the railway was not a burden to the city, but the exact reverse.



## The Electrical Workers Strike in British Columbia.

The placing in jeopardy of so essential a public service as light, power and electric transportation by the action of a body of men who acknowledge no responsibility to the public, is a situation which should not be allowed to pass without a warning. An unprecedented state of affairs arose recently in Vancouver, due to the action of the operators of the British Columbia Electric Ry.'s power plants and substations in wilfully attempting to close down all electrical supply, as a means of enforcing their wage demands and other alleged grievances. The details of the actions which preceded the shutting off of power at midnight on Saturday, July 13, without notice being given to the company or the public, warrant full disclosure.

The agreement between the B.C. Electric Ry. Co., the Western Power Co. and the B.C. Telephone Co. respectively and the electrical workers expired on June 30. Previous to that the men laid a new agreement, embodying many drastic increases and changes, before these companies. The two first named offered the men increases of 10%, but they were refused. Accordingly a conciliation board under the Dominion Act was proposed, but the men refused, thereby necessitating the Dominion Government naming an arbitrator for them. The conciliation board was formed, but the electrical workers refused to recognize it.

In the meantime, an arbitration with the B.C. Electric Co.'s street railway men was going on, but its sessions did not close until June 28, and no time was left in which to bring down a decision before June 30. The men in both unions, decided to go on strike at midnight, July 1, in contravention of the law.

It is believed that the electrical workers fully intended that Vancouver and the surrounding country should have been left without light or power on their going on strike, but the Electrical Superintendent, and some seven or eight of his assistants, maintained the service in a score of substations scattered over the mainland. No inconvenience was occasioned, except by the absence of street car service, both because the street car men were on strike and because the handful of men could not keep the rotaries in operation.

On July 11, about 1.10 a.m., the company came to a settlement with the two unions, agreements were signed, and service was resumed the same day. It was believed that the matters had been finally settled, with the exception of one or two minor details, such as free transportation and a lighting rate concession, which had by consent been left to be adjusted later.

The astonishment of the whole district, the company's management included, may be imagined when it is stated that a few minutes after midnight on July 14, suddenly and without warning, all lights, power, street cars and interurban cars fed by the B.C. Electric Co.'s system stopped. Thousands of persons were abroad at this hour. Street cars were loaded. Interurban cars were miles from their destinations. One car with 60 passengers and another with about 50 had set out from Vancouver for New Westminster. A train with 70 persons in it was stalled at New Westminster, unable to proceed along the Fraser Valley division. Other interurban cars were stalled on the Lulu Island and Burnaby lake lines, each with passengers in them.

The effect of the stoppage of light and power in hospitals and cold storage plants need not be emphasized. It is evident

that the men intended to make the tie-up complete, because not a switch was left in place in the main receiving station.

The Electrical Superintendent arrived there within a few minutes and found a large group of linemen and operators around the station. Luckily he had an electric torch in his automobile, for without it he would hardly have been able to make his way through the station. There was not a lantern left. The substation had been deserted.

All that it was possible to ascertain was that the operators had received orders from someone unknown, not the load dispatcher, to close down the plant. The operators at the Lake Buntzen hydro-electric plant were telephoned to and they threw off the machines there. All switches throughout the country were pulled, thus entailing a tremendous mechanical task to reinstate them.

Superintendent Newell immediately got in touch with Lake Buntzen and aroused the Superintendent there, who had retired for the night. Other engineers arrived and in 40 minutes the most of the city load had been picked up and an hour and a half later most of the railway lines were operated and cars able to proceed to the barns. Many of them finished their owl runs.

An attempt was made to arrive at the cause of the trouble, but communication with E. H. Morrison, business agent for the electrical workers, brought no coherent account. He intimated finally that they would not meet the company in any way unless the Electrical Superintendent was discharged. On Sunday morning Mr. Morrison called up and asked if this had been done, and when he was told that it had not, he refused to have further communication with the company. He mentioned that other unnamed officials would have to be discharged also.

The company understands, and it has been stated in the newspapers, that the men's union cabled to the directors of the company in London, Eng., demanding the dismissal of the Electrical Superintendent.

On Sunday, July 14, members of the board of trade and the mayor formed a committee to endeavor to bring about a settlement. Street cars were again tied up, owing both to the scarcity of current and to the refusal of the men to work while the electrical workers were on strike. A joint committee was formed, having on it several labor representatives, and the company laid its case before them.

The men demanded transportation and lighting concessions, and although it was pointed out that these had never come up, they were granted forthwith.

They alleged that 25 men had been dismissed in discriminating fashion and strike breakers kept on.

W. G. Murrin, Assistant General Manager, showed clearly that the men who had been laid off were linemen and groundmen, and were extra staff that had been working on special work, who the company expected to lay off several weeks since on the completion of the work. These men were laid off strictly according to the length of their service and not a single non-union lineman or groundman was in the company's employ.

The men demanded the dismissal of Mr. Newell, but it was pointed out that the 25 men had not been laid off by him, but by the foreman in the regular course of work. The company, however, agreed to

submit the case of the Electrical Superintendent to arbitration, while the electrical workers should go back.

This solution was accepted by the joint executive of electrical workers and street railway men, who promised to recommend it to their members. The street railway men met on Monday and car service was resumed the same afternoon. The electrical workers met on Monday night, but refused to carry out the recommendations of their executive and demanded the dismissal of the Superintendent immediately.

The arbitrary attitude of the electrical workers is without precedent in British Columbia, and they should be censured without exception, for their deliberate attempt to tie up the life of Vancouver and district when they shut down all electrical supply without warning on notice on the morning of July 14.

This has ceased to be a matter between the B.C. Electric Ry. and the employees. It is a matter for the public to settle, whether they will allow any person or body of persons to close down such essential services as electric light and power without a moment's notice and without responsibility for the consequences. The men may have the right to cease work, but they have not the right to tamper with the company's property, thereby inconveniencing thousands of persons and causing possible destruction of property, and perhaps death.

It is hard to see what good could have resulted from such action, which affected the public more than the company. The public is well aware who is to blame, and there is no disposition to saddle this disruption of public utility service on any but the men. Whatever grievances they might have had, they were not warranted for a moment in pulling the switches and plunging the country into darkness, without notice, but should have laid them before the company officers, when they would have been given fair consideration.

### Mainly About Electric Railway People.

W. H. McAlooney, of Halifax, N.S., and formerly Superintendent of Rolling Stock, Denver Tramways Co., Denver, Col., has been appointed Superintendent of Rolling Stock, Winnipeg Electric Ry., vice G. Garrett, resigned.

James Anderson, Vice President and Purchasing Agent, Sandwich, Windsor & Amherstburg Ry., who intended making a trip to the Pacific Coast some two months ago, and had to postpone it owing to his wife's illness, hopes to be able to go in the near future, as Mrs. Anderson, who has been in Wellesley Hospital, Toronto, for some weeks, is convalescing satisfactorily.

Allan H. Royce, of Toronto, Vice President, Toronto Suburban Ry., and Secretary-Treasurer, Canadian St. Ry. Association, from 1904 to 1907, who died in North Carolina, April 16, left an estate valued at \$305,854.86. It consisted of clothing and jewellery, \$100; book debts, \$75; mortgages, \$6,204.83; life insurance, \$10,000; cash, \$104,114.86; real estate, \$5,400; miscellaneous, \$75,000; agreements for sale of land, \$30,000. As there was no will, the estate will be divided among his mother and four brothers, one of whom is Lt.-Col. G. C. Royce, Secretary-Treasurer and General Manager, Toronto Suburban Ry.



## New Brunswick Power Co. Investigation.

Under the provisions of an act passed by the New Brunswick Legislature at its last session, the Lieutenant Governor in council appointed a commission to investigate the New Brunswick Power Co.'s affairs. The commissioners, G. W. Currier, Henry Holgate and Prof. A. S. Ritchie, commenced their sittings in St. John, June 28. The act authorizes them to examine so far as they shall deem necessary all records of the company and its predecessors, and subsidiaries, to ascertain the original cost of plant, the amount realized from the sale of stocks and bonds and the earnings and expenditures—in fact, they have power to review everything done by any of the companies since their formation, and to trace what has been done with the capital subscribed, the proceeds of the sales of bonds, and the earnings of the several companies. The commissioners are also especially directed to enquire into the matters and affairs of the New Brunswick Investment Co., alleged to have been formed for the purpose of working out the purchase and transfer of the St. John Ry. Co. to the N. B. Power Co., so far as the same are pertinent to the enquiry; to enquire into the cost of the water privileges, etc., acquired by the N.B.P. Co. from the New Brunswick Hydro-Electric Co. or other company or persons; to enquire into the cost of street paving and maintenance and the removal of snow on streets occupied by the car tracks, and generally the use of the city property and franchise for uses connected with the power company's operations; to examine and analyse all legislation affecting the company or its predecessors, together with letters, orders-in-council, etc.; and to prepare and recommend for enactment such new legislation, or amendments to existing legislation, as in their opinion will ensure to the city of St. John adequate public utility service in street railway traffic, electric light and power and gas supply for heat and light at fair and reasonable rates; provide for a proper measure of control of streets and franchises by the city; define clearly the respective rights of the city and the power company, and conserve all legitimate rights, interests and franchises of the power company, as well as those of the city of St. John.

In order to carry out the investigation, the commissioners have power to appoint accountants, engineers or other qualified persons to make any enquiry and report on such matters as may be referred to them; to hear any evidence that may be offered and to call any witnesses. A penalty of not less than \$50 or more than \$500 may be enforced for disobeying the commissioners' orders to produce books, etc., and witnesses are liable to the same penalties for disobedience as in the case of proceedings before the supreme court. The costs are to be divided between the city and the company, and the commissioners' report is to be submitted to the government in sufficient time to be acted upon at the legislature's next session.

The act provides that notwithstanding any other provision of any act, the commissioners may, during the course of the investigation, whenever it shall appear to them advisable or justifiable and necessary for the temporary financial relief of the company, adjust and allow rates of fare for transportation, and rates for heating, lighting or power, which rates shall become operative seven days after the first publication of the order in the city's papers, and these rates will remain

in operation until altered by the commissioners or the legislature.

The commissioners may for the purposes of the investigation, adopt in whole or in part the evidence taken before the N.B. Board of Public Utilities in respect of the company's application to fix a rate for gas; the reports of W. F. Sloan and J. W. Waterman (the company's engineers), reports of the directors, and audits of the affairs of any of the companies.

W. C. Whiting, Boston, Mass., and W. B. Bennett, Wisconsin, Wis., have been investigating the company's plant on behalf of the city; and H. Loring, Boston, Mass., is watching the interests of United States holders of the company's securities.

The investigation is likely to last some considerable time.

## Eliminating Jitneys in Vancouver B.C.

Under the powers conferred by the British Columbia Legislature last session, carrying out the suggestions in Adam Short's report following his investigation into transportation matters in the territory in which the British Columbia Electric Ry. operates, the Vancouver City Council on June 21 passed a bylaw amending the old bylaw as to motor cars, covering the operation of jitneys. The new bylaw repeals a number of sections and subsections of bylaw 952 as amended by bylaw 1218, and enacts in their place sections classifying motor vehicles, and fixing the fees to be charged as licenses for certain classes, and prohibiting the operation of others on and after July 1.

Motor vehicles are divided into seven classes, of which two are prohibited, viz.: Class A, which includes all motor vehicles inviting passengers to travel by them over any particular route or within any zone, "as a means of local transportation similar to that ordinarily afforded by the operation of street railways." Class B includes motor vehicles accepting passengers for transportation at the terminus of any route traversed by it, and all other motor vehicles not covered by class A, C, D, E, F or G.

The other five classes for which licenses are required to be taken out to permit their operation after July 1, are:—Class C, including taxicabs or touring cars having no specified route, and hired only from a fixed stand on a public street or from a garage for a minimum fare of 25c in the city or partly in the city, and not more than two miles without, or for a minimum fare of 50c if the distance outside the city exceeds 2 miles. Class D includes sight-seeing cars not used in the carrier business, charging fares of 25c and 50c, as in class C. Class E includes motor vehicles used by hotels for the transportation of guests to and from trains and steamboats. Class F includes motor vehicles used exclusively for ambulances, hearses, or for the transportation of pall bearers at funerals. Class G includes motor vehicles used exclusively for carrying passengers between Woodward's Landing and Vancouver post office by a route specified in the bylaw. The license fee for each of these classes is \$30, with the exception of class D, the sight-seeing cars, for which \$50 is fixed.

The portion of the old bylaw as to license fee which is struck out is contained in schedule A of bylaw 952, as amended by bylaw 1218. It provided that "Every automobile or taxicab up to seven passengers, for every vehicle, \$30 per annum. Over seven passengers, per vehicle, \$50 per annum."

Notwithstanding the bylaw, which came into effect July 1, the jitney men continued their operations, the tie up of the street railway offering an excuse. Outside jitney men rushed in to the city, and a rate of 10c was generally charged, which was subsequently reduced. It was reported July 5 that over 400 jitneys were being operated during the strike.

Application was made to Justice Morrison in chambers, by the jitney men's league for an injunction to stay the coming in operation of the bylaw, which was granted. The council was advised by its legal department July 12 that the judge's action was ultra vires, and acting on this advice, the city's license inspector was directed to prosecute any drivers operating in contravention of the bylaw. The men were at once warned, and it is reported that a considerable number ceased operations.

## Public Control of Public Utilities in Quebec.

The Quebec Telegraph says:—"The extent to which the Province of Quebec is honeycombed by public utility corporations of every description is fully revealed in the Quebec Public Utilities Commission's eighth annual report, which has just been issued. This commission—composed of F. W. Hibbard, President; Sir George Garneau and F. C. Laberge, commissioners; with Jos. Ahern, Secretary,—has the regulation and supervision of all the public utilities operating on Provincial charters.

"The Quebec Government, in establishing this central governmental authority, has recognized the fact that all companies operating public utilities have an especially close relationship to the public, which imposes in return for special privileges, special obligations, a point upon which special stress has been laid, within recent years, in all progressive communities.

"Owing to the close relation of the public utility to the community generally, a strong current of opinion is noticeable in favor of public ownership of public utilities. In instituting public control of public utilities through an efficient government commission, the Quebec Government has anticipated this movement for public ownership. Public control, as it thus exists, in the Province of Quebec, while less radical and drastic than public ownership, has nevertheless conferred many of the benefits of the more extreme system, since, while ensuring justice to the private companies operating the utilities, it has insisted ever on the rights of the public to adequate service. In its adjustment of all disputes, the commission has met with a singular success in satisfactorily settling all differences, and providing for the continuance of the necessary service. The Quebec Public Utilities Commission is, in fact, an outstanding example of the possibility of combining private enterprise with successful public control."

**Women Conductors at Kingston.**—The Kingston, Portsmouth & Cataraqui Electric Ry., at Kingston, Ont., has 11 female conductors, no males being employed. Some of them have been working over 6 months. They are paid \$2.25 a day, and the management has experienced no difficulties in employing them, and states that their work has proved most satisfactory. No male conductors were discharged, but as vacancies occurred women were employed.



## Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.—

	10 months to Apr. 30, 1918.	10 months to Apr. 30, 1917.	10 months to Apr. 30, 1918.	10 months to Apr. 30, 1917.
Gross	\$515,417	\$447,429	\$5,010,688	\$4,514,434
Expenses	385,420	350,341	3,848,134	3,545,033
Net	129,997	97,088	1,162,554	969,401

### Cape Breton Electric Co.—

	Apr. 1918.	Apr. 1917.	1918.	1917.
Gross	\$37,674.04		\$34,508.77	
Expenses	27,985.85		21,727.37	
Net	9,688.19		12,781.40	

### Edmonton Radial Railway.—

	1918.	1917.
Revenue for May.....	\$39,975.01	\$38,981.50
Passengers carried ...	776,360	819,350

Although 42,990 less passengers were carried in May, 1918, than in May, 1917, the revenue, owing to the advances in fares, increased \$993.51.

London & Port Stanley Ry.—Sir Adam Beck, Chairman of the London Railway Commission, operating the L. & P.S.R., is reported to have stated, July 10, that after paying interest, sinking fund, rental and taxes, all but one year, the surplus earnings of the railway for the three years it had been operated by electricity, were about \$60,000.

### London Street Railway.—

	June 1918.	June 1917.
Gross	\$44,279.70	\$35,758.18
Expenses	32,089.99	30,802.82
Net	12,189.71	4,955.36

Quebec Ry., Light & Power Co.—Gross earnings for Jan. \$44,099.84; Feb., \$38,551.74; Mar., \$42,646.51; total, \$125,298.09. Of this, \$6,631.38 were earned outside the city. Percentage paid on earnings within city, 4% on \$118,666.71—\$4,746.66.

Toronto Civic Ry.—Receipts for June, \$27,443.28; passengers carried, 1,606,695, against \$22,617.29 receipts, and 1,342,062 passengers carried in June, 1917.

The surplus for April, after deduction of fixed charges, was \$11,128. The gross earnings for May were \$280,935; net earnings, \$68,592; surplus after deduction of fixed charges, \$13,192.

Toronto Ry., Toronto & York Radial Ry. and allied companies.—

	10 months to Apr. 30, 1918.	10 months to Apr. 30, 1917.	10 months to Apr. 30, 1918.	10 months to Apr. 30, 1917.
Gross	\$1,065,766	\$970,367	\$4,229,490	\$3,896,595
Expenses	565,038	490,524	2,285,928	2,029,129
Net	500,728	479,843	1,943,562	1,867,466

### Toronto Railway.—

	June 1918.	June 1917.	June 30, 1918.	June 30, 1917.
Gross	\$533,393.40	\$499,731.83	\$3,273,540	
City percentage	106,678.68	99,946.36	613,406	

A New York press report states that among the public utilities securities maturing there during this year is an issue of \$750,000 of the company's 6% one year notes, payable Dec. 1.

Winnipeg Electric Ry. and subsidiary companies.—

	10 months to Apr. 30, 1918.	10 months to Apr. 30, 1917.	10 months to Apr. 30, 1918.	10 months to Apr. 30, 1917.
Gross	\$296,433	\$265,594	\$1,237,263	\$1,159,350
Expenses	230,694	194,179	954,668	837,262
Net	65,739	71,415	282,595	322,088

## Proposed Sale of London & Lake Erie Ry. & Transportation Co.

The directors of the L. & L.E.R. & T. Co. decided, July 3, to refuse the London, Ont., City Council's offer for the purchase of the company's property. This offer was reported to be \$241,500, with a bonus of \$12,500, together with a bonus of \$25,000 to be contributed by Westminster Tp., \$15,000 and \$5,000 each from Yarmouth

and Delaware Tps., and was made subject to a vote of the ratepayers.

The St. Thomas, Ont., City Council has decided to submit a question to the ratepayers at an early date as to the purchase of the St. Thomas—Port Stanley section of the line at an early date.

## British Columbia Electric Railway Franchise.

Under the franchise agreement between the company and the Vancouver City Council, the city has to give six months notice of its intention to take over the company's lines. The date for giving this notice is Aug. 11, but as there have been tentative negotiations going on for some time past between the city and the company upon franchise matters, an understanding was reached, June 27, under which the existing franchise is to be extended for two months, the effect of which is that the city will not be required to give notice under sec. 34, before Oct.

11. This understanding was officially ratified July 3.

The franchise matter came before the Vancouver City Council's railway committee June 27, the company being represented by Geo. Kidd, General Manager, and A. T. Goward, Local Manager, Victoria. Mr. Kidd stated that he was willing and anxious to discuss a new franchise, as the present one was out of date and not in line with franchises in other cities of the size and importance of Vancouver. Campbell Sweeney, who had acted as chairman of a board of trade committee on street railway matters, referred to the mass of material this committee had collected, and stated that it had come to the conclusion that the company could not continue to operate under the present conditions. After some general discussion, it was agreed that when details of the proposed new franchise are to be discussed, the board of trade and other representative public bodies would be asked to send representatives to assist in framing the terms.

## Electric Railway Notes.

The Brantford, Ont., Municipal Ry. is reported to have ordered two new cars for the Brantford-Paris line, from the Preston Car & Coach Co.

The Toronto Civic Ry. has bought 2 tons of broom cane, for sweeper, 30 in. long, from the C. E. A. Carr Co., Toronto, at \$440 a ton f.o.b. Toronto.

The Edmonton, Alta., Public Utilities Committee extended until midnight the time during which day fares were available on the Edmonton Radial Ry. during the annual exhibition held recently.

Brantford, Ont., City Council on Jan. 8, authorized the City Treasurer to provide the Brantford Railway Commission with \$8,000 to complete payment for two interurban cars for the line to Paris.

The Detroit United Railway has asked the Interstate Commerce Commission for permission to increase its passenger fares to 2c a mile and to cancel all mileage and reduced rate tickets except school children's fares.

Complaints that the Sarnia St. Ry. was not giving an adequate service, and that its cars were not fitted with sufficient safety appliances, were investigated at Sarnia, July 15, by the Ontario Railway and Municipal Board.

The charges against Hamilton St. Ry. conductors of stealing tickets from fare-boxes were concluded in the Criminal Court at Hamilton July 2 and 3, with the following results:—J. W. Thompson was acquitted; G. Rodney, Jas. Fraser, G. Phillips, C. House and L. E. Binkley were each sentenced to two months imprisonment.

The St. John, N.B., City Council passed a resolution, July 16, asking the New Brunswick Government to repeal the agreement entered into with the St. John Ry. in regard to the use of the new bridge at the Reversible Falls, whereby the value of the company's property in the city for purposes of taxation was fixed during the currency of the agreement.

The Fort William, Ont., Trades and Labor Council wrote the mayor on July 4, as follows:—"In view of the proposed increase in the fares of the Port Arthur and Fort William street railways, steps should be taken at once by you to supply better service and to prevent the disgraceful overcrowding of the cars, especially in the hours when workers are travelling."

A Hamilton, Ont., press dispatch of July 25, states that a number of p.a.y.e. cars will be put in operation on the Hamilton St. Ry. lines, Aug. 5. An earlier press dispatch stated that these cars would be placed on certain lines only, and would be operated as one-man cars; but we were advised July 22, that the adoption of one-man cars had not been considered.

Toronto Ry. representatives are reported to have interviewed the Ontario Railway and Municipal Board, July 18, in an effort to prove that with conditions as at present it is impossible for the company to comply with the board's order to place the required number of new cars in service. It is stated that the board advised the representatives that it could take no action without notifying the city authorities and holding a special hearing.

Edmonton Radial Ry. tickets are sold 4 for 25c on the cars, and are sold 5 for 25c at certain stores. A considerable number of stores handled the tickets when the new schedule came into operation, but it was reported that at the end of June that most of them had ceased doing so. The commissioners are considering some other plan for handling the 5 for 25c tickets. The City Council on July 25 refused to again take up the question of reintroducing workmen's tickets.

A deputation from Richmond Hill, Ont., and other points on the Toronto & York Radial Ry.'s Metropolitan Division waited on the General Manager, July 5, to discuss the new fares put in operation. The deputation claimed that the effect of the new rates would be to force working men to live in Toronto city, where there work is. The General Manager stated that with the large increase in wages and other expenses, any compromise was impossible.

The Regina, Sask., City Council, on July 16, passed a bylaw fixing the license fee of motor cars charging a fare of less than 25c, at \$100, with a \$5,000 bond and prohibiting such cars being operated on any street upon which the Regina Municipal Ry. operates. It was reported that there was only one jitney service being operated in the city, the principal route being from the city to the exhibition grounds, for which a 10c fare was being charged.



# Marine Department

## Steamship Building in Canada for British Government.

**Cameron-Genoa Mills Shipbuilders, Ltd.**—The s.s. War Skeena, built by Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C., is having her machinery installed by Hutchison Bros., Victoria, B.C.

**Canadian Vickers, Ltd., Montreal.**—The s.s. War Duchess was launched at Montreal, June 29, the ceremony being performed by Col. W. I. Gear, Director of Steel Shipbuilding, Imperial Munitions Board. She was built under contract with the Imperial Munitions Board, for the

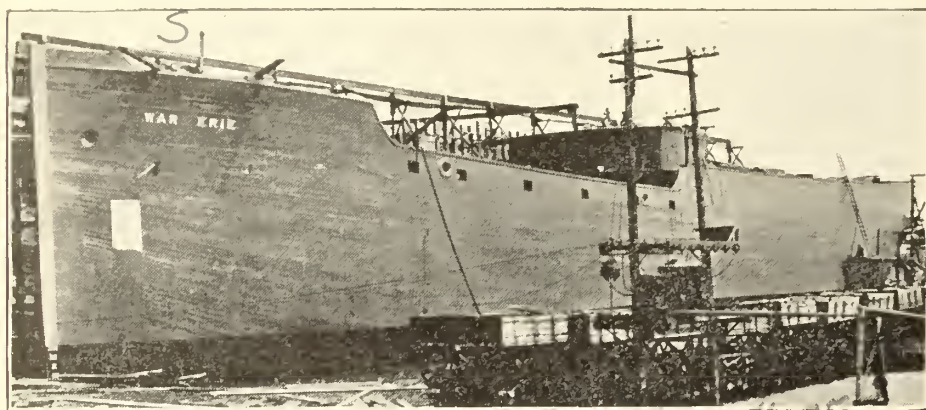
ter being considered a complete loss. Two other vessels are under way, and it is expected that 7 of the order for 9 will be completed this year. This is in addition to the s.s. Alaska, completed recently, and which was built originally for Norwegian interests, and taken over by the British Government.

**Fraser, Brace & Co., Montreal.**—The first two of the four wooden hulls under construction by this company for the Imperial Munitions Board, were launched,

War Suquash. This will complete the orders for wooden vessels placed with this company by the Imperial Munitions Board for the British Government.

**Midland Shipbuilding Co., Midland, Ont.**—The steel cargo steamship War Fiend, now building by this company, is the first of three ships ordered from it by the Imperial Munitions Board, and is of the following dimensions:—length over all, 261 ft.; length between perpendiculars, 251 ft.; depth moulded to main deck, 23 ft.; deadweight carrying capacity, 3,400 tons; load draft, 19½ ft. The vessel is being built to Lloyd's highest class and is of the ocean going type, with raised forecastle, bridge, and poop decks, the propelling machinery being placed amidships. The deckhouse containing the officers' quarters is located on the bridge deck, accommodation being provided for the chief officer, second and third mates, chief engineer and assistants, wireless operators and steward. The saloon, dining room, pantry, storeroom, galley and other offices are also contained in this house. Above these quarters are the captain's cabin and chart room, which are surmounted, in turn, by the pilot house and the navigating bridge. The layout of accommodations under the poop deck provide for 6 seamen, 6 firemen, cook and assistant, 2 mess rooms, wash room and shower, while the boatswain and the donkeyman are located in the forecastle, as is also the hospital. Coal bunkers are fitted alongside the engines and boilers, with coal chute above, and 3 coaling hatches each side on main deck; the space in 'tween decks can also be utilized for bunker coal.

A complete double bottom of the cellular type 42 in. deep runs for the entire length of the ship, constructed with solid floors on every frame and one longitud-



Wooden cargo steamship War Erie, for British Government, in Fraser, Brace & Co.'s basin, Montreal.

British Government, under the supervision of J. S. Bonnyman, representing the British Ministry of Shipping. She is a sister vessel of the s.s. War Earl, launched June 8, and described and illustrated in our last issue.

**J. Coughlan & Sons, Vancouver, B.C.**—The s.s. Alaska, which has been completed at this firm's yard recently for the British Government, was originally intended for Norwegian registry, but was taken over by the Imperial Munitions Board, when on the stocks. The hull is of steel, with double bottom, 5 water tight bulkheads, with poop, long bridge and forecastle. The officers' cabins are in the deck house on the bridge, and the crew's quarters are in the poop. She is equipped with Fletcher turbines with reduction gear, and 3 single ended Scotch boilers, equipped for oil fuel, and also for coal. There are two steel masts, with topmasts made to telescope for passing under bridges on the Manchester (Eng.) Ship Canal; 3 derricks of 5 tons capacity, 2 of 3 tons and 1 of 30 tons capacity. The chief dimensions of the vessel are: length over all 427 ft., length on water line 410 ft., beam 54 ft., depth 29¾ ft., draft loaded 24 ft. 2½ in.; deadweight tonnage 8,800, gross tonnage 5,825, net tonnage 4,201; speed on trial 12.65 knots in light condition; shaft horse power 2,500; revolutions on trial 107 per min.

Work is proceeding rapidly on the re-erection of the portions of the plant which were destroyed by fire recently. The damage was confined to the boiler shop and slips 3 and 4. The company has an order for 9 steel steamships of 8,800 tons each, from the Imperial Munitions Board, for the British Government. One of these, War Camp, was launched Mar. 16. Two others, War Charger and War Chariot, were on the ways at the time of the fire, and were considerably damaged, the lat-

July 4, and named War Erie and War Huron. Instead of being launched in the usual manner, water was let into the company's basin where the vessels were erected, and they were floated out. The third was expected to be launched during July, and the fourth during August. The two latter will be named War Niagara and War Ottawa.



Wooden cargo steamship War Huron, for British Government, in Fraser, Brace & Co.'s Basin, Montreal.

**Grant & Horne, Ltd., St. John, N.B.**—It was expected that the wooden steamship hull under construction by this company, under order of the Imperial Munitions Board, for the British Government, would be launched about July 26, and it was stated that she would be named War Fundy.

**Wm. Lyall Shipbuilding Co., Vancouver, B.C.**, launched its fifth vessel for the Imperial Munitions Board, June 26, it being named War Nicola, by Mrs. A. B. Taylor, wife of the company's chief accountant. The sixth vessel was expected to be ready for launching during July, and it was stated that it would be named

inal girder on each side of the center line. Four water tight bulkheads, all extending to the main deck, divide the peaks and machinery space from the 2 cargo holds. There are 4 main cargo hatches. Two 26 x 18 ft., one 22 x 18 ft., and one 18 ft. square. The hatch coamings are 42 in. high, with extra stiffening to withstand heavy weather; the web beams are spaced about 4½ ft. apart, and fitted thwartship with fore and aft hatch covers. In common with the arrangements for loading and discharging cargo, the whole of the working gear is of the most modern type. Four steel hinged derrick posts 30 ft. high are provided, each with 2 cargo



booms, having a lifting capacity of 4 tons to each boom.

Eight 7 x 10 in. steam winches of the latest type are supplied. The steering engine is located on the main deck of the aft end of bridge erection, and is of the usual type for ocean freighters; the control shafting being run alongside the casing top on boat deck to the engine, with rods and chain to the quadrant. The steering engine is supplied from Scotland. There are 2 metallic lifeboats 24 x 7 ft. and 9 x 3 ft. 3 in. deep, each boat being capable of accommodating the entire crew; one 16 ft. working boat is also provided for. The propelling machinery consists of triple expansion engines, with cylinders 20½ x 33 x 54 x 40 in. stroke, steam being supplied by 2 single-ended Scotch boilers 15¾ ft. diameter by 11 ft. long, both engines and boilers being built by John Inglis & Co., Toronto. The vessel will be fitted out in accordance with the latest Board of Trade requirements, and during construction is under the personal supervision of Capt. E. E. Tedford, representing the British Government.

Port Arthur Shipbuilding Co., Port Arthur, Ont., on July 20 launched its steamship 21, War Hathor, a steel cargo vessel, for the British Government, almost

ate room is provided for each officer on the bridge deck amidships. She was completed and ready for sea early in July.

The Pacific Construction Co., Port Coquitlam, B.C., which received an order from the Imperial Munitions Board for 2 wooden steamship hulls, intended, in addition to its wooden shipbuilding yard, to establish berths for the building of steel steamships. We are advised that several contracts were offered for building steel steamships for the French and Norwegian Governments at satisfactory prices. Before these can be accepted, it is necessary to obtain permission from the Dominion Government, which takes the position that it is inadvisable at present to start a new steel shipbuilding yard, as it is considered that the labor and materials available are only sufficient to keep present yards employed. The company is said to be satisfied that it can obtain the necessary labor and materials, but, of necessity, accepts the Government's decision.

The hull of the s.s. War Sumas, the second built by this company for the Imperial Munitions Board, was launched July 12. This completes the order for wooden vessels for the British Government placed with the company.

Quebec Shipbuilding & Repairing Co.,

stalled at the Louise dock tidal basin, and it is expected that the former will be ready for her trial trip about Aug. 15, and the latter about the end of September.

Wallace Shipyards, Ltd., North Vancouver, B.C.—The Dominion Public Works Department's steam tugs Point Ellice and Point Grey, which, as reported in our last issue, have been leased to the Imperial Munitions Board in connection with the transportations of spruce for airplane manufacture, from the Queen Charlotte Islands, are being lengthened at this company's yards. The Point Ellice is to be lengthened 15¾ ft., and the Point Grey 17½ ft. Both vessels use oil fuel and the extra space is to enable them to carry sufficient oil for longer cruises than undertaken heretofore.

Western Canada Shipyards, Ltd., Vancouver.—The s.s. War Nootka, which was launched by Western Canada Shipyards, Ltd., Jan. 4, underwent her trials at the end of June, over a measured course in Parry Bay out of Victoria.

Additional Orders.—There have been persistent rumors recently that the Imperial Munitions Board is about to place additional orders for steel steamships for the British Government, but up to the time of going to press no official information is available.

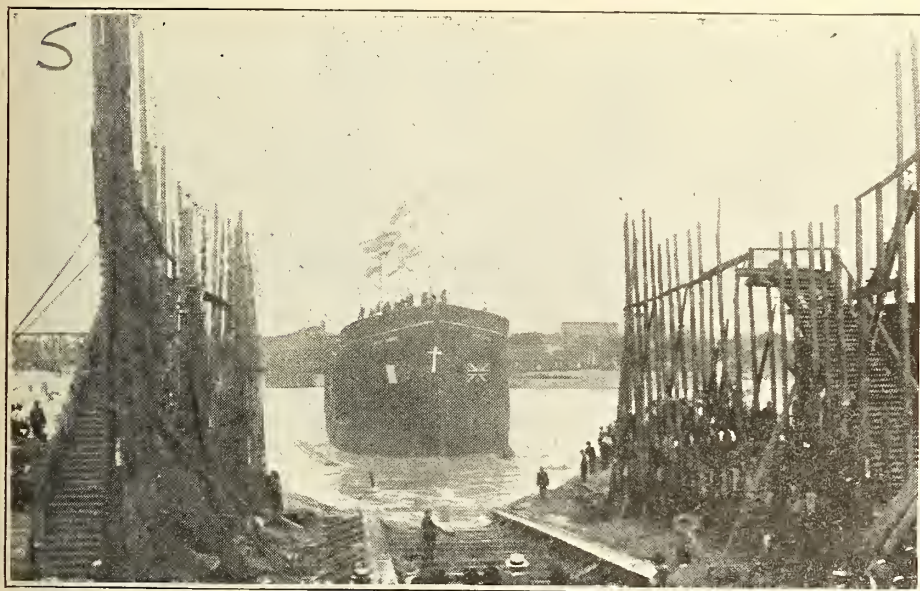
Launchings of Steamships.—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to July 16, giving in each case the date of the launching, the name of the steamship, the name of the builder and the deadweight tonnage:—

#### Steel Steamships.

	Tonnage.
May 18, 1917—War Dog, Wallace Shipyards North Vancouver, B.C. ....	4,500
July 9, 1917—War Wasp, Nova Scotia Steel & Coal Co., New Glasgow, N. S. ....	1,800
Aug. 19, 1917—War Fish, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	4,300
Nov. 3, 1918—War Dance, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
Mar. 16, 1918—War Camp, J. Coughlan & Sons, Vancouver, B.C. ....	8,800
Mar. 23, 1918—War Power, Wallace Shipyards, North Vancouver, B.C. ....	4,600
Apr. 3, 1918—War Isis, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
May 8, 1918—War Wizard, Collingwood Shipbuilding Co., Collingwood, Ont. ....	2,900
May 21, 1918—War Bee, Nova Scotia Steel & Coal Co., New Glasgow, N.S. ....	2,400
May 27, 1918—War Osiris, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
June 8, 1918—War Earl, Canadian Vickers Ltd., Montreal ....	7,000
June 29, 1918—War Duchess, Canadian Vickers Ltd., Montreal ....	7,000
Total 12 steel steamships .....	53,500

#### Wooden Steamships.

Dec. 28, 1917—War Songhee, Foundation Co., Victoria, B.C. ....	3,080
Jan. 4, 1918—War Nootka, Western Canada Shipyards, Vancouver, B.C. ....	3,080
Jan. 24, 1918—War Yukon, Cameron-Genoa Mills, Victoria, B.C. ....	3,080
Feb. 16, 1918—War Puget, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080
Mar. 6, 1918—War Selkirk, Western Canada Shipyards, Vancouver, B.C. ....	3,080
Apr. 10, 1918—War Caribou, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080
Apr. 11, 1918—War Comox, New Westminster Construction & Engineering Co., New Westminster, B.C. ....	3,080
Apr. 11, 1918—War Massett, Foundation Co., Victoria, B.C. ....	3,080
Apr. 13, 1918—War Tyee, Pacific Construction Co., Coquitlam, B.C. ....	3,080
Apr. 25, 1918—War Haida, Cameron-Genoa Mills, Victoria, B.C. ....	3,080
Apr. 27, 1918—War Cayuse, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080
May 11, 1918—War Mohawk, Quinlan & Robertson, Ltd., Quebec, Que. ....	3,080
May 11, 1918—War Sioux, Port Arthur Dredging Co., Port Arthur, Ont. ....	3,080
May 21, 1918—War Atlin, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080



Launching of wooden cargo steamship War Quebec, for British Government, by Quebec Shipbuilding & Repair Co. at Quebec, Que.

identical with the War Isis, which was described and illustrated in Canadian Railway and Marine World for June, pg. 274. The War Hathor was christened by Miss Hazel Whalen, daughter of the company's President, Jas. Whalen.

Nova Scotia Steel & Coal Co., New Glasgow, N.S.—The s.s. War Bee, the launching of which on May 20, is illustrated in this issue, is the second steel steamship built, under order from the Imperial Munitions Board, for the British Government. She has the following principal dimensions: length 248¾ ft., breadth 35 ft., depth 20 ft., and will carry a cargo of about 2,400 tons deadweight. She is equipped with triple expansion engines, with cylinders 17, 28 and 46 in. diam. by 33 in. stroke, built entirely by the company, with air, feed and bilge pumps directly connected. Steam is supplied by two boilers 11½ ft. diam. by 11 ft. long at 185 lb. working pressure under natural draft. Other equipment includes complete cargo discharging gear, folding masts, four large hatches, complete electric lighting plant, etc. A separ-

Quebec, Que.—The hull of the first of the two wooden steamships under order from the Imperial Munitions Board, was launched June 28, and christened War Quebec, by Mrs. D. McLaughlin, wife of the Superintendent of the yard. The hull was subsequently towed to the deep water pier of the Louise docks, where the machinery is being installed.

Propelling machinery for the War Quebec has been somewhat delayed, but work is proceeding on the installation of the piping.

Quinlan & Robertson, Ltd., Limouilou, Que.—The keel of the fourth vessel to be built under the Imperial Munitions Board's order, was laid May 13, and construction is proceeding satisfactorily. Two vessels have been launched, the War Mohawk on May 11, and the War Seneca on June 13, not June 14, as mentioned in the news item in our last issue. The third vessel was expected to be launched July 25, and the fourth about Sept. 1.

The vessels War Mohawk and War Seneca, launched May 11 and June 13, respectively, are having machinery in-



May 23, 1918	War Tatla, Western Canada Shipyards, Ltd., Vancouver, B.C. ....	3,080
June 12, 1918	War Skeena, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. ....	3,080
June 13, 1918	War Seneca, Quinlan & Robertson, Quebec, Que. ....	3,080
June 14, 1918	War Edensaw, New Westminster Construction & Engineering Co., B.C. ....	3,080

June 15, 1918	War Babine, Foundation Co., Co., Victoria, B.C. ....	3,080
June 24, 1918	War Nicola, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080
June 28, 1918	War Quebec, Quebec Shipbuilding & Repairing Co., Quebec, Que. ....	3,080
June 29, 1918	War Ontario, Toronto Shipbuilding Co., Toronto ..... 3,080	
July 5, 1918	War Huron, Fraser, Brace & Co., Montreal ..... 3,080	

July 5, 1918	War Erie, Fraser, Brace & Co., Montreal ..... 3,080	
July 6, 1918	War Casco, Western Canada Shipyards, Ltd., Vancouver, B.C. ....	3,080
July 12, 1918	War Sumas, Pacific Construction Co., Port Coquitlam, B.C. ....	3,080
Total, 26 wooden steamships .....		80,680
Total deadweight tonnage, 12 steel and 26 wooden steamships launched, 133,580.		

## General Shipbuilding Notes Throughout Canada.

**Cape Breton Shipbuilding Co.,** Johnstown, N.S.—It is reported that a site has been acquired and contract let to R. Musgrave, for the construction of the yards. F. L. Kelly is President, N. A. McMillan, K.C., Secretary, and Wm. Hackett, Treasurer.

**Dartmouth, N.S.**—A London, Eng., press cablegram stated recently that Sir Wm. Beardmore, of Wm. Beardmore & Co., Ltd., shipbuilders, Glasgow, Scotland, had conferred there with the Canadian Premier, respecting the establishment of a shipbuilding plant at Dartmouth, and that the matter would be taken up further on the arrival of the Minister of Marine, Mr. Ballantyne, in England.

Another cablegram of July 11 said that Sir Robert Borden had discussed with the Minister of Marine, Mr. Ballantyne, the development of the shipbuilding industry in Canada.

**The Dominion Shipbuilding Co., Ltd.,** has been incorporated under the Dominion Companies Act, with an authorized capital of \$3,000,000, and office at Toronto, to build, own, operate and deal in vessels of any class, and to carry on a general shipbuilding and ship owning business. Power is also obtained to purchase the assets of any company at present carrying on a shipbuilding or engineering business, and to pay for same either in cash or shares, and also to build for its own use, or for hiring out, graving and other docks, for the convenience of building, repairing and docking vessels.

An Ontario charter was obtained under this name by the same interests in Nov., 1917, and the work of laying out the plant was proceeded with. The site was provided by the Toronto Harbor Commission on reclaimed land situated due south of the Thor Iron Works, near the foot of Bathurst St., Toronto. The land extends from the foot of Spadina Ave., westerly for 1,386 ft., and covers 15.2 acres. The Toronto Harbor Commission was responsible for the engineering work connected with the preparation of the site, and for the construction and equipment of the plant. The interests concerned with the Dominion Shipbuilding Co., control, and own practically the whole of the stock of the Thor Iron Works, Ltd., and it is understood that that property will be absorbed by the new incorporation. L. Dahlgren, President and General Manager, Thor Iron Works, Ltd., is Vice President and General Manager, Dominion Shipbuilding Co.

**H. A. Ellis, Barachois, Que.,** launched the schooner *Gaspe Trader* towards the end of June. She is 120 ft. long over all, 29 ft. beam, and 10 ft. depth of hold, and of 300 tons register. She will have 2 masts, ketch rigged, and will be equipped with Fairbanks-Morse crude oil engines of 75 h.p. each, driving twin screws. Her other equipment includes a patent steering gear and gasoline engine for hoisting sails, anchor, etc., and there will be a complete electric lighting plant. She is intended for service between Montreal,

Gaspe ports and Newfoundland, and is expected to be on her route early in August.

**Harrison & Lamond Shipbuilders, Ltd.,** Vancouver, B.C., is reported to be proceeding with the building of a wooden schooner with auxiliary power, 2,550 tons capacity, and of the following dimensions: length 225 ft., breadth 44 ft., depth 21¼ ft., 1,600 tons gross. This firm had a contract from the Dominion Government last year for building such a vessel, at an approximate cost of \$230,000, for operation between Canadian Atlantic and Pacific ports via the Panama Canal, details of which were given in Canadian Railway and Marine World for Oct., 1917, but, owing to difficulty in obtaining the requisite material within the contract

**Melanson Bros.,** Gilberts Cove, N.S., have laid the keel for a three masted schooner of about 200 tons register.

**S. A. Moulton, Prince Rupert, B.C.,** is reported to have an order for the construction of 10 composite boats.

**Port Arthur Shipbuilding Co.,** Port Arthur, Ont., has completed two trawlers for the Naval Service Department, which have already sailed. They are of the Castle class type, with the following general dimensions:—length, 125 ft.; beam, 23 ft. 4 in.; moulded depth, 13½ ft.; net tonnage, 116.3; gross tonnage, 294.5. They have one single end Scotch boiler and one triple expansion engine, developing 500 i.h.p. The company has completed four trawlers altogether this year and has six others to build, two of which



Two trawlers for Naval Service Department, just prior to launching by Port Arthur Shipbuilding Co.

time, declined to proceed except on a cost plus 10% basis. The contract was eventually cancelled.

**Kingston Shipbuilding Co.,** Kingston, Ont.—The third trawler built by this company for the Dominion Department of Naval Service, was launched July 6.

**Wm. Lyall Shipbuilding Co.,** North Vancouver, B.C.—A press report from Vancouver, July 15, stated that Montreal interests had placed a contract with the company for the construction of 24 wooden steamships. These vessels, it is said, will be of a slightly larger type than those now being built, being of 3,500 tons.

The company is building on its own account, 6 auxiliary powered schooners, which will be rigged with topsails, and three of them will be equipped with twin Atlas full Diesel engines, the other three having twin Fairbanks-Morse semi-Diesel engines. The vessels will be 235 ft. long at the water line, 44½ ft. beam and 20½ ft. moulded depth, with approximately 2,500 tons deadweight capacity.

**Marine Construction Co. of Canada, Ltd.,** St. John, N.B., is reported to have laid the keel of a double deck steamship, about 200 ft. long over all.

**McLennan Foundry & Machine Works, Ltd.,** is reported to be arranging to establish a shipbuilding plant on the Restigouche River at Duncans Point, N.B.

were expected to be launched before the end of July.

**Prince Rupert, B.C.**—W. P. Hinton, Vice President and General Manager, Grand Trunk Pacific Ry., Winnipeg, is reported to have announced that a contract has been closed for building five steel steamships at the Grand Trunk Pacific Ry.'s dry dock and shipbuilding plant at Prince Rupert, and that there is another order in prospect for five more. These will probably be of about 8,500 tons each. Negotiations have been proceeding for some time for leasing the plant to some U.S. interests, who are desirous of building steel vessels at Prince Rupert, but up to the time of writing, we have not been advised that the matter has been definitely closed.

**T. Rawding, Allendale, N.S.,** has laid the keel for a 250 ton three masted schooner, and expects to begin work shortly on another schooner of 175 tons. The master builder in charge is R. McLeod, formerly of the Tusket Wedge Shipbuilding Co.

**Shelburne Shipbuilders, Ltd.,** Shelburne, N.S., are building a tern schooner 136 ft. long, and one of 150 ft. The first is expected to be launched in September and the second in November.

**Songhees Reserve, Victoria, B.C.**—It is reported that negotiations have been com-



pleted for laying down a new shipyard in Victoria, for the construction of wooden vessels for Norwegian interests. A site is said to have been leased at West Bay on the old Songhees reserve, that a contract has been made for the construction of the vessels, and that keels will be laid shortly. Chris. Cholberg is mentioned as being in Victoria, as representative of the interests concerned. The contract mentioned is stated to be for three wooden sailing schooners about 1,400 tons each and 200 ft. long, for operation in the Norwegian trade.

**Standard Shipbuilding Co.,** Vancouver, B.C.—In addition to the 6 wooden steamships of the Donahoe type, with steel keelsons, 3,500 tons deadweight capacity, under order for French interests, as mentioned in our last issue, it is reported that the company has received an order from the Brazilian Government for 2 similar vessels.

**St. John Shipbuilding Co.,** St. John, N. B.—Orders are reported to be in hand for 10 five masted auxiliary powered schooners. As mentioned in our last issue, the company plans to establish a steel and wood shipbuilding plant at Courtenay Bay, St. John, but apart from local reports that these plans are being pushed ahead, there is nothing to indicate any active construction. The promoter states that the work to be undertaken by the St. John Dry Dock & Shipbuilding Co., which has taken over the balance of the Norton Griffiths Construction Co.'s contract from the Dominion Government, will not interfere with his company's plans. The directors of the company, as given in Canadian Railway and Marine World for Sept., 1917, are: J. W. Norcross, R. M. Wolvin, Montreal; Senator W. C. Edwards, Ottawa; M. J. Haney, Toronto; Angus Mclean, Bathurst, N.S.; R. O'Leary, Richibucto, N.S.; T. Bell and T. Nagle, St. John, N.S. Several of these are interested in Halifax Shipyards, Limited, which has been organized recently.

**Tidewater Shipbuilders, Ltd.,** Three Rivers, Que.—It was expected that a steel steamship with wooden bottom would be launched before the end of July, at this yard, for Canada Steamship Lines, Ltd. She is 240 ft. long, 40 ft. beam and 15½ ft. moulded depth, with a displacement of about 3,000 tons. She is equipped with twin engines and 13 ft. Scotch boiler. She has been named T. P. Phelan after one of the C. S. L. directors.

**Victoria Shipbuilding Co.,** Victoria, B.C., is reported to be building wooden cargo steamships for the British Government. All orders for steamships to be built in Canada for the British Government have been placed by the Imperial Munitions Board, and a complete list of these orders was published in Canadian Railway and Marine World for March. At that time no order for vessels had been placed with the company, by the Imperial Munitions Board, and it is a well known fact that the British Government decided not to place any further orders for wooden steamships, prior to the date the list mentioned was published. The Victoria Shipbuilding Co. was organized in the early part of the year, J. H. Price, President, Cameron-Genoa Mills Shipbuilders, Ltd., being chiefly interested, and it was reported that arrangements had been practically completed for building 20 wooden vessels for the British Government, and that plans had been submitted direct to the British Controller of Shipping. Similar negotiations were undertaken some time ago by another firm, and in commenting on them in March, we stated that we were unable to obtain any verification of the reports, but from the

best information available, thought it unlikely that the British Government would place any further orders for wooden steamships, though there were possibilities of orders from allied or neutral countries. So far as our information goes, no change has taken place in the situation regarding this matter.

### The Canadian Northern Car Ferry Canora's Voyage to British Columbia.

J. D. Macpherson, Wreck Commissioner for British Columbia, Victoria, B.C., wrote recently, as follows: "I note with interest in Canadian Railway and Marine World for July, an account of the C.N.R. car ferry Canora, and the route she is to follow from Quebec to Vancouver, though why she is to call at Port Townsend, Wash., I am at a loss to imagine, for not only will she have to clear at the quarantine station at Williams Head, off Victoria, but she will, I presume, have also to touch here for a pilot.

"Further, the distance from Port Townsend to Vancouver is 89 miles (not as you have it, 80 miles), making a total distance from San Francisco to Vancouver via Port Townsend of 859 miles, whereas the distance from San Francisco to Vancouver via Victoria is 817 miles, a saving of 42 miles, thus:

"San Francisco to Port Townsend.....	770 miles
"Port Townsend to Vancouver .....	89 miles
	859 miles
"San Francisco to Victoria .....	744 miles
"Victoria to Vancouver .....	73 miles
	817 miles"

Mr. Macpherson's letter was referred to Capt. Norman McKay, of the Canora, who replied as follows:—"The chart from which I figured the approximate sailing distance on the proposed voyage of the Canora to Vancouver was a very general one. In fact there was no distance shown from Port Townsend to Vancouver, hence my guess that it was about 80 miles. The reason that Port Townsend was listed as a point of departure was merely that it was indicated on this chart, with the mileage shown from San Francisco to that point, whereas as above stated, there was no mileage indicated inward, either

from Port Townsend or Victoria to Vancouver. There would be no good reason for the ship calling at Port Townsend unless in distress."

### Newfoundland Shipping Department.

Reference has been made in previous issues to the formation of a Shipping Department by the Newfoundland Government. Following is a summary of the act creating the department and defining the duties of the Minister, which details have only come to hand recently. There shall be a department called the Department of Shipping, over which the Minister of Shipping shall preside, and he shall have the management and direction of the department, holding office during pleasure. A Shipping Board shall be formed, of which the Minister of Shipping, ex officio, shall be chairman, and not less than two other members, appointed by the Governor in council, holding office during pleasure, the board's powers and duties being to confer with and advise the Minister of Shipping on matters over which the department has control. The department shall have control and regulation of all shipping available for the country's needs, and shall regulate the movement and employment of that shipping so as to make the best use of it having regard to the circumstances, with power to take steps for providing and maintaining an efficient supply of shipping. The appointment of the present Minister of Shipping, Hon. J. C. Crosbie, and all things done by him as such Minister have been ratified by the act.

**Inverness Harbor, N.S.**—The improvements contemplated in Inverness harbor, tenders for which were received July 5, cover the dredging of a channel 30 ft. wide at the bottom, and to a depth of 6 ft. below low water spring tides, from the Gulf of St. Lawrence to McIsaacs Pond; the extension of the existing western and eastern breakwaters; the repairing of the existing western breakwater, and the raising of the top of the eastern breakwater to the level of the new works, and providing that the top of the covering of the extensions shall be 5 ft. above high water and 9 ft. above low water spring tides.

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie canals during June, 1918.

		Eastbound		
ARTICLES.		Can. Canal.	U.S. Canal	Total.
Lumber .....	m. ft. b. m.	2,795	49,335	52,130
Flour .....	Barrels	455,600	831,060	1,286,660
Wheat .....	Bushels	1,686,300	2,347,031	4,033,331
Grain, other than wheat .....	Bushels	529,002	208,500	737,502
Copper .....	Short tons	3,535	7,927	11,462
Iron Ore .....	Short tons	1,512,671	8,364,242	9,876,913
Pig Iron .....	Short tons	.....	.....	.....
Stone .....	Tons	2,400	.....	2,400
General Merchandise .....	Short tons	3,637	1,625	1,828
Passengers .....	Number	1,339	489	1,828
		Westbound.		
Coal, soft .....	Short tons	122,810	1,526,218	1,649,028
Coal, hard .....	Short tons	8,000	260,947	268,947
Iron Ore .....	Short tons	.....	11,961	11,961
Mfgd. iron and steel .....	Tons	1,200	1,934	3,134
Salt .....	Barrels	4,605	8,150	12,755
Oil .....	Tons	2,780	45,974	48,754
Stone .....	Short tons	6,832	98,869	105,701
General Merchandise .....	Short tons	33,217	34,049	1,700
Passengers .....	Number	1,594	106	1,700
		Summary.		
Vessel passages .....	Number	733	2,345	3,078
Registered Tonnage .....	Net	1,492,234	1,998,167	9,490,401
Freight—				
Eastbound .....	Short tons	1,637,307	8,617,166	10,254,473
Westbound .....	Short tons	179,444	1,988,102	2,167,546
Total Freight .....	Short tons	1,816,751	10,605,268	12,422,019



## Cargo Steamship Building for Dominion Government.

**Orders for Steamships.**—Since Canadian Railway and Marine World for July was issued, the Marine Department has ordered from the Port Arthur Shipbuilding Co. 2 steel cargo steamships of about 3,400 tons d.w. capacity. The department has also agreed to give Halifax Shipbuilders, Ltd., an order for 3 steel cargo steamships of approximately 10,000 tons d.w. capacity each, when its yard at Halifax, N.S., is ready to begin building. This makes the orders given and promised up to date as follows:—

Canadian Vickers, Ltd., Montreal—1 of 4,300 tons, and 1 of 8,100 tons.

Collingwood Shipbuilding Co., Collingwood, Ont.—2 of 3,750 tons each.

Halifax Shipbuilders, Ltd., Halifax, N.S.—Order promised for 3 of approximately 10,000 tons each.

Tidewater Shipbuilders, Ltd., Three Rivers, Que.—2 of 5,100 tons each.

Wallace Shipyards, Ltd., North Vancouver, B.C.—2 of 4,300 tons each, and provisional arrangements for 4 of 5,100 tons each.

Other orders will be placed, as berths may be becoming vacant, with the shipbuilders mentioned in Canadian Railway and Marine World for March and April, and if the St. John Drydock & Shipbuilding Co. goes on with its proposed shipbuilding plant at St. John, N.B., it will also probably be given some orders.

Thos. Nagle, of the St. John Shipbuilding Co., St. John, N.B., is reported to have stated there recently that that company has been given an order to build 3 steamships for the Dominion Government. We were officially advised by the Marine Department recently that no such order had been given by that department, which has charge of all the cargo steamship building for the Dominion Government.

**The 4,300 Ton Type of Steamship.**—Following is a description of the 4,300-ton type of steel cargo steamships for the Dominion Government, which are to be built under the Minister of Marine's shipbuilding programme, as first detailed in Canadian Railway and Marine World for February, and additional particulars in regard to which have been given in each subsequent issue. As previously stated in these columns, three steamships of this type have been ordered, one from Canadian Vickers, Ltd., Montreal, and two from Wallace Shipyards, Limited, North Vancouver, B.C. Other orders for similar steamships will be placed as suitable berths become available at various shipbuilding yards. Canadian Vickers, Limited, laid the keel on April 12 for the one ordered from them. The following are the principal dimensions, etc., of these vessels:—

Length . . . . .	320 ft.
Breadth . . . . .	44 ft.
Depth . . . . .	25 ft.
Draft, loaded . . . . .	21 ft. 2 in.
Speed, maximum . . . . .	11½ knots
Permanent bunkers . . . . .	670 tons
Water ballast capacity . . . . .	630 tons
Complement, officers and men, including gunners . . . . .	35

The vessels will be of the single deck type, with poop, bridge and forecastle, straight stem, elliptical stern and subdivided into 13 watertight compartments. A double bottom 42 in. deep, with solid floors on every frame, will be fitted from the collision bulkhead to the after peak bulkhead, connected up in the usual way with the steam suction. The vessel will be built on the ordinary transverse system, the frames being of bulb angle spaced 24 in. apart, ample compensation being provided to the shell plating in lieu of side stringers. The main deck, poop,

bridge and forecastle decks will be of steel sheathed with B.C. fir in way of the accommodation.

The cargo hatches will be arranged for the speedy handling of bulk cargoes and will have the following dimensions:—No. 1, 22 ft. x 22 ft.; no. 2, 26 ft. x 22 ft.; no. 3, 12 ft. x 18 ft.; no. 4, 26 ft. x 22 ft.; no. 5, 26 ft. x 22 ft.

The usual stanchion arrangement in the holds will be dispensed with, in order to facilitate loading and unloading. The holds will be of the following capacities in cubic feet:—No. 1, 48,300; no. 2, 78,200; no. 3, 86,800; no. 4, bridge erection, 13,060.

In accordance with what is now recognized practice in modern cargo vessels, the seamen and firemen will be housed under the poop deck aft, in large compartments, each accommodating 2 men. Separate mess rooms will be provided for the seamen and firemen, and all other requirements, such as lighting, ventilation and sanitation will be in conformity with the Board of Trade regulations governing the survey of masters and crew spaces. The ship's officers, etc., will be berthed in an island deck house, at the fore end of the bridge deck, which will contain one cabin for each officer, wireless office, dining saloon, pantry, baths, lavatories, and the usual stores. An internal stairway will lead to the captain's quarters and chart room on the upper bridge, which will be surmounted by the flying bridge and navigating positions. The engineers, petty officers, mess rooms, baths and lavatories will be located in side houses abreast the engine casing near the aft end of the bridge deck. All the accommodation throughout will be steam heated.

Each vessel will be provided with 6 derrick posts, and 1 pole mast, carrying wireless aerials. Each derrick post will have 2 derricks fitted, capable of lifting 5 tons each. The 11 cargo winches will be 7 x 12 in., of the Clarke-Chapman type, manufactured by Canadian Vickers, Limited. The windlass, which will be placed on the forecastle head, will also be of the Clarke-Chapman type, and manufactured by the builders. The steering gear will be at the after end of the engine room casing, inside the bridge erection. The engine will be of the ordinary Hastie horizontal type with cylinders 9 in. diameter by 9 in. stroke and will be manufactured by Canadian Vickers, Limited.

A 10 k.w. electric generating set will be placed in the engine room. The dynamo will be built by Vickers, Limited, Sheffield, Eng., and will be coupled to a single cylinder enclosed forced lubricating engine, manufactured by the Goldie & McCulloch Co., Galt, Ont.

The life saving appliances will be in accordance with the requirements of the Canadian Board of Steamship Inspection and will comprise: 2 lifeboats, 22 x 6½ x 2¾ ft.; 1 lifeboat, 20 x 6½ x 2½ ft., and 1 dinghy, 20 x 5½ x 2 ft. 4 in. Each vessel will be fitted with the usual armament as required by law and provision will be made for defence from floating mines.

The propelling machinery will be of the triple expansion surface condensing type, having cylinders 25 x 41 x 67 x 45 in. stroke. It is being built on separate contract by the Goldie & McCulloch Co. The air, feed and bilge pumps will be worked off the main engine. The main circulating pump will be of the centrifugal type driven by an enclosed forced lubrication engine, manufactured by Goldie & McCulloch Co. The general service pump and

auxiliary feed pump will be 9½ x 7 x 15 in. of G. & J. Weir's make, and the ballast pump will be of the vertical duplex type, 7½ x 9 x 10 in. The reversing engine will be of the all round type.

Steam will be generated in 2 single ended boilers 15½ ft. diameter by 11½ ft. long, designed to work under forced draft and with a working pressure of 180 lb. per sq. in.

The vessels will be built to Lloyd's 100 A1 class, under special survey, and under the direct supervision of the Marine Department's shipbuilding branch. Satisfactory progress is being made with the work of construction in both hull and machinery departments and it is anticipated that the first vessel under the government's shipbuilding programme will be placed in service well under the contract date.

Grant Smith & Co., Vancouver, B.C., is reported to have received an order from the Dominion Government for 6 wooden cargo vessels of 3,000 tons capacity, and of the following dimensions:—length 250 ft., breadth 43½ ft., depth 25 ft., with engine equipment for a speed of 9½ knots an hour. Canadian Railway and Marine World for July contained, on page 316, information of the orders placed for steamships by the Dominion Government, covering all the orders placed by the government for cargo steamships, up to June 20. As previously pointed out, the Dominion Government has decided not to place any orders for wooden steamships, and so far as we are at present advised, has not placed any orders for cargo vessels, other than those mentioned on this page. During 1917, the Dominion Government awarded contracts for the construction of wooden schooners with auxiliary power, but on the ground that the Imperial Munitions Board had practically cornered the supply of ship timbers, the contractors declined to proceed, except on the cost and percentage basis. The government then cancelled the contracts.

Wallace Shipyards, Ltd., North Vancouver, B.C., which has built 2 steel cargo steamships for the British Government, under order from the Imperial Munitions Board, has orders for 2 steel cargo steamships, 4,300 tons deadweight capacity, for the Dominion Government, and provisional arrangements have been made by the government for the construction of 4 additional steel steamships of 5,100 tons deadweight capacity. The company is also reported to be building 2 wooden schooners with auxiliary power, 2,500 tons capacity, for the Dominion Government, and 4 wooden cargo steamships totalling 17,500 tons for undisclosed interests. Elsewhere we have mentioned that up to June 20, subsequent to the date of the report, the Dominion Government had placed no orders for wooden vessels. A schooner of this type was ordered last year by the government, and the contract was subsequently cancelled.

The Canadian Merchant Service Guild's members have, according to a press dispatch from Vancouver, decided to resign from the service of steamship companies which refuse to recognize the guild, the dispatch stating that, as a result, steamships of the C.P.R., the Union Steamship Co. and the British Columbia Towboat Owners' Association will be without masters and officers. On application from the men, a conciliation board has been appointed to deal with the matter.



# St. John, N.B. Harbor Work, Drydock and Shipbuilding Plant.

Canadian Railway and Marine World for June and July contained particulars of the St. John Drydock & Shipbuilding Co.'s plans for establishing a drydock and shipbuilding plant at St. John, N.B., and in connection therewith to do certain harbor improvements. We have since been favored with copies of the orders in council passed by the Dominion Government in connection therewith. The first order, passed May 18, was not satisfactory to the company, and another order was passed June 10, cancelling the previous order. The Minister of Public Works' report, dated May 31, on which the second order in council was based, is as follows:

As authorized by an order in council dated Feb. 12, 1912, a contract was entered into on Mar. 25, 1912, with Norton Griffiths & Co. (Canada) for the construction of certain works, at an approximate cost, according to the schedule rates, of \$7,500,000, required to provide at the important port of St. John, N.B., adequate shipping facilities to meet the requirements of Canada's increasing trade, and particularly to create terminal facilities for the Intercolonial, the Grand Trunk Pacific, the National Transcontinental, and other projected railways, such as the St. John Valley Ry. The following works were comprised in the contract. The construction of a breakwater 4,570 ft. long, including 5 groynes, each 150 ft. long. The dredging of a channel about 6,800 ft. long, 500 ft. wide at bottom and to a depth of 32 ft. below low water; the dredging of a basin to a depth of 32 ft. below low water in Courtenay Bay; the construction of 4,890 lin. ft. (more or less) of quay walls; the filling of the whole of the area shown in red on plan, sheet I, approximately 28 acres; the construction of a drydock of the first class under the provisions of an Act to encourage the construction of drydocks statutes of 1910, chap. 17. That with regard to the drydock it was stipulated that the government would enter into an agreement with the company for the payment of a subsidy thereon.

The company proceeded to carry out the contract, but as time advanced it was seen that but comparatively little progress was being made with the works as a whole. The company was notified time and time again that it must see to the prosecution of the works with greater diligence, but the efforts of the Public Works Department in this direction were without result, and the company finally ceased operations. The following was the standing of the contract on May 31, 1918:

Amount of final estimate .....	\$3,913,802.07
Amount of extras on contract returned in final estimate .....	127,955.09
Total payable to contractors, thus far .....	3,913,802.07
Actually paid .....	3,910,048.78
Amount held against claims .....	3,753.29
Claims against contractors, on file ..	2,655.00
Amount of security deposit which was released under order in council of Aug. 8, 1917 .....	250,000.00

The Norton Griffiths Co. Ltd. (Canada) is in liquidation, and has assigned any rights which it may have under the contract mentioned to the St. John Dry Dock & Shipbuilding Co. Ltd., subject to the Minister of Public Works' approval. The Department of Justice has expressed the opinion that there can be no legal objection to the assignment of this contract to another contractor who will complete the works upon the terms stipulated. The St. John Drydock & Shipbuilding Co. Ltd. proposes to establish a shipbuilding plant at St. John, and has filed an application for a subsidy agreement for the construction of a drydock of the first class at St.

John. In an order in council passed May 18, 1918, which granted authority, as hereinafter quoted, it was stated that in order to afford access to the proposed drydock it would be necessary to complete the dredging of the basin in front of the dock site, to dredge a channel from the main channel to St. John harbor, to the said basin—it to be understood, however, that no submarine rock work was to be included in the excavation of this channel—and to protect the dredged channel by the extension of the existing breakwater for approximately 2,500 ft. It was also stated in the said order in council "that the present scheme may be summarized as hereunder, showing the probable cost thereof as estimated by the Chief Engineer of the Public Works Department, amounting approximately to \$1,962,265.52":—To extend the existing breakwater approximately 2,500 lin. ft., estimated cost \$1,030,369.60. To dredge a channel from the main channel to the St. John harbor, inside the breakwater, to the basin in front of the proposed drydock, it to be understood, however, that no submarine rock work is to be included in the excavation of this channel. Estimated cost \$746,296.00. To complete the dredging of the basin, estimated cost \$185,599.02.

The following authority was granted by the order in council of May 18, 1918, referred to: 1—To approve of the assignment of the contract of Norton Griffiths & Co. Ltd. (Canada)—in liquidation—for the construction of the works above mentioned, to the St. John Drydock & Shipbuilding Co. Ltd., subject, however, to the following conditions:—(a) That nothing in the agreement of assignment herein or in the approval by the government of this agreement shall be deemed to prejudice or affect any right, title or claim on the part of His Majesty accrued, accruing or provided for, under, or by reason of the contract of Mar. 25, 1912. (b) That the assignee shall covenant with the government that it will execute and perform all unfulfilled covenants, agreements or obligations which the contractors had made with the government under the contract of Mar. 25, 1912, subject to the provisos hereinafter contained. (c) That the assignee shall enter into an agreement to construct a drydock of the first class at St. John, N.B., under the provisions of an Act to encourage the construction of drydocks, 9-10 Edward VII, chap. 17 (1910), as amended by chap. 27, 1917.

2—To extend the existing breakwater, constructed under the above contract, by a length of 2,500 lin. ft.

3—To complete the dredging of the basin in front of the drydock site as well as the dredging of a channel from the main channel of St. John harbor inside the breakwater to the said basin.

The works described in paragraphs 2 and 3 above to be carried out under the terms, conditions and prices of the contract with Norton Griffiths & Co. Ltd. (Canada), as amended by the following provisos: (a) The works to be performed in accordance with the annexed layout plan; (b) with reference to the dredging of the channel from the main channel to St. John harbor inside the breakwater to the basin of the drydock site, no submarine rock work is to be included in the excavation of this channel; (c) no work to be performed beyond the amount of the parliamentary appropriation granted in any one fiscal year; (d) the time

for the carrying out of these works to extend over three years; (e) the St. John Dry Dock & Shipbuilding Co. Ltd. to deposit a cash security of \$125,000 as a guarantee for the proper carrying out of the said works.

The estimate of \$1,962,265.52 for the work described will have to be increased very materially for the following reasons:

Extension of existing breakwater. The quantities on which the estimate for this given in the order in council was based were taken from the contract plans prepared in 1911. A plan which has been made recently by the engineer in charge shows that the extension will have to be built in deeper water, hence the increase in the quantities.

Completion of dredging of basin and submarine rock in entrance leading to proposed drydock. It is proposed to increase the area of the basin as described in the order in council of May 18, 1918, so as to make it coincide with the area set forth in the plan attached to the original contract, with the exception, however, that the pier sites and slips as shown on the plan hereto annexed are not to be dredged and the piers are not to be constructed unless the company is specially called upon to do so by the department, and there will also be rock excavation leading to the drydock entrance.

Detailed estimate on which the order in council was based.

Core stone in breakwater, 333,333 cu. yds. at \$2.50 .....	\$ 833,332.00
Cover stone in breakwater, 51,852 cu. yd. at \$3.80 .....	197,037.60
	\$1,030,370.10
Dredging channel, 2,407,407 cu. yd. at 31c. ....	746,296.00
Dredging basin, 773,333 cu. yd. at 24c. ....	185,599.92
	\$1,962,265.12
Add contingencies 5% .....	96,100.00
	\$2,058,365.12

Quantities according to revised estimate.

Core stone in breakwater, 588,625 cu. yd. at \$2.50 .....	\$1,471,562.50
Cover stone in breakwater, 81,250 cu. yd. at \$3.80 .....	308,750.00
	\$1,780,312.50
Dredging channel, 2,500,000 cu. yd. at 31c. ....	775,000.00
Dredging basin, 4,200,000 cu. yd. at 24c. ....	1,008,000.00
Submarine rock in entrance leading to proposed dry dock, 75,000 cu. yd. at \$8 .....	600,000.00
	\$4,163,312.50
Contingencies 5% .....	208,165.62
	\$4,371,478.12

There is an amount of \$500,000 provided in the estimates for 1918-19 for St. John harbor improvements. The Minister, therefore, recommends that the order in council of May 18, 1918, already referred to be cancelled, and that authority be granted as follows:—1—To approve of an assignment of the contract of Norton Griffiths & Co. Ltd. (Canada), in liquidation, for the construction of the works mentioned at Courtenay Bay, St. John, to the St. John Drydock & Shipbuilding Co. Ltd., subject to the following conditions:—That nothing in the agreement of assignment herein or in the approval by the government of this agreement shall be deemed to prejudice or affect any right, title or claim on the part of His Majesty accrued, accruing or provided for under or by reason of the said contract of Mar. 25, 1912. That the assignee shall covenant with the government that it will execute and perform all unfulfilled covenants, agreements or obli-



gations which the contractors had made with the government under the contract of Mar. 25, 1912, subject to the provisos hereinafter contained. That the assignee shall accept in their present condition the works and such of the specific chattels referred to in the schedule to the said assignment as are on the premises and works, and shall be found by the certificates of the engineer heretofore given, and under no circumstances shall the assignee be entitled to payment for work performed at the date hereof, and the assignee shall not advance any claim for damages or otherwise for anything arising out of the partial performance of the contract by Norton Griffiths & Co. Ltd. (Canada), provided, however, that any work heretofore performed on the construction of a drydock shall not come under the provisions of this clause. That the assignee shall enter into an agreement to construct a drydock of the first class at St. John, under the provisions of an Act to encourage the construction of drydocks, 9-10 Edward VII, chap. 17, (1910), as amended by chap. 27, 1917.

2—To extend the existing breakwater, constructed under the above contract, by a length of approximately 2,500 lin. ft.

3—To complete the dredging of the basin in front of the drydock site, as well as the dredging of a channel from the main channel of St. John harbor inside the breakwater to the said basin, and also to dredge the entrance leading to the drydock, the same not to exceed 300 ft. in width.

The works described in paragraphs 2 and 3 immediately preceding to be carried out under the terms, conditions and prices of the aforementioned contract with Norton Griffiths & Co. Ltd. (Canada) as amended by the following provisos:—The works to be performed in accordance with the annexed layout plan. Should the amount voted by parliament and applicable towards payment for the work hereby contracted for, be at any time expended previous to the completion of the works the Minister or the engineer may give the contractors written notice to that effect, and upon receiving such notice the contractors may, if they think fit, stop the work, but in any case shall not be entitled to any payment for work done beyond the amount voted and applicable as aforesaid unless and until the necessary funds shall have been voted by parliament in that behalf. And in no event shall the contractors have or make any claim on His Majesty for any damages or compensation by reason of the suspension of payment, or by reason of any delay or loss caused by the stoppage of work. And in the event of the contractors electing to proceed or proceeding with such work after such notice, and before such additional funds are voted, no action of the engineer or of any other person on behalf of His Majesty, in giving orders, directions or instructions, or otherwise acting with respect to such work, shall be taken or considered as in any manner improving the rights of the contractors or as waiving in any particulars any of the provisions of this section. The time for the carrying out of these works to extend over four years. The Crown to have the same remedies against the assignee in case of default or failure to perform the work diligently as against the Norton Griffiths & Co. Ltd. (Canada). The St. John Drydock & Shipbuilding Co. Ltd., to deposit a cash security of \$125,000 as a guarantee for the proper carrying out of the said works.

The approximate estimated cost of the works for the carrying out of which au-

thority is asked is, as already stated, \$4,371,478.12.

The foregoing report was approved by the Privy Council on June 10.

**Harbor work to be done.**—The agreement between the Dominion Government and the St. John Drydock & Shipbuilding Co., entered into on July 11, provides for an extension of 2,500 ft. to the existing breakwater of 4,570 ft., making a total length of 7,070 ft.; dredging an entrance channel about 6,800 ft. long, to a depth of 22 ft. below low water, and excavating a basin in front of the drydock, with a channel leading into it, to a depth of 32 ft. below low water, including the removal of approximately 75,000 cu. yd. of submarine rock at the entrance to the drydock. These harbor works are estimated to cost over \$4,000,000. The time for completing them has been extended to June 30, 1922.

**Drydock.**—Under another agreement entered into July 11, the company has undertaken to build, under the Drydock Subsidies Act, a drydock of the first class, capable of docking the largest British war vessels. It will have the following dimensions:

Length on center line on bottom from caisson groove to head .....	1150 ft.
Width of entrance at coping level .....	133 ft.
Width of entrance on bottom .....	125 ft.
Width of dock at coping level .....	143 ft.
Depth of water on sill at l.w.l. ....	12 ft.
Depth of water on sill at h.w.o.s.t. ....	40 ft.

The estimated cost of the dock is about \$5,900,000, including work already done by Norton Griffith & Co., at a cost of \$1,093,831.25, and the subsidy to be paid is based on a maximum amount of \$5,500,000, as fixed by the act for docks of the first class, that is,  $4\frac{1}{2}\%$  on that amount for 35 years. The company is to commence work on the drydock by Jan. 11, 1919, and to complete it by July 11, 1922.

After the company shall have expended \$2,000,000 upon the construction of the drydock, including the work already done by Norton Griffith & Co., it will not be compelled to proceed further with its construction until the Dominion Parliament shall have voted the following sums, viz.: for the fiscal year 1919-1920, \$500,000, and for each of the three following fiscal years \$750,000. The company is to keep the drydock in repair and working order, in default of which the Minister of Public Works may take possession of it and repair and operate it.

**Subsidies.**—The company has submitted a proposal in regard to its protest to the New Brunswick Government and to the city and county of St. John, with a view to obtaining cash bonuses aggregating \$500,000. In addition to this, it is desired to obtain the right to divert the road at the head of the dry dock site, and the freehold to the land occupied by the municipal home, which the company will undertake to reproduce elsewhere. T. A. Duff, Toronto, one of the directors, is reported to have stated that unless assistance is forthcoming from the province, city and county, the company will not build the shipbuilding plant; but if the assistance is granted, work will be proceeded with at once. He is also reported as stating that work will commence on the drydock at once.

**Personnel of Company.**—The contracts entered into with the government, on July 11, as stated above, were signed for the company by the President, Robt. Wall, Manager Contractors' Supplies Co., Montreal, and by the Secretary, R. T. Heneker, K.C., Montreal. Since then the directorate has been reorganized as follows:—President, Jas. Playfair, President Great Lakes Transportation Co., Midland, Ont.;

Vice President and Managing Director, D. S. Pratt, coal, wood and lumber merchant, and General Manager Canadian Dredging Co., Midland; Secretary-Treasurer, T. A. Duff, legal advisor for Great Lakes Transportation Co., Canadian Dredging Co., Midland Shipbuilding Co., Midland Engine Works Co. and other companies in which Mr. Playfair is interested, Toronto; other directors, R. S. Heneker, K.C., Montreal; W. E. Phin, contractor, Hamilton, Ont.; W. J. Sheppard, lumberman and former President, Northern Navigation Co., Waubaushene, Ont.; D. L. White, Jr., President Midland Shipbuilding Co., President Midland Lumber Co., and partner with Jas. Playfair in Playfair & White, wholesale lumber, Midland.

Among others said to be interested in the company are Senator H. W. Richardson, Vice President Great Lakes Transportation Co., and G. Y. Chown, manufacturer, Kingston, Ont.; J. B. Tudhope, M.P., Orillia, Ont.; Robt. Hobson, President Steel Co. of Canada, Hamilton, Ont.; Geo. McAvity, hardware merchant and manufacturer, and Jno. Moore, St. John, N.B.; J. B. Craven, contractor and electrical engineer, New York, N.Y., and J. A. Paisley, Cleveland, Ohio. J. B. Craven was interested in the original contract held by Norton Griffiths & Co., and on the abandonment of the contract, he applied at Montreal for an interlocutory injunction to prevent the transfer of certain of the company's property, and claimed that he was interested to the extent of one half of 49% of the total net profits on the contract, over and above 15% of the total prime cost of the construction works.

The harbor work will probably be carried out by the Canadian Dredging Co., in which Mr. Playfair and some of the other persons above mentioned are interested, and of which D. S. Pratt is General Manager.

The company has appointed as its Chief Engineer, A. R. Dufresne, B.A.Sc., C.E., heretofore Assistant Chief Engineer, Public Works Department, Ottawa. The Public Works Department engineer in charge of the St. John harbor works is Alex. Gray.

**Nova Scotia Steamships, Ltd.,** is reported to have been organized to operate a steamship service between Halifax, Newfoundland and New York. F. H. Chipman, formerly Manager, Canada Atlantic & Plant Steamship Co., is mentioned as Manager, and H. L. Chipman, who was Manager before him, and has been on military service in Canada since early in the war, is stated to be acting as Halifax Agent. Shea & Co. are said to have been appointed agents at St. John's, Nfld., and the Federal Line, agents at New York. It is said that the offices occupied formerly by the Canada Atlantic & Plant Steamship Co. at Halifax are being renovated for occupation by the company, and its vessels will use the Plant Line wharves. The Canada Atlantic & Plant Steamship Co. discontinued business May 1, 1917, on account of the falling off of passenger traffic due to war conditions.

**British Vessel Purchases.**—In a report covering transfers of vessels from and to the United Kingdom register during 1917, it is shown that 371 steamships and 23 sailing vessels changed ownership. The gross tonnage of the steamships was 1,060,155, and of the sailing vessels, 42,990. During the year, Great Britain purchased from neutral and allied countries 355 steamships of 752,780 gross tons, and 76 sailing vessels of 96,174 gross tons.



## The Toronto Ferry Co's Earnings, Fares Etc.

Towards the end of June, the Toronto City Board of Control dealt with the Toronto Ferry Co.'s application for permission to increase passenger fares from 10c to 15c a round trip, between the main land and Toronto Island, and the board passed a resolution approving the increase, and ordering that a bylaw be drafted to give effect to it. When the matter came before the city council subsequently, the board's action was not approved and any further move was delayed pending a report on the company's financial position. On receipt of this, and after some discussion by the council, when some opposition was made to the proposals, a bylaw was drafted and submitted to the Ontario Government for approval. In the meantime, it was pointed out that the bylaw did not carry out the council's wishes, as it was stated to be the intention that fares for children should not be increased, and that the increases authorized under the bylaw, should be for the duration of the war only. The Government thereupon returned the bylaw for amendment. As a special meeting of the council would be necessary for this purpose, and as this was not considered expedient in view of the holiday season, the board of control approved the proposal that an agreement be made with the company providing that the bylaw shall not apply to increase children's fares above the existing rate, which by the original bylaw is fixed at half the adult fare; that it shall not apply to picnics and baseball combination tickets, and that the increases authorized by the bylaw shall be only for the duration of the war.

The bylaw has been submitted to the Government again for approval by order in council, and until such approval is given, the fares remain as hitherto. It is not known, at the time of writing (July 24), what the Government will do in the matter, as it has returned the bylaw once for amendment. It may possibly amend it, according to the council's wishes, of its own volition, or may withhold approval until such time as it is thought fit to call a meeting of council to have the bylaw put in the shape in which it should have been before being submitted to the government. In any case, the proceedings exhibit a degree of municipal ineptitude which bodes ill for the municipal operation of the street railway system in the near future.

In connection with the Toronto Ferry Co.'s recent application for authority to increase its passenger fares between Toronto and Toronto Island, the city board of control requested the Commissioner of Finance, T. Bradshaw, and the City Auditor, W. Sterling, to examine the company's statements for five years, from Oct. 31, 1912 to Oct., 1917. As their report will be of special interest to ferry companies generally, and also to others, it is given in full as follows:—

The revenue from "passage traffic" and from rentals year by year is as follows:—

Year.	Rental. Passage	Rental.	Total.
1912 .....	\$118,057	\$17,731	\$135,788
1913 .....	121,518	17,109	138,627
1914 .....	109,066	20,757	129,823
1915 .....	90,641	15,361	106,002
1916 .....	94,931	16,679	111,610
1917 .....	107,782	21,094	128,876

Average \$125,121

The revenue fluctuated from \$106,002 in 1915, to \$138,627 in 1913, and the average for the whole period was \$125,121.00. The revenue for 1917 was \$3,755.00 in excess

of the average of the period. The greatest fluctuation took place in "passage traffic." In 1915 the receipts from this source were \$90,641.00, while in 1913 they reached the maximum, \$121,518. In 1917 they were \$107,782. Receipts from rentals were higher in 1917 than in any of the previous years.

**Operating and Other Expenses.**—The following statement shows the operating and other expenses for the same period:—

Year.	Operating and other expenses.
1912 .....	123,626
1913 .....	113,513
1914 .....	127,906
1915 .....	107,153
1916 .....	108,284
1917 .....	120,718

The operating expenses have had their ups and downs. In 1915 they were \$107,153, while in 1912 they reached \$123,626.00. The average for the six years was \$116,867.00.

**Comparison of Revenue and Expenses.**

Year.	Revenue.	Expenses.	Per cent. of Revenue.
1912 .....	135,788	123,626	91
1913 .....	138,627	113,513	82
1915 .....	106,002	107,153	101
1916 .....	111,610	108,284	97
1917 .....	128,876	120,718	94

Operating expenses have run from 82% to 101% of revenue, and since 1915, which was the most unfavorable year for the company, there has been a steady improvement. For 1917, the expenses represented 94% of the revenue.

**Comparison of Expenses.**—1915 being the most unfavorable year of the company's experience, it has been thought desirable to analyze the expenses of that year with those for 1917, in order to determine the cause of the great variation:

	Expenses 1915.	Expenses 1917
Fitting out .....	\$2,953	\$3,511
Repairs .....	5,234	8,568
Running expenses .....	35,068	44,301
Laying up .....	2,113	2,296
Hanlans Point expense.	8,172	7,012
General expense .....	6,418	7,263
Electric light .....	3,993	3,035
Advertising .....	1,208	1,684
Entertainment .....	9,066	10,116
Accident insurance .....	2,376	2,388
Dockage .....	5,813	6,431
H. o. expense .....	6,630	5,484
Insurance boats .....	6,425	6,706
Interest .....	11,684	11,924
	\$107,153	\$120,718

The net increase of 1917 expenses over those of 1915 were \$13,566. The items of increase arise chiefly in operations involving labor and material.

**Surplus and Deficit on Year's Operations.**—In order to determine how profitable or otherwise the company's operations have been, the net results for the past six years are tabulated.

Year.	Surplus.	Deficit.
1912 .....	12,162	
1913 .....	25,114	
1914 .....	1,917	
1915 .....		1,151
1916 .....	3,326	
1917 .....	8,158	

The foregoing expenses include interest on all borrowed moneys, including that on the mortgage bonds of \$100,000.00. In 1915 there was an actual deficit of \$1,151, while in 1913 there was a surplus of \$25,114. In 1917 the surplus was \$8,158. The average earnings for the six years were \$8,254, or practically the same as those for the past year.

**Capitalization.**—The company is capitalized as follows:—Common stock, \$300,000; 8% preferred stock, \$100,000. In addition to the foregoing there are outstanding mortgage bonds for \$100,000, carrying interest at the rate of 6%. We are informed that the preferred stock and bonds were sold at par, and that the com-

pany received the full face value. It is stated that the \$300,000 new common stock was transferred in exchange for common stock of the old company. Just exactly what this implies, we cannot say.

**Dividends.**—Interest has been regularly paid on the mortgage bonds, but the 8% dividend on the preferred stock has only been paid up to 1913. For 1914 only 4% was paid thereon, and since that no dividends whatever have been paid. Two per cent. was paid on common stock in 1906 and 1907, but no dividend has been paid since.

**Depreciation.**—No amount has been charged, nor provision made for depreciation. We are informed that the increase in wages this year, compared with those in effect in 1917, will amount to \$1,000 a month, and that the cost of material in connection with operating and repairs has increased during the past year 50%.

**Concessions.**—We understand that for certain concessions the company receives rentals. Whether the rentals received for these concessions are fair or not, we are unable to determine, nor do we know to whom these concessions have been granted.

**Increase in Rates.**—If the same volume of passage traffic is experienced in 1918 as in 1917, and if rates are advanced as mentioned below, the increases in revenue will be: 10%, \$10,778; 20%, \$21,556; 30%, \$32,334; 40%, \$43,112; 50%, \$53,891.

**Canada's First Concrete Steamship.**—The first reinforced concrete steamship to be built in Canada made her trial trip between Montreal and Cornwall, July 25, making the trip under 24 hours, at an average speed of 10 knots an hour. This vessel, which has been named *Concretia*, was launched at the Atlas Concrete Shipbuilding Co.'s premises, Montreal, Nov. 14, 1917. After completing the trip, the vessel returned to Montreal, where the superstructure and other work is to be completed. Her dimensions are given as follows:—length 126 ft., width 22½ ft., depth 12½ ft. The skeleton frame, on which the concrete was poured, consists of structural steel ribs 5 in. at the top and 14 in. at the base and spaced 27 in. center to center. She is spoken of as the "first genuinely concrete vessel to be built and launched in America," but this is incorrect, as the concrete steamship *Faith*, was launched in California some time ago, and made a trial trip on the coast as far north as Vancouver.

**Steel Plant for British Columbia.**—A press dispatch from Trail, B.C., states that that place has been selected as the site for the erection of a steel plant to be bonused by the Dominion and provincial governments. As far as we are aware, the Dominion Government has not decided on any policy of granting a bonus for the erection of a steel plant, and in the case of the rolling mill for steel plates for shipbuilding, which is being built at Sydney, N.S., by the Dominion Iron & Steel Co., the Dominion Government has merely undertaken to buy a certain tonnage of plates over a period of years.

**Frank Waterhouse & Co. of Canada, Ltd.**, the incorporation of which was announced in a recent issue, has its head office at Vancouver, B.C., the board being as follows:—Frank Waterhouse, Seattle, Wash., President; H. B. Neil, J. R. Lane, Seattle, Wash., and D. G. Marshall and John Speer, Vancouver, B.C. The company has bought the steamships *Easthol*, *Westham* and *Selkirk* from the *Lincoln Steamship Co.*



### Atlantic and Pacific Ocean Marine.

The s.s. *Sewalls Point*, 3,354 tons, which went ashore in a fog at Five Fathoms Harbor, near Halifax, N.S., July 1, has been floated and docked at Halifax.

The s.s. *Celtic Prince*, 10,500 tons, which went ashore near Father Point about July 14, arrived at Quebec, July 24. She was bound to Montreal from Liverpool, Eng., on her maiden voyage.

France & Canada Steamship Co. has purchased the yacht *Karina*, stated to be one of the largest three masted schooner yachts in the world, from Mrs. T. P. Burgess, Dedham, Mass., for use as a training ship. She is of steel construction, 200 ft. long overall, 150 ft. long on the water line, 34 ft. wide, and draws 17 ft.

The Cunard Line s.s. *Carpattia* was reported to have been sunk by a German torpedo off the Irish coast, July 19, outward bound on transport service. No lives were reported lost. She was about 14,000 gross tons, and came into prominence for the part she played in rescuing survivors from the s.s. *Titanic* which was lost on her maiden voyage in April, 1912.

At Elder, Dempster & Co.'s annual general meeting at London, Eng., recently, Sir Owen Phillips, Chairman, stated that while, under pressure of circumstances, the company had been obliged to suspend its Canada-South Africa steamship service, the British Ministry of Shipping was endeavoring to release some tonnage to enable the company to meet the position.

Canadian Pacific Ocean Services, Ltd., is reported to be negotiating for the chartering of one or two steamships for its Pacific Ocean service. Since the requisitioning of its Pacific Empresses by the Dominion Government, the trans-Pacific service has been curtailed, only two vessels being operated, and much of the traffic has been diverted to Japanese lines. Reports were current recently that the company might charter two steamships owned by companies located in Holland, but the two vessels then mentioned, are being operated by the U.S. Shipping Board.

### Maritime Provinces and Newfoundland.

The tern schooner *Herbert Warren*, which was purchased by the Newfoundland Government about a year ago, was sold by auction at St. John's, Nfld., July 18, for \$76,500, to J. Sellars.

Reinhardt Bros., La Have, N.S., are reported to have purchased the tern schooner *Marion Douglas*, registered as owned in Parrsboro, N.S., and built there about a year ago, for \$92,000.

The Public Works Department received tenders to July 23 for repairs to the wharf at Shediac, N.B.; to July 25 for repairs to the breakwater at Cow Bay, N.S., and to July 25, for dredging at the Government wharf at Fourchu, N.S.

The service given by the s.s. *Aranmore* between Yarmouth, N.S., and Boston, Mass., which was suspended recently for ten days, has been resumed, and it is reported that the Dominion Government has agreed that the service be continued indefinitely.

The Department of Public Works has dredged a channel 200 ft. wide inside the breakwater at the south entrance to Shipigan Gully, N.B., to give a more direct course into the harbor. The new channel obviates the abrupt bend to the eastward, immediately inside the breakwaters, and the sharp turn to the westward above the main light.

### Ontario and the Great Lakes.

The Dominion Public Works Department will receive tenders to Aug. 7, for the completion of the renewal of the south pier at Bayfield, in Huron County.

The Northern Navigation Co.'s s.s. *Huron* was towed into Port Arthur, July 24, having blown out a cylinder head, while upbound, near Passage Island. The passengers were transferred to a C.P.R. steamship.

The s.s. *Australia*, owned by the Pioneer Steamship Co., Cleveland, Ohio, which was sunk in collision in the St. Clair River recently, has been raised by the Reid Wrecking Co., Sarnia, and taken to Port Huron, Mich., for overhaul and repairs.

The Dominion Public Works Department has completed the dredging of a channel from deep water in Sarnia Bay, St. Clair River, to the Dominion Salt

length 91.2 ft., breadth 18.3 ft., depth 8.8 ft.; tonnage, 99 gross, 65 register.

W. H. Evans, Montreal, is asking the Superior Court there to declare that he is the only lawful owner of an undivided seven-eighths interest in certain property at the corner of Craig St. and Victoria Square, Montreal, and a judicial sequestrator has been appointed for the Ogdensburg Coal & Towing Co., which has been ordered to give security for all petitioner's claims to the revenues from the property pending final judgment of the action.

It was announced from Cleveland, Ohio, July 24, that members of the Great Lakes sailors' union had decided to call a strike for July 28, on the ground that vessel owners had not granted the demands for better working conditions and increased wages. A statement issued by a vessel owner and member of the Lake Carriers' Association, declares that the working conditions were submitted to the U.S. Shipping Board in Sept., 1917, and the



Wooden cargo steamship, *War Mohawk*, immediately after launching by Quinlan & Robertson, Ltd., Limoilou, Quebec.

Co.'s wharf. The channel is 1,050 ft. long with a bottom width of 60 ft., and a depth of 15 ft. below zero of the gauge at Point Edward, which is 578.51 ft. above mean sea level, New York.

J. E. Lawrence, formerly paymaster for the Welland Canal, under the Department of Railways and Canals, was sentenced to imprisonment for 3 years, at St. Catharines, Ont., July 12, for the theft of about \$16,000 from the Dominion Government. The method adopted was that of padding the payrolls, and the defalcations extended over 25 years.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for June, as follows:—Superior, 602.10; Michigan and Huron, 581.97; St. Clair, 575.89; Erie, 572.53; Ontario, 247.01. Compared with the average June levels for the past ten years, Superior was 0.16 ft. below; Michigan and Huron 1.19 ft. above; Erie 0.42 ft. below, and Ontario 0.02 ft. below.

The steam tug *Alex. Clark*, registered at Collingwood, has been bought by the Canadian Stewart Co., and is being overhauled and remodelled by the Collingwood Shipbuilding Co., to make her suitable for ocean service. She was built at Collingwood in 1911, and is screw driven by engine of 29 n.h.p. Her dimensions are:

whole matter left in its hands. The matter of wages has been given considerable discussion by the Shipping Board, and on May 18, a wage scale was put into force for the sea coast, which is lower than the voluntary scale for the Great Lakes. The strike did not materialize, better counsels having prevailed.

### Manitoba, Saskatchewan and Alberta.

The Dominion Public Works Department reports the following improvements by dredging in the Red River channel between Selkirk, Man., and Lake Winnipeg:—Selkirk repair slip—a cut 170 ft. long by 20 ft. wide on each side of the outer end of the boat repair slip, at Selkirk; Park Point—a curved cut 2,400 ft. long, the upper 1,789 ft. 80 ft. wide, the lower 611 ft. 40 ft. wide, around Park Point below the town, to improve the channel close to the west bank, following the curve of the point; Sugar Island Bar—a cut 951 ft. long by 40 ft. wide in the channel through the bar below Sugar Island; Selkirk slough—a cut 3,215 ft. long by 40 ft. wide to improve the channel to the wharves in the slough; Slough turning basin—a cut 488 ft. long by 40 ft. wide on the east side of the slough oppo-



site the government ship yard, to provide a turning basin; entrance to Middle Channel at Forks—a cut 1,753 ft. long by 140 ft. wide at the Forks to improve the main channel leading to the lake; easing of bend into new channel—easing of the turn at the junction of middle and new channels by dredging 120 ft. in width off the point; back filling protection work, a cut 957 ft. long by 50 ft. wide between the breakwaters, close to the west one, the material deposited outside the west breakwater for back filling; deepening channel outside breakwaters—a cut 954 ft. long by 140 ft. wide immediately outside the breakwaters in the axis of the range lights; all this dredging has been done to a depth of 9 ft. below low water, which is 711 ft. above mean sea level at New York.

### British Columbia and Pacific Coast.

The Border Line Transportation Co. is stated to have chartered the reinforced concrete barge built recently by the Inter-Ocean Barge & Transport Co., Seattle, Wash., with the intention of operating her in general freighting business between Seattle and Victoria and other B.C. ports. The barge has the following dimensions: length 116 ft., breadth 34.9 ft., depth 10 ft. The hull is divided into 8 water tight compartments, which can be used for carrying liquid cargo in bulk, and she has a deck cargo capacity of 550 tons. The steel reinforcing ranges from  $\frac{1}{2}$  in. to  $1\frac{1}{2}$  in. thick, and the sides, bottom and deck of the vessel are of concrete  $3\frac{1}{2}$  in. thick.

### Fast Freight Service on New York Barge Canal.

Through freight service with all the commercial machinery common to railway freight service has been initiated by the U.S. Railroad Administration on the New York State Barge Canal, the operation of which the government took over some months ago. A triweekly fast freight carload and less-than-carload service has gone into effect between New York and Buffalo, serving Albany, Troy, Amsterdam, Little Falls, Utica, Rome, Syracuse, Rochester, Lockport, Tonawanda, Niagara Falls and Buffalo. Ten deck-loading power freighters and two covered barges were acquired to form the nucleus of a fleet. As traffic develops and demand for additional equipment arises, the service will be extended to other points and additional vessels acquired. Freight agents have been appointed and will be located at each of the above named ports.

Uniform bills of lading, naming all the conditions and liabilities accepted by rail lines, will be issued and freight will be accepted subject to the rules and regulations relative to ratings, packings, etc., that are prescribed by current classification. Tariffs have been issued naming class and commodity rates between all points to be served. The rates are the old railway rates, which are about 25% less than the present railway rates. Tariffs will also be issued naming joint rates with connecting carriers, both water and rail. For the present the new boat line will operate only between Albany and Buffalo, transfer being made at Albany to the Hudson River Line.

As a part of the new freight service the government has had built a 50 ft. spur at Troy, which connects the Boston & Maine Rd. tracks with the barge canal warehouse and dock. This is the first actual track connection between railway

and canal, and will permit the ready transfer of freight between these two carriers. The Railroad Administration is also building trestles at Ithaca on Lake Cayuga and Watkins on Lake Seneca, to be used in loading barges with coal from the accessible fields.

### Mainly About Marine People.

Hon. A. K. Maclean, M.P. for Halifax, N.S., is acting Minister of Marine and Fisheries, during the absence in England of Hon. C. C. Ballantyne.

H. S. Carmichael, Passenger and Freight Manager, Canadian Pacific Ocean Services, Ltd., London, Eng., has been installed as Worshipful Master of Canada Lodge 3527 of the Freemasons.

Lieut.-Commander J. V. Forster, R.N. R., Marine Superintendent, Canadian Pacific Ocean Services, Ltd., Liverpool, Eng., has been given the Order of the British Empire.

Capt. J. M. Bales, deputy port warden, Montreal, is reported to have been appointed port warden, vice Capt. A. Reid, deceased. He has been in Montreal harbor service since May, 1899, and was born in Liverpool, Eng., in 1854. He was formerly in Elder, Dempster & Co.'s service on vessels plying between Montreal and South Africa.

Capt. A. A. Sears, who died at Victoria, B.C., July 6, aged 55, was a native of Sackville, N.B., and had been connected with the coasting service in British Columbia for the past 28 years. He was for some time in Canadian Pacific Navigation Co.'s service, and later with the Pacific Coast Steamship Co.

Hon. C. C. Ballantyne, Minister of Marine and Fisheries, arrived in England on July 8 to join Sir Robert Borden and other colleagues. Mrs. Ballantyne and family are spending some time at St. Andrews, N.B. A London cablegram of July 27 said that Mr. Ballantyne, with Sir Robert Borden, had had an important conference with Admiral Sir Rosslyn Wemyss and Admiral Hope.

A. E. Philp, who was given the Order of the British Empire recently, is chief engineer of the Canadian Pacific Ocean Services' s.s. *Empress of Britain*, and the senior chief engineer of the service. After serving the customary apprenticeship of seven years in a locomotive works in Glasgow, Scotland, he entered marine service with Elder, Dempster & Co., with whom he served in all engineering grades to that of chief. He passed to C.P.R. service when that company acquired the Beaver Line. He has had considerable experience of transport work, having taken part in it in connection with the Benin and Ashanti expeditions of 1895-96, and also during the South African war.

**Standard Shipbuilding in China.**—A press dispatch says that the British Government has contracted with the Shanghai Dock & Engineering Co. for the construction of three standardized steamships, each of 5,000 tons d.w. capacity. The engines, boilers, steam steering gears, windlasses, winches and other auxiliary machinery will be made in the company's workshops.

**A Shipbuilding Record.**—Workman, Clark & Company, Belfast, Ireland, are stated in a cablegram to have achieved a world's record in completing an 8,000 ton standard steamship in 15 days after she was launched. The vessel was launched at 9 a.m. By 8 p.m. the same day all her engines and boilers were in position.

### The Limitations of Lake Built Vessels for Ocean Service.

It has always been considered that the shipbuilding yards on the Great Lakes, are at a great disadvantage with regard to the construction of vessels suitable for ocean service, owing to the necessary limitation in size, to allow of their passage through the connecting canals. This situation has not been lost sight of, and the construction of the new Welland Ship Canal, work on which is temporarily suspended, is a good step in the right direction. Unfortunately the cause for the suspension of that work, and the cause for the renewed demand for an enlarged outlet to the ocean, are one and the same, namely, the war. Some opinions have been expressed to the effect that the Dominion Government should not have suspended the work at all, but should have pushed it along, as an urgent measure. Undoubtedly, if the canal had been completed, the passage of lake vessels to the ocean to relieve the vessel shortage there, would have been hastened considerably. The only other means which could be employed to get the vessels into this urgent and necessary service, are those adopted, namely, that of cutting the vessels in two and rejoining them after the passage of the canals.

Numerous suggestions have been made regarding plans to overcome the difficulties and loss of time entailed by this procedure, and the following paragraph has recently appeared in the daily press:—"Lake boats built this year will carry sufficient steel with them through the Welland Canal to enable another section to be built into them when they reach the coast." We have not been able to obtain any confirmation of this method of obtaining larger vessels from lake shipyards, but if such a proposal is to be carried out, we do not quite see the advantage to be gained. To build in another section at the coast, would entail the cutting of the vessel in two, either at the coast, or on the lakes. If the vessel is to be cut in two, it would certainly be better to have it done on the lakes, where the vessel is built. It then follows that the vessel might as well be made the larger size at first, sent through the canals in two parts and rejoined after passing through the St. Lawrence Canals, thus leaving the situation practically as at present.

Another suggestion is the construction of the hull in two separate fore and aft sections, and joined together by a form of sponson on each side, thus making the completed vessel, a ship of four compartments. It is claimed that such a vessel could be built on the lakes and taken to tidewater without difficulty, and that the fish-jointing, or overlapping of the sponsons would make a much stronger vessel than an ordinary lake vessel, cut in two and re-joined. A plan of a vessel of this type has been prepared, showing one of 500 ft. long over all, 480 ft. long on the water line, 72 ft. beam. The two sections of the vessel are 250 ft. long each, and the sponson attachments are each 250 ft. long by  $14\frac{1}{4}$  ft. wide by 32 ft. deep.

Coals Company, Ltd., has been incorporated under the Dominion Companies Act, with \$1,500,000 authorized capital and office at Montreal, to carry on a wholesale coal, wood and fuel business, and for such purpose to own and operate steam and other vessels, railways, coal handling plants, etc., and to carry on a general navigation and transportation business.



## Shipbuilding Information and Its Value.

It has never been Canadian Railway and Marine World's policy to utilize space which should be devoted to other purposes, for sounding its own praises, or calling attention to its good points, but occasionally it is quite legitimate to do so. Since the awakening of Canada to the realization of the opportunities offered for the building of ships, we have expended a great deal of time and energy in obtaining the necessary information to enable our readers to keep pace with the great expansion of the trade throughout the Dominion. This information has been collected from various sources, and in almost every case is officially confirmed. Where it is not possible to obtain confirmation before the matter is published, it is given with reserve, and again dealt with when further details are obtained. We believe that in placing information before our readers, it is a duty we owe to them, as well as to ourselves, to see that it is correct, and on this policy has been built the reputation of the past 20 years.

The importance of the expansion of the shipbuilding industry cannot be emphasized too much, nor can the necessity for the allied industries keeping in close touch with the actual situation as it develops. To enable manufacturers to anticipate and meet the demands arising from this expansion, it is necessary that they should have easy access to reliable information concerning the industry, and for this purpose we collect and classify the information in condensed and easily read form, month by month, so that in following through our various issues, the reader finds a complete consecutive record of the progress made.

We have been complimented several times recently on the character and form of the shipbuilding information we publish, and on looking over our pages for the past twelve months, we feel that we are above comparison. The same attention to detail is being continued, and readers may rest assured that the information placed before them can be relied on as correct.

### Manufactured Shipbuilding News.

The following Canadian Press Dispatch, dated Quebec, Que., July 17, was published by a number of daily papers during July:

"With a capital of \$5,000,000, a new shipbuilding concern has been formed, and will operate one of the largest shipyards in America on the shores of the St. Lawrence, opposite Quebec City. The new concern will take in a number of actually existing firms, among which are some Ontario companies. The new syndicate will comprise the Federal Shipbuilding Co. of Sarnia, the Dominion Shipbuilding Co. of Collingwood, and Dussault & Hutchison of Levis, and a number of old country French capitalists. The firm will build steel vessels for the French Government, and yesterday the building of the docks and yards was started. The Federal and Dominion Shipbuilding Companies will cease building ships in Ontario."

Canadian Railway and Marine World for July stated that W. H. Hutchinson, of Baldry, Yerburch & Hutchinson, Ltd., contractors, St. Catharines, Ont., and President of the National Shipbuilding Co., Ltd., Goderich, Ont., and H. Dussault, President, General Public Enterprises Co., Levis, Que., were among the promoters of a company to establish a shipbuilding plant at Benson's Cove, New Liverpool, in St. Romuald Parish, Que., the site selected being on the south side of the St. Lawrence River, near the Quebec Bridge.

At the time of writing no official information is at hand as to the incorporation of a company, as indicated in the dispatch. Of the companies named as likely to com-

prise the new syndicate, we have no information as to the Federal Shipbuilding Co. of Sarnia, and may point out that there is no Dominion Shipbuilding Co. at Collingwood. The Dominion Shipbuilding Co., Ltd., which obtained an Ontario charter with a capital of \$1,000,000, some time ago, and which has now been incorporated with a Dominion charter and a capital of \$3,000,000, is building a large shipbuilding plant at Toronto, and an officer of the company stated, July 17, that his company was in no way connected with the proposals mentioned.

W. H. Hutchinson, of Baldry, Yerburch & Hutchinson, Ltd., was in charge of the contract held by that company, for a section of the Welland ship canal, and on the closing down of that work, acquired the Doty engine works at Goderich, Ont., and incorporated the National Shipbuilding Co. The company has not built any vessels, and the plant at Goderich is apparently only engaged on engine work. In conjunction with H. Dussault, he purchased the Dominion Government dredge Galveston recently, and intends converting it into a cargo steamship for Atlantic service. The General Public Enterprises, Co., of which H. Dussault is President, owns a number of dredges and contractors vessels.

### U.S. Shipbuilding Notes.

J. H. Rosseter, Vice President and General Manager, Pacific Mail Steamship Co., San Francisco, has been appointed Director of Operations of the U.S. Shipping Board.

A total of 67 wooden steamships, with an aggregate tonnage of 242,200, was added to the U.S. merchant marine up to June 1, according to figures prepared by the Division of Wood Ship Construction. Twenty-two of these are of the Hough type, 28 Ferris, 16 of the Emergency Fleet Corporation's own design and 1 of the McCormick type.

Merchant vessels built in the U.S. during the year ended June 30, as officially returned to the Bureau of Navigation, numbered 1,622, or 1,430,793 gross tons, giving the U.S. a merchant marine of about 10,000,000 gross tons.

The U.S. flag has been raised over the first of 8 former German steamers which were seized some time ago by the Uruguayan Government. This is the Artigas, once known as the Weygand, a vessel of 8,800 d.w. tons. The other German ships that will shortly follow the Artigas into the U.S. merchant marine will increase the new tonnage thereof by 62,000.

Counting in 2 steamships which stuck on their ways, 11 which had been held up by a sudden freshet on the Columbia River and whose crews had stood by until midnight hoping the flood would subside in time to get the ships overboard on July 4, and the 8 which, through tidal or other causes, had been launched on the eve of July 4, there were launched on that day 95 ships with an approximate deadweight tonnage of 474,464 tons. The list comprises 42 steel ships of 287,464 d.w. tons and 53 wooden steamships of 187,000 d.w. tons.

Following the conclusion of an arrangement with the Kiangnan Dock & Engine Co. of Shanghai, China, whereby that company is to build 120,000 tons of steel steamships for the U.S. Shipping Board, contracts for 30 additional steel cargo steamships had been awarded to Japanese shipyards. The U.S. Shipping Board had already chartered 150,000 tons of shipping from Japan and purchased another 127,000 tons. Some of the ships will be

equipped with guns and gun crews and put immediately into the overseas service to carry men and supplies to France. Others will be used in the coastwise and South American trades. Total contracts now let to Japanese shipbuilders provide for 380,000 tons of shipping, including 50 cargo carriers. These will cost approximately \$78,000,000, of which about \$20,000,000 has been expended. The Shipping Board has permitted Japan to obtain 100,000 tons of steel plates, and will now provide 35,000 tons for this new construction.

### Steamboats in the Far Northwest.

The following item appeared in Canadian Railway and Marine World for July:—

"The Peace River Development Co.'s steamboats are the only ones trading from Peace River Landing to Herschel Island, 2,000 miles, this season. The route is not a continuous one. The steamers connect with the Edmonton, Dunvegan & British Columbia Ry., and the first piece of navigation extends to Vermilion Chutes, whence a motor road is being completed to Lower Peace River, where there is steamboat connection to Chipecan on Athabaska Lake. From this point there is a steamboat route to McMurray on Athabaska River, which is the terminal point of the Alberta & Great Waterways Ry., extending to Edmonton. The tourist possibilities of this area are being developed by the railway company."

A correspondent writes pointing out that the first sentence of the item is erroneous, as the Hudson's Bay Co. is operating its steamboats north of Vermilion Chutes as in former years. The Peace River Development Corporation operates on Peace River from Hudson's Hope, on the boundary between Alberta and British Columbia, to Vermilion Chutes. At this point freight and passenger traffic is transferred to the Hudson's Bay Co.'s steamboat McMurray and carried on to Fort Fitzgerald. After crossing Smiths Portage, which extends from Fort Fitzgerald to Fort Smith, freight and passengers are taken on by the Hudson's Bay Co.'s steamboat McKenzie River to Fort McPherson, at the head of the delta of the Mackenzie River.

The Edmonton, Dunvegan & British Columbia Ry., connects Edmonton with the Peace River navigation by its Central Canada Ry. branch, from McLennan to Peace River Landing.

**Warning to Navigators in Welland Canal.**—The attention of masters of vessels is drawn to the fact that the s.s. Wiley M. Egan, loaded and down bound, sank in the Welland Canal, immediately north of the Michigan Central Rd. swing bridge, south of Welland, after having struck the southerly rest pier, July 15. Her stern rests on the eastern bank and her bow points somewhat out into the channel. She is tied up as securely as possible, but there is imminent danger of her sliding into the channel and blocking navigation. Vessels passing her must do so at low speed and exercise great caution, otherwise the maximum penalty provided under the canal rules will be imposed. Patrols will enforce this regulation.

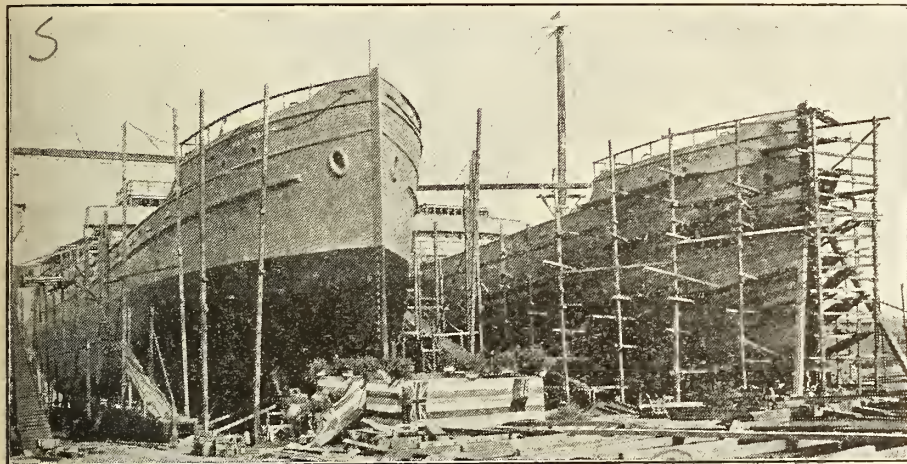
**The J. H. Price Shipbuilding Corporation,** headed by J. H. Price, President, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C., is reported to have purchased the Sandstrom Shipbuilding Co.'s plant at Meadow Point, Seattle, Wash., and to be building wooden motor ships.



## Dominion Canal Statistics for 1917.

The total traffic through Canadian canals during the navigation season of 1917 was 22,238,935 tons, a decrease of 1,344,556 tons from 1916. The distribution of the traffic through the various canals, with increases or decreases, was as follows:—

	tons.	Increase.	Decrease.
Sault Ste. Marie ..	15,447,092	.....	1,366,557
Welland ..	2,490,542	.....	54,422
St. Lawrence ..	3,391,144	23,080	.....
Chambly ..	434,818	35,841	.....
St. Peters ..	62,254	52,625	.....



Two wooden cargo steamships for British Government, in Cameron-Genoa Mills Shipbuilders, Ltd., Yard, Point Ellice, Victoria, B.C.

The s.s. War Skeena to the left, just prior to launching, and the s.s. War Stikine to the right.

Murray ..	57,603	10,923	.....
Ottawa ..	214,835	.....	22,816
Rideau ..	84,549	.....	20,881
Trent ..	48,924	3,915	.....
St. Andrews ..	7,175	.....	6,264

Total .. 22,238,935 126,384 1,470,940

The tonnage for 1917 was divided as follows:—Canada, 5,964,369; U.S., 16,274,566. It covered the following classes of commodities:—

Agricultural products ..	3,827,692 tons
Animal products ..	13,439 tons
Manufactures ..	813,158 tons
Forest products ..	1,170,402 tons
Mine products ..	16,410,856 tons

Total .. 22,238,935 tons

The volume of Canadian wheat carried through the Canadian canal at Sault Ste. Marie in 1917, was 60,551,243 bush., against 82,807,342 in 1916; and the volume of Canadian wheat carried through the U.S. canal, during the same period, was 98,023,019 bush., making a total of 158,574,262. This was distributed between ports as follows:—

From Fort William and Port Arthur ..	Bushels.
To Montreal ..	1,280,170
To Georgian Bay ports ..	52,453,042
To other Canadian ports ..	31,369,487
To Buffalo, N.Y. ....	72,872,692

157,975,391

From Duluth, Minn., to Montreal .. 598,871

Total .. 158,574,262

In addition to the foregoing, 13,230,859 bush. of Canadian wheat passed through in the form of flour, making a total of 171,805,112 bush. of Canadian wheat waterborne.

Carriers by water obtained exceptionally high rates on wheat, during 1917, which may be taken as indicating heavy tolls for all commodities. The rate over the different routes for 1915, 1916 and 1917, all out of Fort William and Port Arthur, were as follows:—

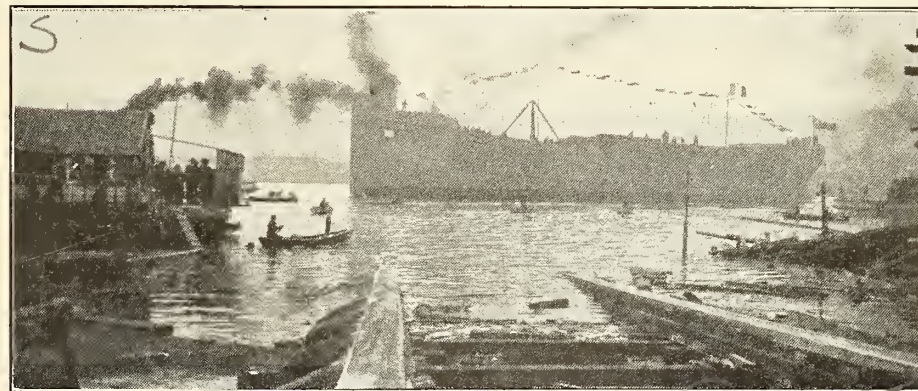
To Montreal—	1915.	1916.	1917.
A ton per mile .....	0.132c	0.205c	0.263c
A bush. ....	4.99c	7.55c	9.78c
A ton ..	\$1.66	\$2.52	\$3.26
To Georgian Bay—			
A ton per mile .....	0.282c	0.264c	0.270c
A bush. ....	3.54c	4.10c	4.25c
A ton ..	\$1.18	\$1.37	\$1.42
To other Canadian ports—			
A ton per mile .....	0.124c	0.169c	0.185c
A bush. ....	2.84c	3.68c	4.18c
A ton ..	94.80c	\$1.22	\$1.39
To Buffalo—			
A ton per mile .....	0.159c	0.159c	0.196c
A bush. ....	3.97c	4.27c	5.000c
A ton ..	\$1.32	\$1.42	\$1.67

In order that the bearing of these rates

may be understood properly in their relationship to gross earnings, allowance should be made for the following charges per bushel paid by shipowners on all cargoes of wheat between Fort William and Montreal:—

Clearing house at Fort William .....	0.01 to \$0.03c
Trimmers at Fort William .....	0.06c
Elevation at Montreal .....	0.30
Shovelling at Montreal .....	0.20c
	0.59c

To Port Colborne the average deduc-



Wooden cargo steamship, War Seneca, for British Government. Immediately after launching by Quinlan & Robertson, Ltd., at Limoilou, Quebec.

tions would be 0.44c a bush.; to Georgian Bay ports, 0.38c, and to Buffalo, 0.41. The total rates from Duluth to Montreal were substantially the same as from Port Arthur and Fort William to Montreal.

A considerable volume of other grains passed through the Sault Canals, the actual figures being as follows:—

	1916 bush.	1917 bush.
Oats ..	57,743,636	37,014,644
Barley ..	8,679,607	5,149,725
Flax seed ..	4,981,569	5,073,760

Total .. 71,354,812 47,238,129

## British Colonies Transportation Company, Limited.

This company has been incorporated under the Dominion Companies Act with an authorized capital of \$750,000, divided into \$250,000 of cumulative preference stock bearing interest at 8%, and redeemable at 110, and \$400,000 of common stock. An issue of \$230,000 of preference has been placed on the market, with a bonus of 30% of common stock. The charter provides that 10% of the net earnings shall be used annually in the redemption and cancellation of preference shares, and the prospectus states that it is estimated that in about four years, one half of the preference shares will have been redeemed through this sinking fund. The first preference dividend is to be paid Nov. 1, and quarterly thereafter (of course, if earned).

The prospectus also states that it is estimated that on the basis of contracts which can now be secured, the earnings for the first year will approximate \$300,000. Thus, after providing for interest and sinking fund on \$200,000 of bonds which are to be issued in part payment of vessels, and for the preference dividend, and setting aside the amount required for redeeming preference shares, the balance of earnings should show approximately 30% on the common stock. The bonds are redeemable annually over four years and the amount to be paid off in the first two years should reduce the bonded indebtedness nearly 75%. It is also stated that owing to the shortage of tonnage and the large amount of freight awaiting shipment to and from South Africa and other southern ports, a steady business is assured at very remunerative rates.

The company has three wooden ships under construction, and these are now nearing completion. It is expected that two of them will be delivered during August, and the third in September. The first two have a carrying capacity of about 1,000 tons each, and the third, about 2,000 tons. The smaller vessels will be three masted, and of the following dimensions:—length over all 171 ft., beam 35

ft., depth of hold 12 ft. 8 in. The larger vessel will be four masted, and 216 ft. long over all, 39 ft. beam and 18½ ft. depth of hold. The vessels will be equipped with oil engines for handling pumps, cargoes, sails and anchors, and generating electricity for lighting. They are being built to Lloyd's highest classification, with a rating for 13 years. The three vessels are valued at over \$450,000. They are being built in the Maritime Provinces.

The company's head office is at St. John, N.B., and the directors for the cur-



rent year are:—Senator Crosby, Halifax, N.S.; F. W. Sumner, Moncton, N.B.; J. A. McDonald, Amherst, N.S.; G. Douglas, Amherst, N.S.; J. F. M. Stewart and C. E. A. Goldman, Toronto.

### Licenses for Sailing Vessels.

The following order in council was passed May 11, providing regulations for sailing ships leaving Canadian ports:—

1. No sailing ship registered in Canada shall, after May 11, 1918, start on or make any voyage other than a voyage from one port in Canada to another port in Canada, unless a license therefor has been granted to or in favor of the owners or charterers of such sailing ship.

2. The committee of persons appointed by the Minister of Marine and Fisheries under the provisions of the order in council of March 11, 1916, respecting the licensing of steamships exceeding 500 tons gross tonnage, shall have power to grant the license required by the next preceding paragraph. Licenses may be general with reference to any such sailing ship and its voyages, or may be special with reference to a particular voyage.

3. The owners, charterers, and master of any sailing ship violating the provi-

## Test of Electric Welding for Shipbuilding.

A report of the purposes and possible benefits of the ship welding test now being conducted by the United States Emergency Fleet Corporation, under the direction of A. J. Mason, has been made to C. Piez, Vice President of the corporation. Following are the principal portions of the report:—

The committee, of which Prof. C. A. Adams is chairman, has been enlarged and is active in bringing to bear all the knowledge and apparatus available. Electric welding in its various phases has for years been employed in shipyards and in the arts generally, but for a number of reasons the work has been confined to odd jobs and repairs. The proposal to extend its use to the major part of ship construction has met with gratifying approval from the shipbuilder. It remains for us through this large test to demonstrate its economy in time and money and its adequacy to build a staunch ship. The purpose of this test is to demonstrate these advantages—to do it in such a way that all may see and contribute, and finally to test the structure itself so completely that there will follow a heart-

pieces to fit on the ways. There lies in the above items an excellent likelihood to save a month's time in construction and a saving of no less than \$40 a ton in the cost of steel structure, at least \$100,000 a hull on a 10,000-ton vessel.

Briefly the programme is to assemble a hull rapidly by spot welding, tacking the ship together much as a tailor bastes his work in assembling a suit of clothes. The structure then becomes a house favorable for work in all weather, and at night, in which the completion of the ship may go on. After the material is thus assembled and fastened with spot welds, so that it is sufficiently strong to hold its shape, the work is completed by arc welding all seams, to insure strength and render the work watertight. Roughly we expect the spot welds to be about 10 in. apart. One quarter of the structure will be riveted and the other three fourths welded, so that the tests of strength will afford a basis of comparison.

Electric welding offers a great field for lightening a ship. In this design various views of this opportunity will be tried. The field here is very great—ultimately



Steel cargo steamship War Bee, built by Nova Scotia Steel & Coal Co. for British Government.

sions of these regulations shall be guilty of an offence and shall be liable upon summary conviction to a fine not exceeding \$5,000, and the sailing ship with respect to which such offence was committed shall be subject to forfeiture.

The order in council, P.C. 1184, passed Apr. 30, 1917, has been cancelled.

The committee referred to in the above order, consists of the Deputy Minister of Marine, chairman; Deputy Minister of Naval Service, the Deputy Minister of Trade and Commerce and the Commissioner of Customs.

The Troja Steamship Co., Ltd., the incorporation of which, with office in Montreal, was announced in our last issue, was formed chiefly for the purpose of taking out a charter for the operation of the s.s. Troja, built recently by Thor Iron Works, Ltd., Toronto, for Norwegian interests. Reports indicate that the vessel is to be requisitioned by the Dominion Government and placed in service. She was built originally under an order from James Playfair, President and General Manager, Great Lakes Transportation Co., Midland, Ont., and sold subsequently to a Norwegian party resident in the U.S.

whole and unanimous belief in the method. The test itself will take the form of building part of a hull at the Federal Shipbuilding Co.'s plant at Newark.

It has been necessary to design a ship to suit the material available, without encroaching on that needed for the regular ship construction at the plant. This has been done. The hull will have the outline, dimensions and strength conforming to the ships the Federal Co. is building. It has been thought best to conduct the work at a site apart from the shipways, so as not to interfere with that programme.

A 10,000-ton ship, costing \$2,000,000, now costs but \$70,000 to rivet. It must be plain that if electric welding only promises to modify this amount there would be no very substantial gain. Splendid benefits we all feel do offer themselves in the possible change in the whole regime of shipbuilding. Our test has in view abolishing or greatly diminishing: 1. The railway journey from rolling mill to fabricating plant when the latter is not at the shipyard. 2. The template-makers' work. 3. The markers' work. 4. The punching. 5. Much of the work of the fitters and bolters who flog and pull the

10% of the steel may be eliminated. One derrick will bring material and the other derrick will support the spot-welding yoke, whose function is to tack the material together, fastening the plates either to the frames or to the adjoining plates. If one visits the ways at any shipyard it becomes obvious that at any time only a portion of the men are for the moment at work. This is unavoidable under the present system. We hope to establish a plan of assembling with more continuity and less waiting of one another. Only a fifth of the men on a hull are riveters. The spot-weld yoke will forthwith pull the parts to place with a much vigorous agency than flogging and pulling to place by numerous bolts, now done by the other four-fifths.

The problems of fitting in place the parts of a hull are almost wholly problems arising out of the necessity to make a number of little holes in a plate made by one man at one time and place match a number of little holes made by another man at another time and another place. Once all holes are left out of the material all parts fit. The creeping and kindred problems so perplexing to the shipbuilder disappear. Every plate becomes a closer.



Every plate justifies itself.

An adequate system of testing the work when done is under consideration. The primary test will consist of filling the hull with water and shifting the points of support under continual and close scrutiny. As one quarter of the whole will be riveted in the normal manner, there will be always a gauge of comparison with that portion which is welded. Likewise there will be a chance for comparison of the two forms when subjected to abuse by pumping with rams and in various other ways.

other shipping facilities which the Government is endeavoring to establish at Halifax.

While it is natural that Halifax citizens should feel somewhat nervous regarding the handling of vessels containing high explosives within the harbor, it should be remembered that these vessels sail into ports in Europe, which are most crowded, with less room for the handling of vessels, and therefore much more risk of accident, and yet without casualty. It is evident that if no vessels containing high explosives were allowed to enter Halifax har-

### Merchant Service Dress.

A majority of a committee appointed by the British Board of Trade has recommended a national standard uniform for the British mercantile marine, as follows:

The officer's cap to be of blue cloth, and the badge oval on a dark blue background, with a center medallion bearing an anchor. Embroidered gilt leaves to surround the medallion, which would be surmounted by a naval crown. The King, it is suggested, should be asked to sanction the naval crown for the exclusive use of the mercantile marine, as the Admiralty is willing to transfer its use to them.

Right to wear the uniform to be limited to holders of Board of Trade certificates and to surgeons, pursers and cadets or apprentices, as well as uncertificated junior officers.

It is argued by two members who sign minority reports that the change cannot be carried out during the war, and that after peace is declared officers will prefer the old companies' uniforms.

### Requisition? Charter Rates on U.S. Vessels.

The U.S. Shipping Board has issued an order providing that the "bare boat" charter rate for all steamships under the U.S. flag, requisitioned under Act of Congress of June 15, 1917, shall be, as follows:—

Cargo ships, including tankers, up to and including 11 knots, per deadweight ton per month . . . . .	\$3.65
For each knot or part of a knot over 11 knots . . . . .	.50
Passenger ships, up to and including 11 knots per ton gross register per month . . . . .	\$5.25
For each knot or part of a knot over 11 knots . . . . .	.50

These rates apply to all such vessels now operating under the "bare boat" form of requisition. Those operating under the "time form" of requisition charter are not affected.

**Electric Welding for Shipbuilding.**—Canadian Railway and Marine World for June mentioned some experiments which had been authorized in the U.S. respecting the extensive use of various forms of arc welding for shipbuilding purposes. Advices from England state that the first

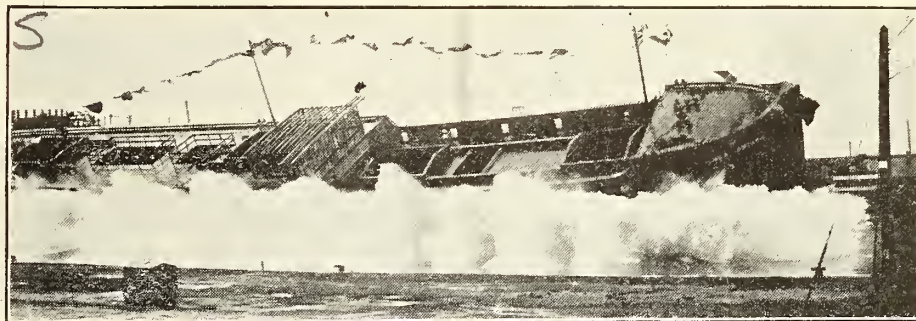


Wooden cargo steamship War Ontario, for British Government, just prior to launching by Toronto Shipbuilding Co.

### Munition Vessels and Halifax Harbor.

The Mayor of Halifax complained to the Minister of Marine recently that vessels loaded with high explosives were constantly entering and leaving Halifax harbor, and requesting that in view of the disastrous explosion of Dec. 6, the Naval Service Department be ordered not to permit any more vessels so loaded to enter the harbor. Subsequent to the disaster mentioned, the then mayor communicated with the Minister of Marine to the same effect, and received a reply indicating that his communication was virtually a request that no convoys or munition ships should thereafter use the port of Halifax, and doubting whether he realized the inevitable consequences that would result from the policy he advocated. It was pointed out that the strategical position of Halifax plays an important part in the prosecution of the war, and the view that no munition ships should be laden or unladen at any pier in the port would undoubtedly retard very seriously its successful conclusion, and have a considerable effect on the future of the port. The Government's policy was clearly stated that every possible precaution must be taken to ensure safety and to prevent any danger or disaster from munition or other ships entering the port, such precautions of course being equally essential in the lading and unloading of dangerous cargoes. If the request were acceded to, it would mean the removal of the Atlantic naval base from Halifax, and the building up at some other port of the repair and

bor, traffic there would cease. The disaster of December, 1917, was of course a lamentable one, but it must be remembered that it was the result, chiefly, of a disregard of rules and regulations provided for the safeguarding of the port, and therefore not an inevitable corollary of such traffic using the port. No doubt, with the extra precautions being taken there, and the more efficient superintend-



Launching of wooden cargo steamship War Ontario, by Toronto Shipbuilding Co.

ence of the port and on the handling of vessels generally, there is little room for fear of any repetition of the disaster, and it is possible that the request for the removal of that traffic will not be persisted in. The projects at present in view for the development of Halifax are such as to give those immediately concerned every hope in the future of the port and nothing should be done derogatory to the port's interests, nor which would render nugatory the efforts for its rehabilitation.

steel vessel built without rivets, so far as known, has just been launched on the south coast there, the plates being fused together by electric welding in one process. No details have been received, but it is stated that the U.S. Shipping Board has kept in close touch with the experiments. Electric Welding & Shipbuilding Co. of Canada, Ltd., was incorporated recently at Montreal to carry on shipbuilding and to use electric and other welding processes.



## Halifax Drydock and Shipbuilding Plant.

Canadian Railway and Marine World for July contained all the particulars then available in reference to the shipbuilding plant to be built at Halifax, N.S., by Halifax Shipbuilders, Ltd., since which the following additional information has been obtained:—

On May 24 the Minister of Public Works reported to the Privy Council as follows:—In the disastrous explosion of a munitions ship in Halifax harbor on Dec. 6, 1917, the dry dock which was built by the Halifax Graving Dock Co., Ltd.,

for the expropriation and for the direction and control, for reasons declared to arise out of the present war, of the business, property and rights of, or connected with the operations of the dry dock, and that the question of compensation for the property, etc., be submitted to the Exchequer Court for adjudication. This report and recommendation was approved by the Privy Council on May 27.

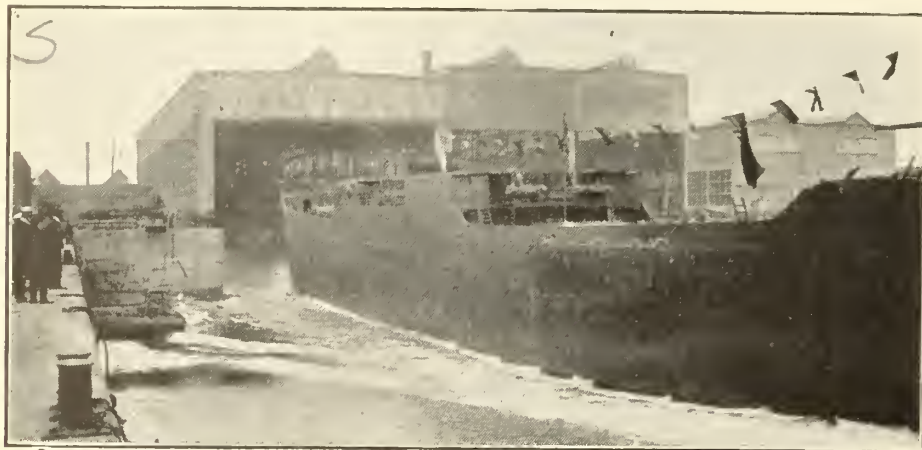
On June 4, the Minister of Public Works reported to the Privy Council that, in accordance with the order in council of

the Halifax drydock property and plant to the company for one year at a rental of \$62,500, the company to pay all taxes, etc., and to agree to purchase the drydock property and plant outright at any time during the term of the lease for \$1,250,000.

On June 24, the Minister of Public Works reported to the Privy Council that it was necessary for the company's purposes that a parcel of land in the center of the site should also be expropriated, and that \$11,484, which he considered a fair and reasonable compensation, be tendered for the same. This recommendation was also approved.

The Halifax drydock, which, as stated above, was completed in 1889 by the Halifax Graving Dock Co., Ltd., with headquarters in London, Eng., was given a subsidy of \$10,000 a year for 20 years, commencing in 1890. Other subsidies, aggregating \$20,000 a year, were obtained from the British Government and the city of Halifax. The dock is 585 ft. long, 102 ft. wide at coping, 72 ft. wide at bottom, and the depth of water on sill at ordinary spring tides is 30 ft. After the dock was wrecked by the explosion on Dec. 6, 1917, the Dominion Public Works Department took over the work of repairing and reconstructing it, the work being done directly by the department, which up to May 29, had expended about \$60,000 thereon, under the superintendence of Alex. McMurray, engineer in charge. As soon as arrangements were made to expropriate the property and lease it to Halifax Shipbuilders, Ltd., the department discontinued work on it.

Tenders were received by Halifax Shipbuilders, Ltd., to July 3, for work connected with the establishment of the shipbuilding yard and covering the piling and grading of three shipways, each 530 ft. long; the excavating, filling and grading of the shipyard for buildings, tracks and storage; excavation for Canadian Government Railways relocation and grading, track laying and ballasting same, equal to about a mile of double track railway; construction of 580 ft. of concrete sea wall and back filling same; construction

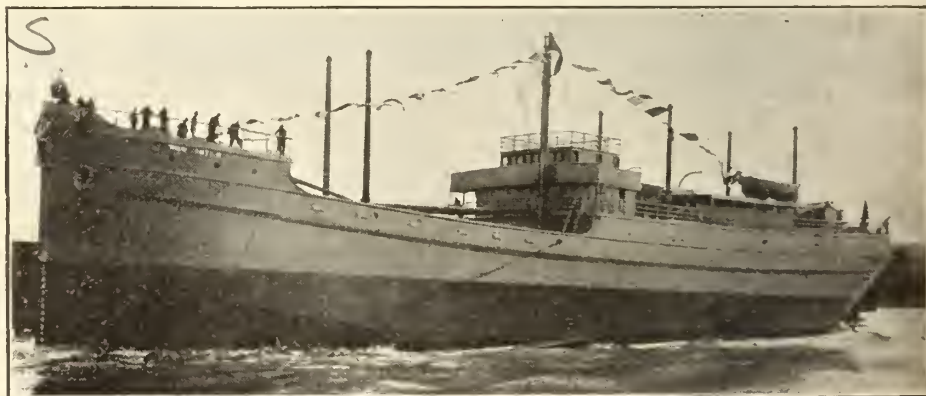


Launching of steel cargo steamship War Duchess for British Government, by Canadian Vickers, Ltd.

and completed in 1889, was badly damaged and the repair shops and plant connected therewith were practically destroyed. In view of the great importance of Halifax as a naval base, and of the fact that the port is very largely used by war ships and war craft of all kinds and by the allied governments' transports, and also as a rendezvous for ships needing convoy, it is urgently necessary for the purposes of the war that all facilities for the repairing of ships should be effectively available with the least possible delay. In order to attain this object, an agreement was entered into with the owners of the dock, in which they agreed to proceed with the reconstruction of the dock and to furnish \$111,000, which was the amount of the insurance, towards the cost, provided the government would supply the balance of the cost of reconstruction by way of a subsidy, relieving the government of any alleged liability, as well as responsibility for the operation and maintenance of the dock.

The progress made by the company in the reconstruction of the dock has not been satisfactory and in view of the urgency of restoring Halifax to its former status as a naval base and rendezvous during the war, and of preparing it to meet the greatly increased needs of shipping after the war, it is necessary that the government take immediate measures to enter into possession of the dock at once and to proceed with its reconstruction. From reliable information it would seem that \$1,100,000 is a fair estimate of the value of the dock as it stands at present, and the Minister recommended that authority be given to offer this sum to the Halifax Graving Dock Co. for the property as it stands at present, including all work of reconstruction done up to the present, and that if this offer is refused, authority be granted, pursuant to the powers conferred by the War Measures Act, 1914, and all other powers vested in the Governor in council,

May 27, the drydock, etc., had been expropriated and vested in the Crown. He further reported as follows: "The Halifax Shipyards, Ltd., has been formed to carry on shipbuilding and repairing on a large and modern scale, and intends proceeding at once with the erection of the necessary plant and equipment, on which it contemplates an expenditure of about \$3,000,000. The company has acquired the property immediately adjoining the drydock, known as the Acadia Sugar Refinery



Wooden cargo steamship War Tatla, built by Western Canada Shipyards, Ltd., Vancouver, B.C.

property, where three shipbuilding berths will be laid down, upon which steel ships of approximately 10,000 tons may be constructed. The first of these, the largest ever built in Canada, will be ready for service inside of 15 months. It is considered advisable, under existing circumstances, when the provision of additional tonnage is so urgent and important in the public interest, to lease the property to the Halifax Shipbuilders, Ltd., to be operated by it in connection with its new enterprise. The Minister therefore recommended that authority be given to lease

of reinforced concrete retaining wall along the right of way of the railway relocation, and the extensions to sewers, water mains, etc. The work will require approximately 270,000 cu. yds. of earth and rock, dry excavation, and 20,000 cu. yds. of concrete. It was stated subsequently that the contract has been awarded to the Bedford Construction Co., successors to Cavicchi & Pegano, general contractors, who were to commence work immediately, and that it was anticipated that the first of three shipbuilding berths will be completed within four months.



The Minister of Marine has, we are officially advised, agreed to give the company an order for three steel cargo steamships of approximately 10,000 tons d.w. capacity each, when the yard is ready to start work.

### Wreck Commissioner's Enquiries and Judgments.

Enquiries have been held recently into the following casualties, and judgments delivered:—

#### Stranding of s.s. Hochelaga.

Held at Sydney, N.S., before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Lieut. H. C. Owen, R.N.R., and Capt. A. J. Morrison, as nautical assessors. The s.s. Hochelaga is owned by the Dominion Coal Co. and grounded on the Newfoundland coast, June 6. The court found that the master, George Tudor, committed a grave error of judgment in assuming a position which he could not exactly define, owing to atmospheric conditions and the absence of a log to determine the distance run, the log having been lost on the previous night. From the loss of the log he presumed to establish the speed of the ves-

overtaken by fog, and for not stopping the vessel, instead of merely stopping the engines, just prior to the stranding, and was reprimanded very severely and cautioned to exercise all prudence in future, and not assume that because previous voyages were effected successfully, the same results must always be expected. The court recommended that it be made an inflexible rule that the master, or the company, issue written and printed instructions that the officers on watch be obliged to take observations of whatsoever nature and register same as soon as possible, and that the navigation of the vessel should not be a one-man occupation, but one in which all officers are interested, and they should be called upon to check each other's calculations as to compasses, charts, speed, etc., which, after all, is but an elementary recommendation.

#### Stranding of s.s. Aikoku Maru.

Held at Victoria, B.C., before Capt. J. D. Macpherson, British Columbia Wreck Commissioner, assisted by Capt. D. S. Jones-Evans and A. O. Cooper, as nautical assessors. The court came to the conclusion that the s.s. Aikoku Maru stranded on Kelp Reef, Haro Straits, B.C., owing to a combination of unusual and unavoid-

English speaking member, conveyed messages between the master and the pilot, and there can be no question that on him must be placed the blame for having named the deviation easterly instead of westerly, though, without doubt, unintentionally.

The vessel grounded very easily, owing to the skilful handling of the pilot, and released herself after about eight hours, with comparatively slight damage.

#### Stranding of s.s. Sewalls Point.

At Halifax, N.S., July 16, an investigation was held into the causes of the stranding of the s.s. Sewalls Point, during a heavy fog at Five Fathoms Harbor, near Halifax, July 1. After hearing the evidence, the court held that the master, Capt. R. M. French, was in default, through over confidence, and a copy of the finding was sent to the British Board of Trade.

### The Consolidated Whaling Co. Ltd.

The incorporation of this company was announced in a recent issue, with a capital of \$2,500,000 and head office in Toronto. The operating office is in Victoria, B.C., and S. C. Ruck is General Manager. The company has taken over the Victoria Whaling Co., with fisheries and factories at Sechart, Kyuquot, Rose Harbor and Naden Harbor, B.C., and also the American Pacific Whaling Co. and North Pacific Sea Products Co.

The Victoria Whaling Co. owned 8 steam whalers and one vessel of 850 tons, used as a tender. The whalers are named Black, Blue, Brown, Green, Orion, St. Lawrence, W. Grant, and White, and the tender is named Gray. The whalers are about 92 ft. long, 16 ft. beam, and are equipped with triple expansion engines of about 300 i.h.p.

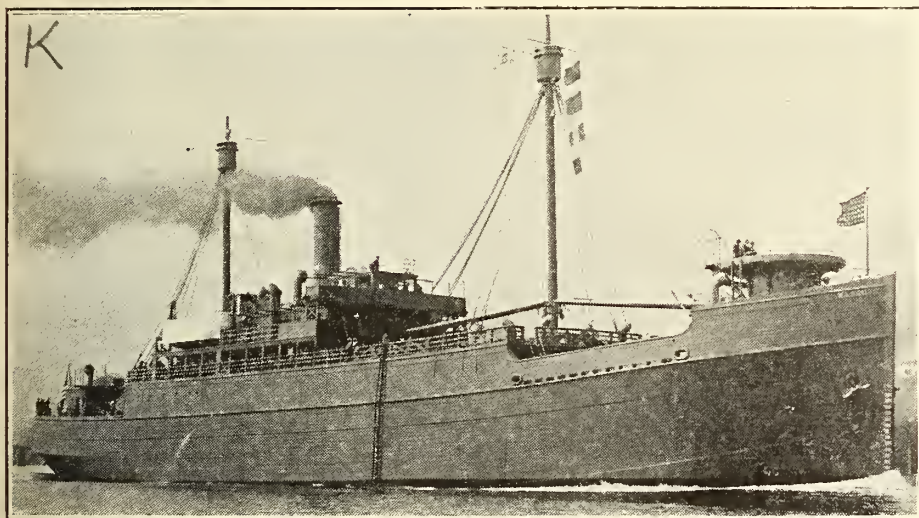
The American Pacific Whaling Co. has a station at Bay City, Wash., from where four vessels are operated, all of a similar type, and named Aberdeen, Moran, Pater-son and Westport, and another station at Akutan in the Aleutian Islands, from where three vessels, the Kodiak, Tangynak and Unimak are operated. These three vessels are all somewhat larger than the other vessels mentioned, one, the Tangynak, being driven by twin screws. All the U.S. vessels burn fuel oil and the Canadian ones coal.

The company purchased recently the s.s. Elihu Thomson, 1,000 tons, from the Pacific Cold Storage Co., Tacoma, Wash., and is having it fitted out with cold storage compartments with capacity of about 600 tons, for the conveyance of whale meat from the northern station to cold storage at Tacoma. The auxiliary powered schooner Halcyon is also owned by the company. She is 72 ft. long and is fitted with gasoline engine of 100 h.p. She is engaged in halibut and cod fishing at the Aleutian Islands.

### Canadian Express Co. Withdraws from United States Business.

Jno. Pullen, President, Canadian Express Co., issued the following circular to officers and agents in the States of Maine, New Hampshire, Vermont and Michigan, on June 28:—

The United States Railroad Administration having taken over for operating purposes certain of the lines of the Grand Trunk Ry. of Canada located within the U.S., viz.: Portland, Me., to Norton Mills, Vt.; Lewiston Jct., Me., to Lewiston, Me.; South Paris, Me., to Norway, Me.; and Port Huron, Mich., to Detroit, Mich., over



The United States Steamship Wasco.

The Wasco, which was completed June 8, was the first of the U. S. Emergency Fleet Corporation's orders to be turned out at Portland, Oregon. She is 286 ft. long and 46 ft. wide and sailed June 10 on her first voyage.

sel from the records of previous voyages. He was aware of uncertain currents existing, both as to direction and velocity, and the court considered that his position should have been checked by a cast. Also when the shouts of fishermen were heard, instead of only stopping the engine, the vessel should have been brought to a stop by full speed astern. It is fortunate that the vessel was not lost. The master's evidence was somewhat contradicted by the first mate, but corrected afterwards, which created a better impression on the court. The court felt that in view of the master's successful career, and relying on the evidence that in other circumstances he has attended seriously to his navigation duties, it could deal leniently with him. It was also evidenced that some measure of prudence was taken, though unfortunately it was not of the thoroughness that the situation demanded, but a clever feat of seamanship was performed after the grounding, in order to bring the vessel to a somewhat sheltered beach to wait for assistance. He was found in default for not taking a sounding when off Cape George; for not sounding when

able circumstances, unfortunately all working in the same direction, the result of which, under the then conditions, was inevitable. These circumstances were:—a very strong ebb tide acting on the vessel's starboard bow, a grave error in the naming of the deviation, and a dense fog. No single one of these would have led to the casualty, but the three combined were fatal, more especially as the first two erred in the same direction. In the court's opinion, after the fog set in, the vessel was navigated in an efficient and proper manner, and with the one exception of the maximum speed being maintained, which the court considered, under the circumstances, not only excusable, but essential, every regulation was strictly adhered to, and an ample and efficient lookout was kept. No blame was therefore attached to J. C. Foote, pilot. So far as the master, T. Yoshira, was concerned, the court saw no reason to blame him. He seemed to have attended to his duties in an intelligent and efficient manner. No other member of the crew was held worthy of blame, with the exception of M. Machikake, an apprentice, who, as the only



which the Canadian Express Co. now operates the express service, and having entered into a contract with the American Railway Express Co. giving that company the exclusive privileges of conducting express service thereon, effective July 1, 1918, the offices of the Canadian Express Co. in the states named will be closed at midnight June 30. On July 1, the express operations will be carried on by and in the name of the American Railway Express Co. Suitable instructions will be issued by the officers of that company as soon as possible. Meanwhile, until such instructions have been received, the present employees of the Canadian Co. will continue to perform their duties as usual, using the present books and forms until new ones have been supplied.

The Canadian Express Co.'s accounts must be balanced and closed as of June 30, and new accounts or books started for the new company July 1. All equipment and office supplies are to be transferred to the American Railway Express Co. on July 1. Agents will make a special list of all undelivered goods on hand at midnight June 30, showing charges thereon, and send same to the superintendent.

At Buffalo, N.Y., Suspension Bridge, N.Y., Port Huron, Mich., and Detroit, Mich., where the Canadian Express Co. has heretofore been operated jointly with the American Express Co. or National Express Co., the offices will on, and after July 1, become exclusive offices of the American Railway Express Co.

The management of the Canadian Express Co. desires to take this opportunity of thanking its employees in the states named for their services, and to bespeak for the new company their co-operation.

### The Western Express Co. and U.S. Business.

The Western Express Co., which is owned by the Dominion Ex. Co. and which carries on express business on C.P.R. controlled lines in the U.S., has issued the following circular to employees:—

It is the wish of the Director General of Railroads that there shall be in the U.S., during the period of federal control of railroads, but one express company. To accommodate that wish, the Western Ex. Co. will, at the close of business on June 30, retire from the express transportation business for the period of federal control of railroads. A new express company will be organized, which will, as the Agent of the Director General of Railroads, transact the express business upon all the railroads in the U.S., commencing July 1. The management of the Western Ex. Co. has agreed with the management of the new express company to promote, in every way possible, the employment by the new company of the employees of the Western Ex. Co. It is understood that Western Ex. Co. employees accepting employment with the new company will retain their service records for participation in the pension system of the new company. The details of the transfer of the business and of the property will be set forth in a subsequent circular. The management of the Western Ex. Co. gratefully acknowledges your loyal support and co-operation which has enabled the company to establish a reputation for efficiency and fair dealing. The management has provided for employment by the new company of all employees wishing to accept such employment. The management hopes you will accept employment with the new company and that you will accord to the Director General through the new company, that same de-

gree of efficiency and that wonderful spirit of loyalty which the Western Ex. Co. has enjoyed, to the end that the public may be properly served and the desires of the Government may be fully realized.

We are officially advised that the above does not apply to Maine and Vermont, where the Western Ex. Co. will continue to operate over C.P.R. lines in Maine and Vermont, as hitherto.

### Among the Express Companies.

Canadian Ex. Co. employees are stated to have been granted an increase in wages, and a new time schedule. The new graded scale of pay is said to be \$100 a month after 5 years service.

The Board of Railway Commissioners has extended the express collection and delivery limits at Rossland, B.C., to include the portion on Earl St. from Fourth Ave. to the West Kootenay Power & Light Co.'s works.

A press dispatch from Washington, D.C., states that the operation of eight interstate express companies for January, resulted in a deficit of \$1,637,757. One company, the Southern Ex. Co., showed a profit, the operating income being \$89,630. The largest deficit was that of the American Ex. Co., \$752,645.

### Telegraph, Telephone and Cable Matters.

The Association of Railway Telegraph Superintendents is included in the list of associations which have been disapproved by the U.S. Railroad Administration, and for which no expenditures are permitted by any railway without special authority.

A board of conciliation has been appointed to deal with wages and working conditions of C.P.R. commercial telegraphers. Judge Scott, Perth, Ont., is chairman, N. W. Tilley, K.C., represents the company, and D. Campbell, Regina, Sask., the men.

The U.S. President has, by proclamation, taken over the operation of all telegraph and telephone lines throughout the U.S., as from July 31, and has placed them under the Postmaster General's control. Wireless telegraph and cable lines are not included.

The Great North Western Telegraph Co. has deposited plans, etc., with the Public Works Department, for laying and landing a submarine telegraph cable in the Straits of Juan de Fuca, the proposed landing being at the foot of Douglas St., Victoria, B.C.

M. H. Clapp, Superintendent of Telegraph, Northern Pacific Ry., St. Paul, Minn., and President of the Association of Railway Telegraph Superintendents, has been appointed Manager of the Telegraph Section of the U.S. Railroad Administration, reporting to C. R. Gray, Director of Operation, with office at Washington, D.C.

The Great North Western Telegraph Co. has opened offices at Grand Anse, N.B.; Abenakis Springs, Little Metis Beach, Manoir Richelieu, Perthuis station, Pointe au Pic and Woodlands, Que.; Bala Park, Chaffey's Locks, Dunnville, Dwight, Lake Joseph, Sellwood and Sparrow Lake, Ont.; and Alberta Beach, Alta.; and has closed its offices at Les Eboulements wharf, Que., Atherley, Ont., and Durban and Langruth, Man.

A few weeks ago certain charges were preferred against two operators employed by the Great North Western Telegraph Co. at Toronto, alleging wrongful use of the company's wires in connection with horse racing news. These men were ac-

quitted of fraud in the local court, but the company dismissed them. The telegraphers' union intervened and demanded that the men be reinstated, eventually serving the company with notice that unless they were unconditionally reinstated, a general strike of the employees would occur at 10 a.m., July 16. After some negotiations, the matter was adjusted by the re-employment of the men, and a strike was averted.

The Dominion Telegraph Co.'s 49th annual meeting was held at Toronto, July 10, when the report for the year ended June 30 was adopted. It was announced that payment had been made quarterly in advance, for the past 39 years, of the guaranteed interest at 6%, on the company's capital stock, by the lessees, the Western Union Telegraph Co., the lease being for 99 years from July 1, 1879. The assets are given as \$1,309,720.82, and the liabilities as \$1,017,490.10, the balance at credit of profit and loss being \$292,230.72. The directors for this year are: Sir Henry M. Pellatt, President; Aemilius Jarvis, Vice President; F. Roper, Secretary and Treasurer; G. W. E. Atkins, R. C. Clowry, E. Y. Gallaher, Sir John M. Gibson, and C. O'Reilly.

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Johnson & Higgins.—P. L. Roberts has been appointed Manager, Montreal Branch, Johnson & Higgins, average adjusters and insurance brokers, New York, with office in Board of Trade Building, Montreal.

The Canadian Ingersoll-Rand Co. has issued a catalogue of direct lift vertical air hoists, giving complete details, with illustrations, of the different types of valve used for various classes of work up to 5 tons capacity, the dust proof single acting, the dust proof air balanced, and the dust proof double acting. Complete tables are given, including one of the free air consumption of the hoists.

The Ohio Brass Co. has issued a booklet, "Guarding the Grade Crossings," which describes the national trolley guard, which consists of a wire mesh formed into an inverted trough mounted above the trolley wire. Among the illustrations are views showing installations on the Hull Electric Co.'s railway, London St. Ry., Sudbury-Copper Cliff Suburban Electric Ry., Toronto & York Radial Ry. and Toronto Ry.

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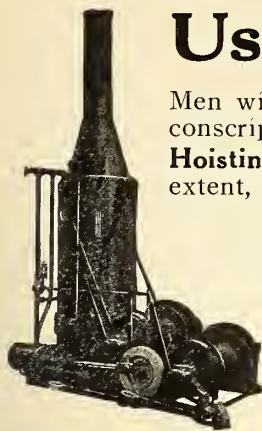
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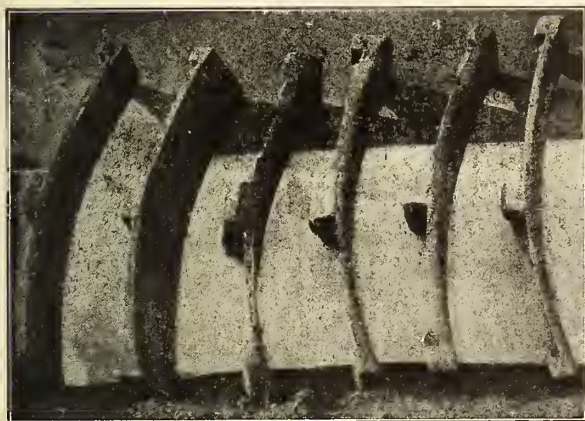
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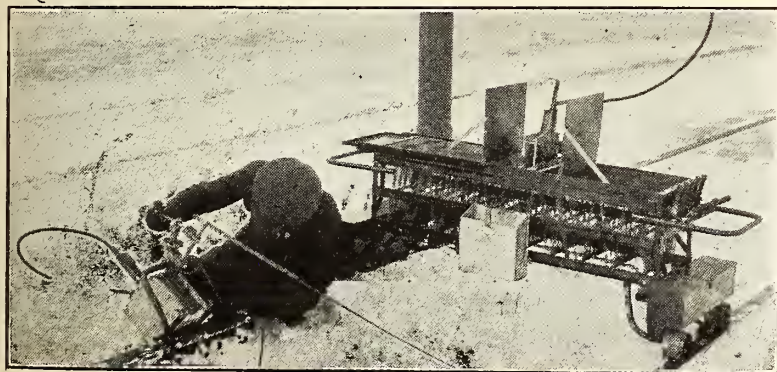
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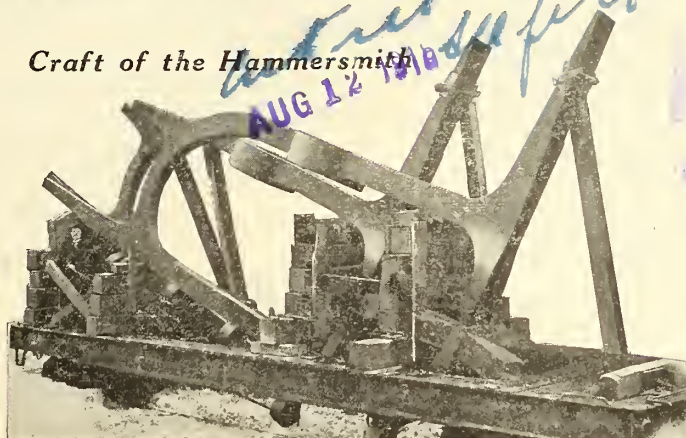
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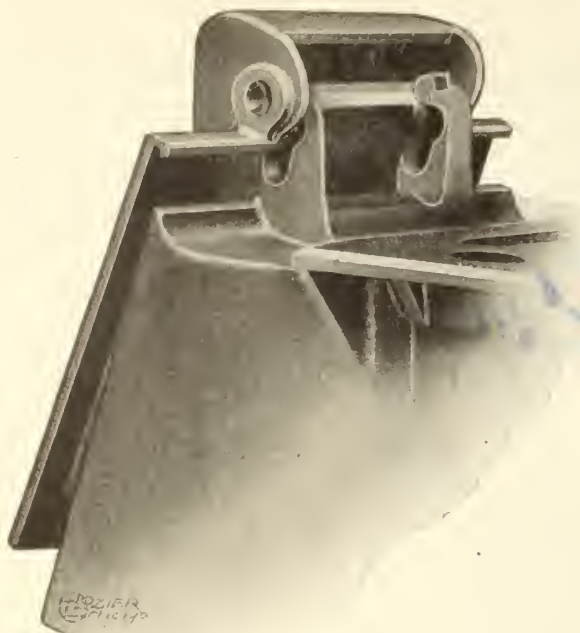


Length Overall  
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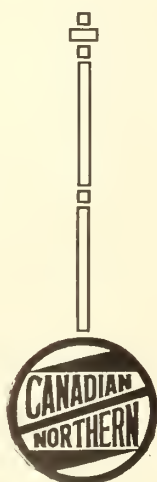
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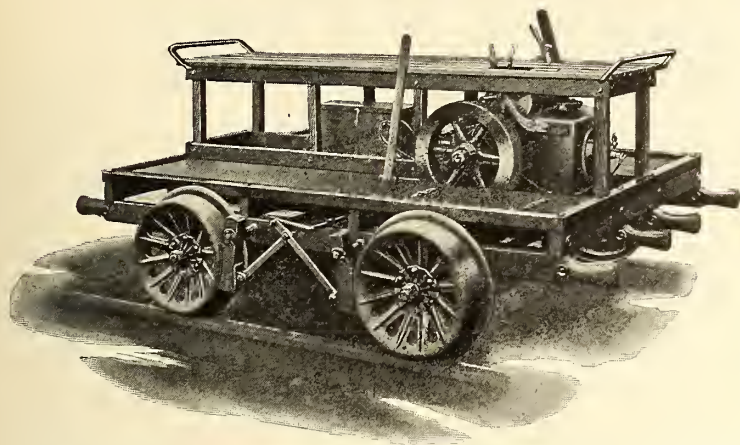
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# National Railway Motor Cars



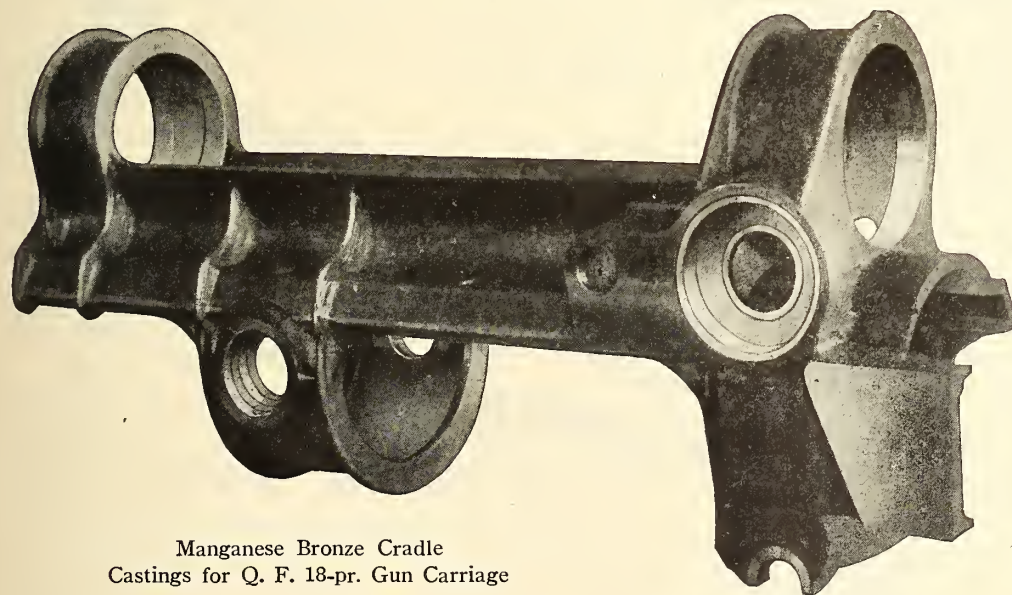
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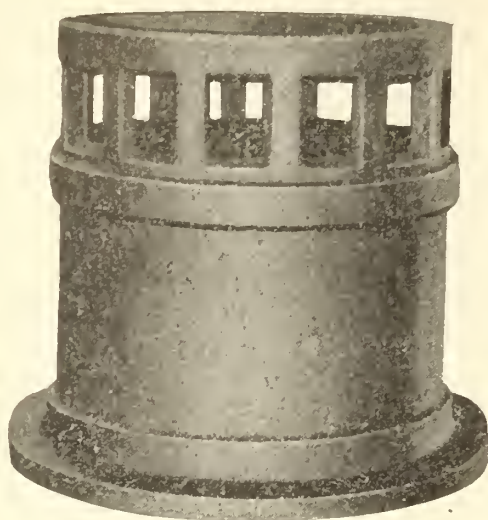
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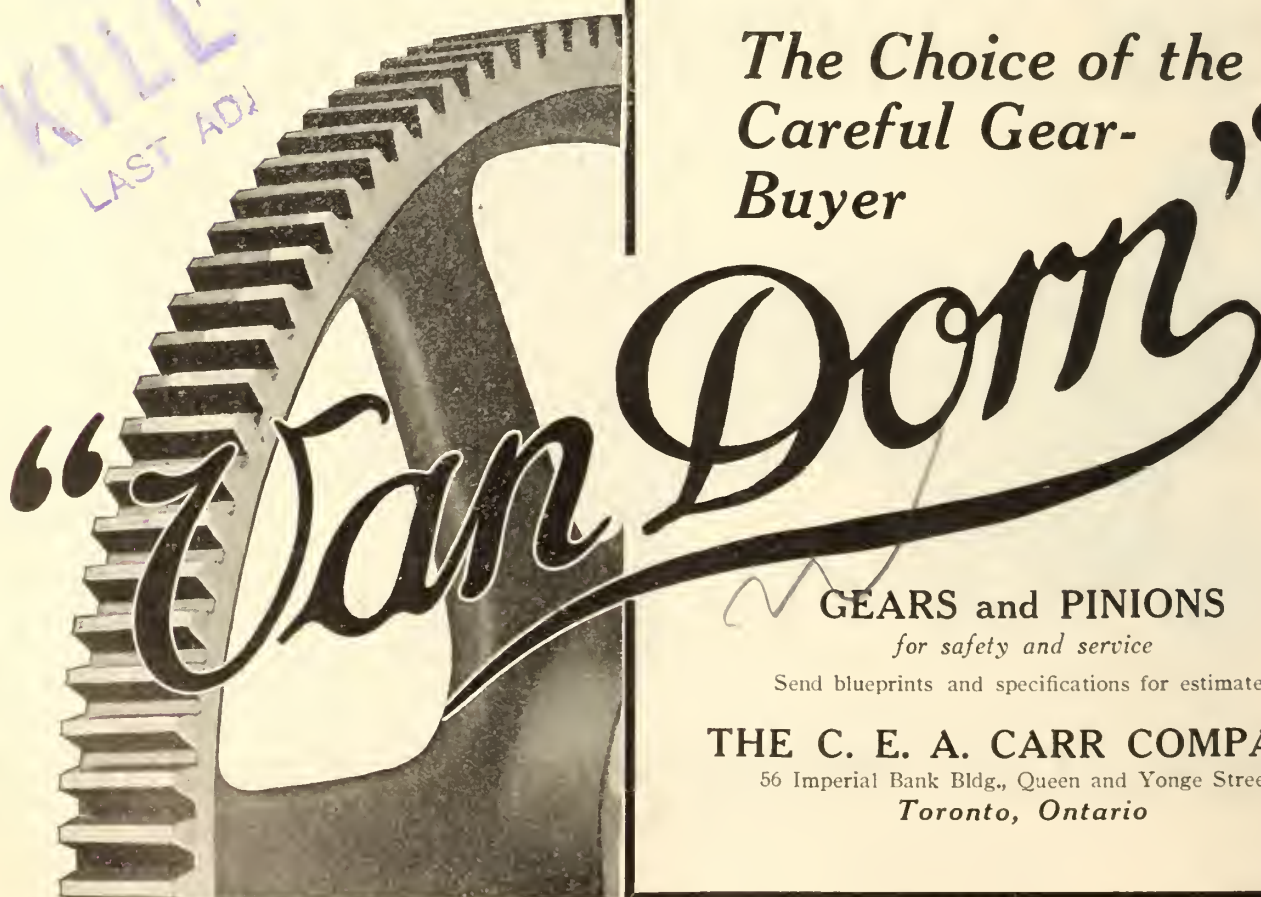
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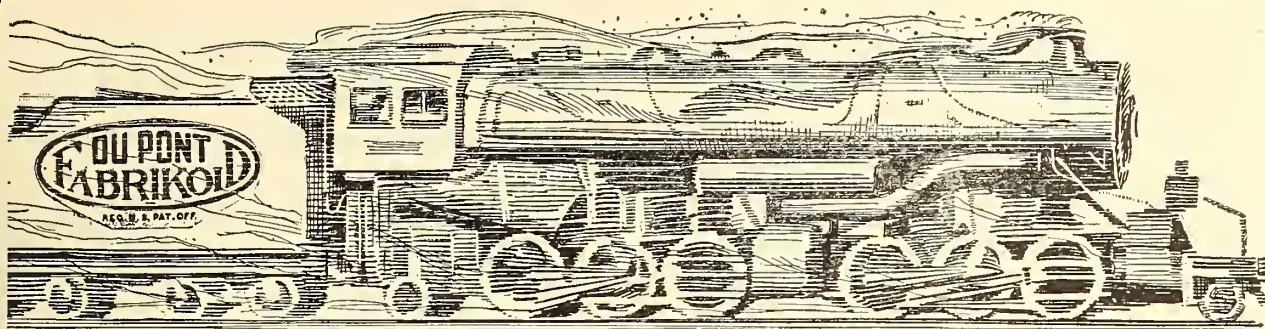


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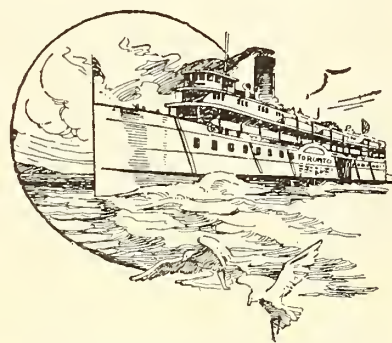
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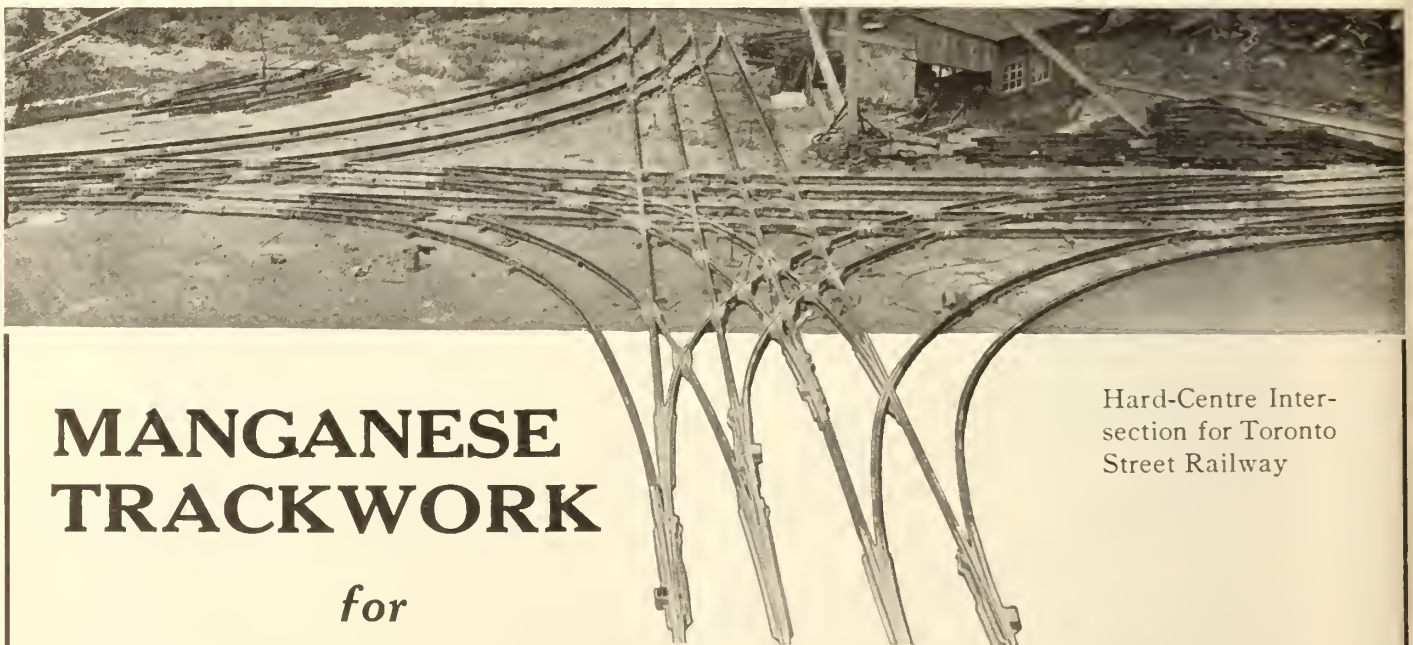
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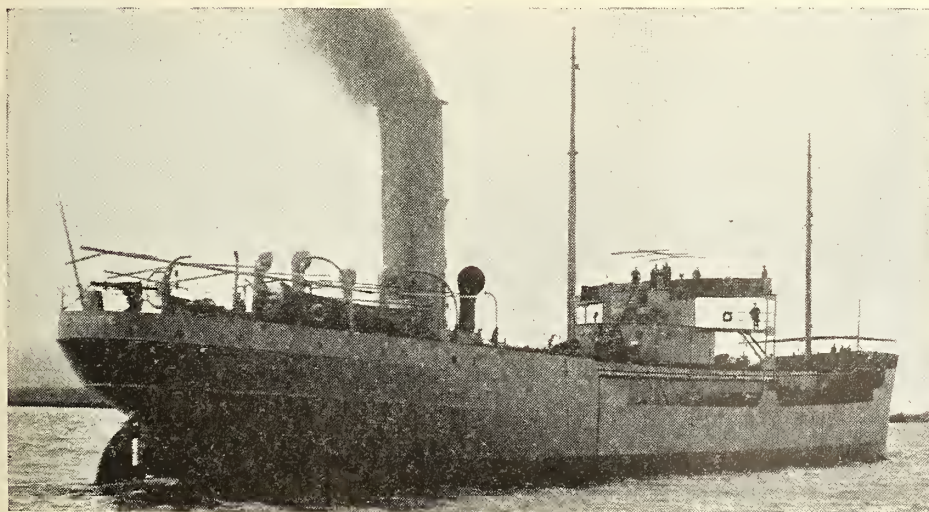
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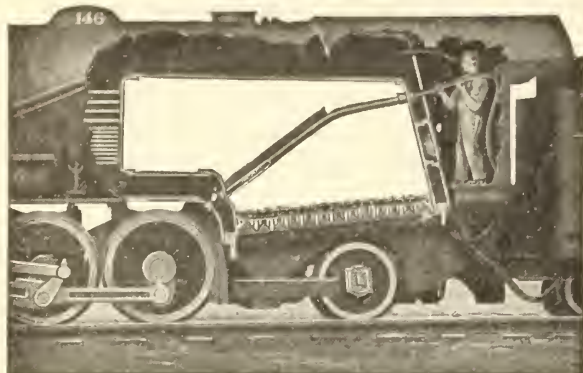
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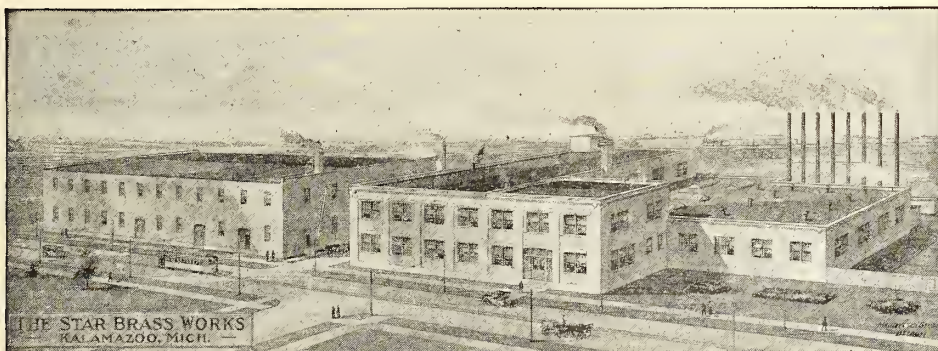
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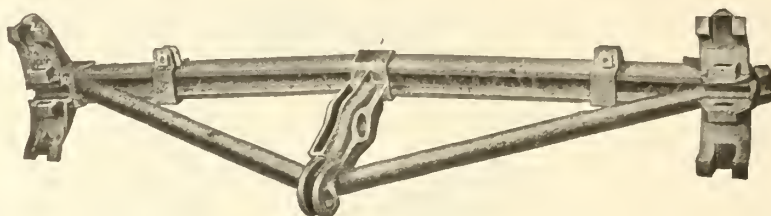
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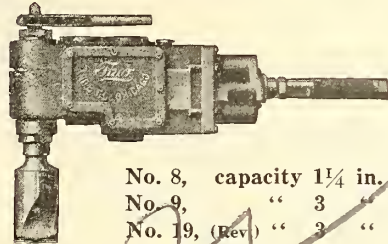




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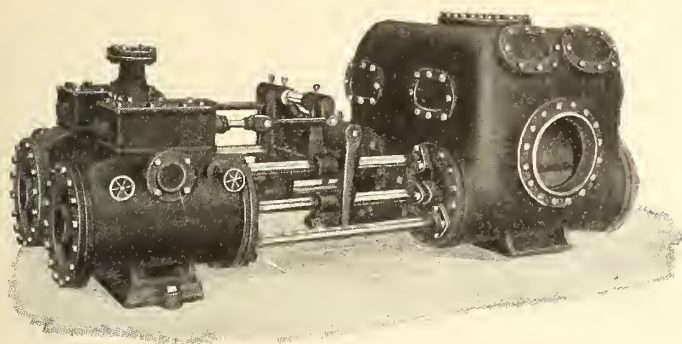
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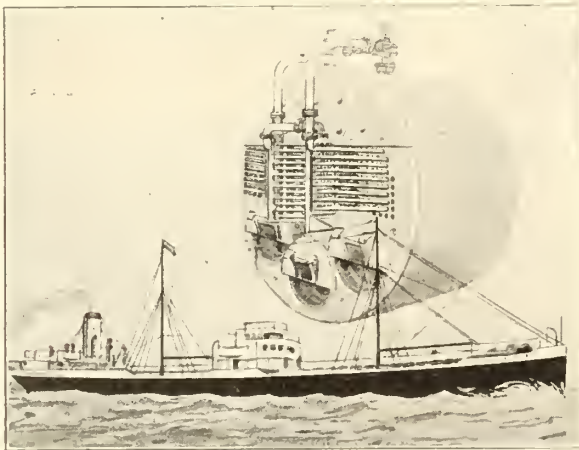
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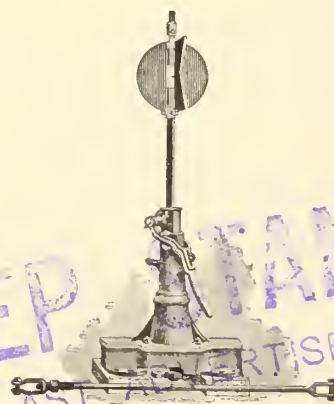
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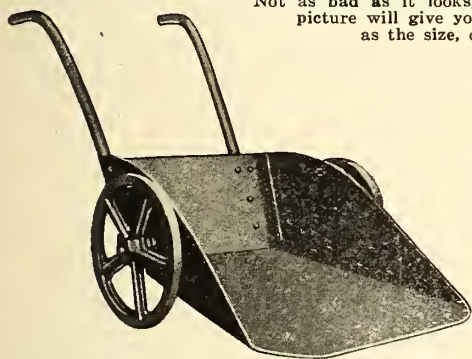
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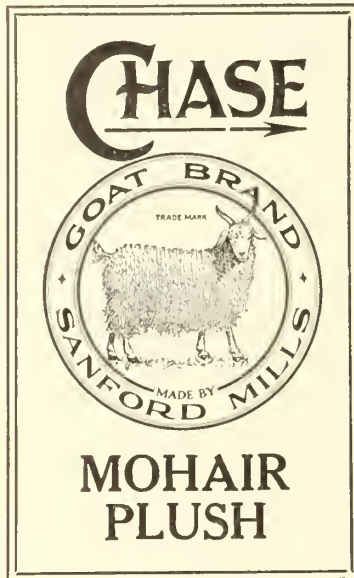
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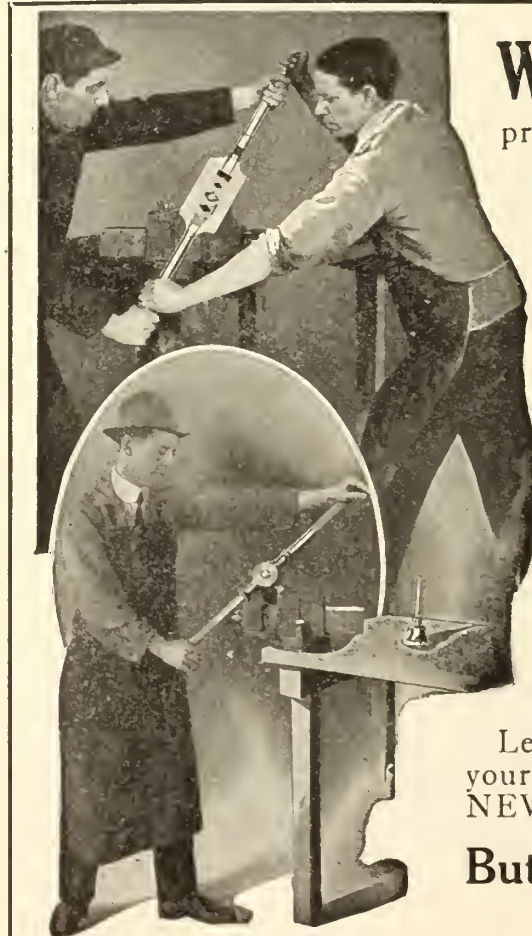
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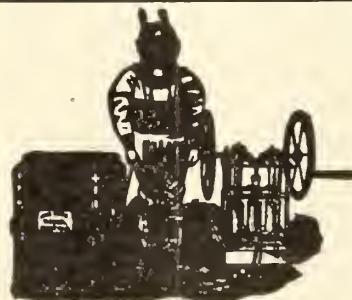
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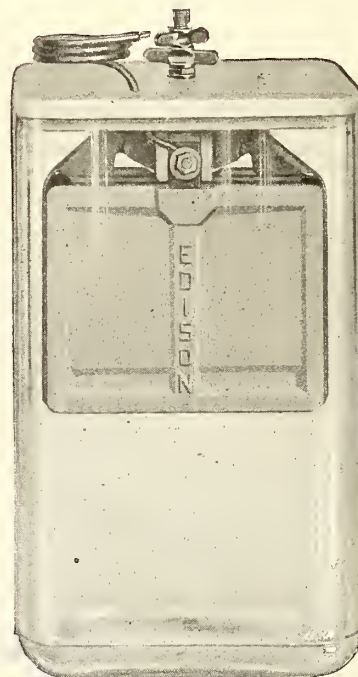
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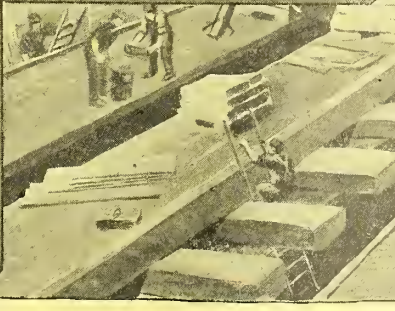
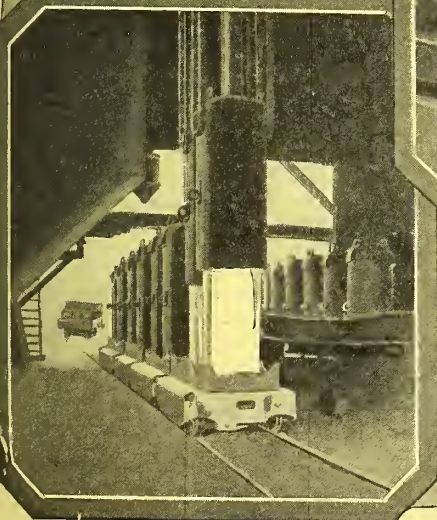
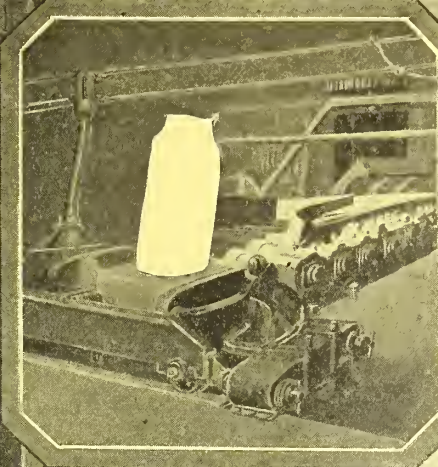
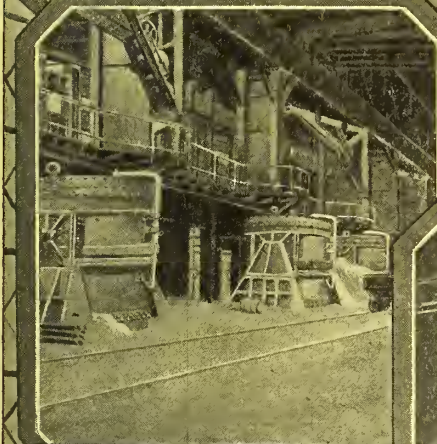
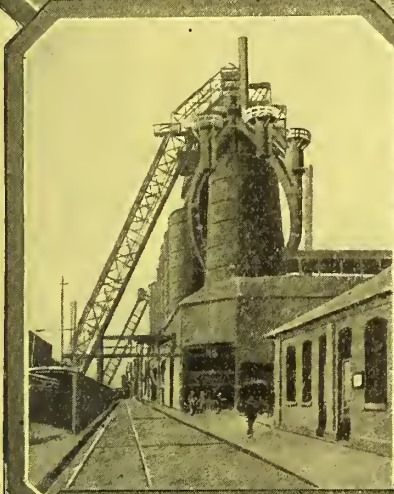
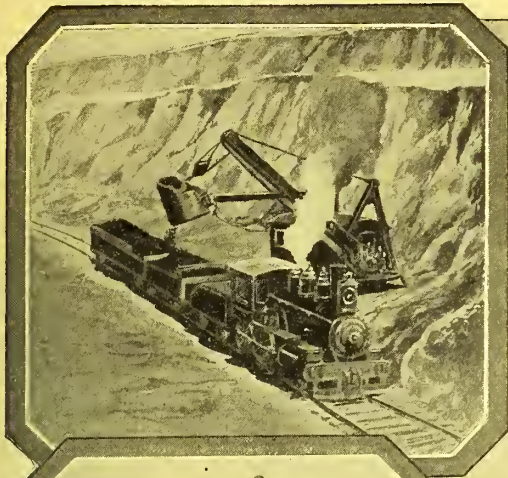
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*Quality First*



O-B Type N Lock Hanger

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O-B Lock Hangers do everything the regular hanger does and then go farther. They make every ear seat solidly.

The illustration shows their construction. The ear is turned up until it touches the metal bearing surface at the bottom of the hanger. Then it is tightened still further until it aligns with wire, pulling the stud down in opposition to the spring washer.

Since there is a tight joint between ear and hanger there is no see-saw action to destroy the thread.

For the same reason no moisture gets in to start corrosion. When the ear is worn it may be removed easily without scrapping the hanger too.

*There are various types of O-B hangers listed in Catalog No. 16 and Supplement No. 1. Either or both books sent free on request.*

**THE OHIO BRASS COMPANY, Mansfield, Ohio**



# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 247

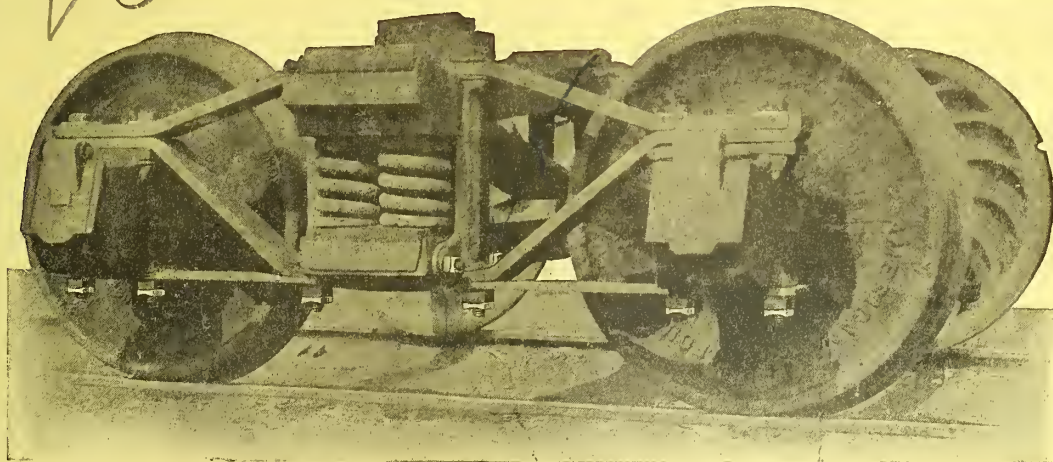
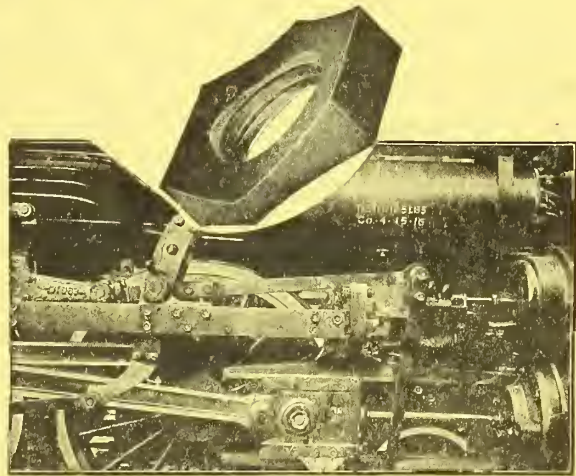
TORONTO, CANADA, SEPTEMBER, 1918

Subscription Rates, Page 395

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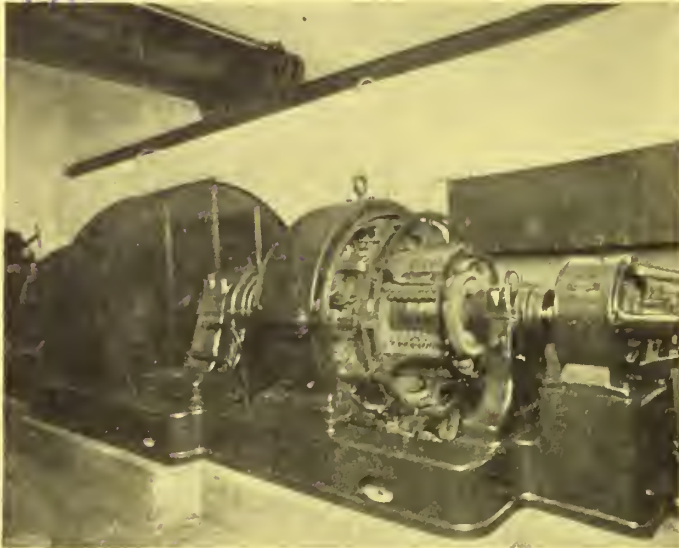
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Particularly successful in the operation of coal hoists, and other coal handling machinery, where the load is very irregular, with frequent high peaks and intermittent light loads.

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Anchor-  
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Which have stood the  
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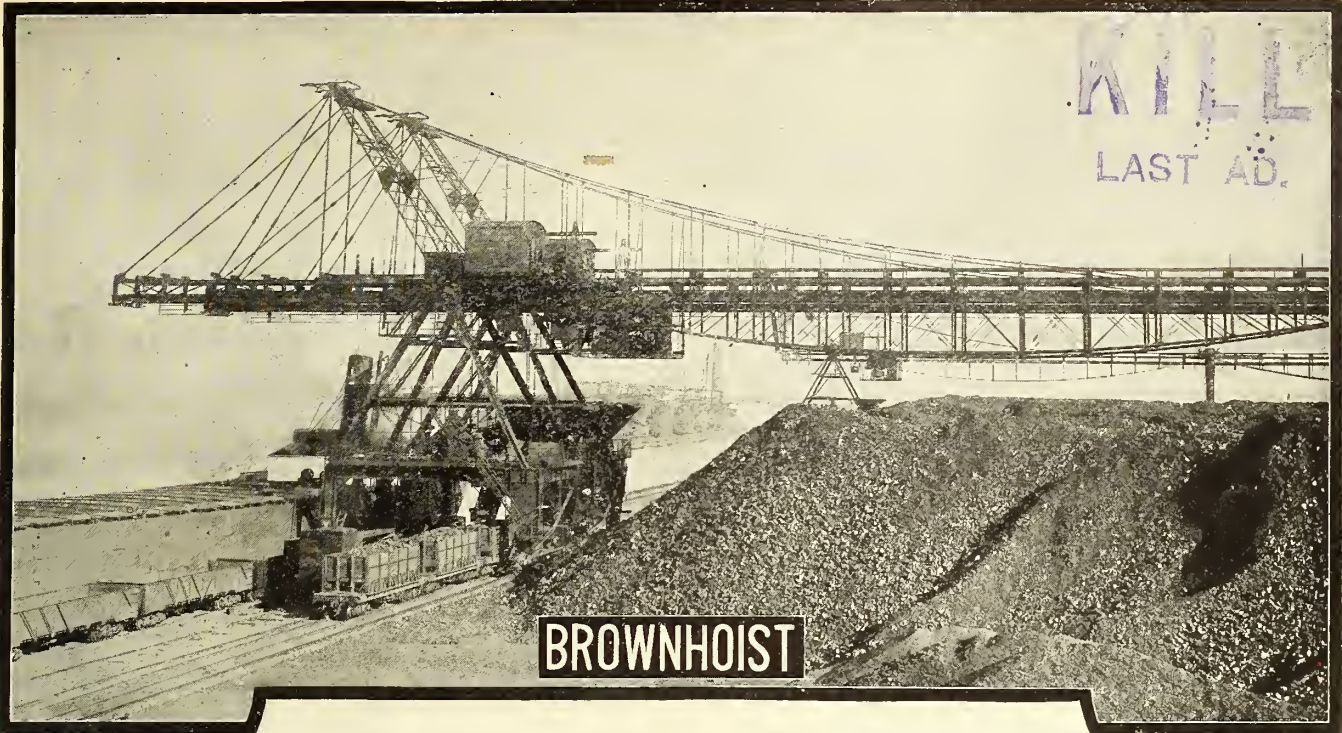
**STEEL  
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Cut Shows Largest Solid Propeller Ever Made in Canada.

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## Coal Handling Machinery

To handle coal rapidly and at a low cost is the aim of operators, dealers, railroads, and dock and vessel men. And in some cases the breakage must be considered. The type of machine to use depends upon the requirements and conditions, but it is very important that good machines be used, otherwise there will be trouble and delays.

Brownhoist Coal Handling Machinery consists of various types and sizes, two of which are shown here. The upper view shows 3 large bridge cranes on the docks at Duluth, Minn. Each bridge is equipped with a  $5\frac{1}{2}$ -ton Brownhoist Bucket and handles 250 to 350 tons per hour from boat to storage, including clean-up; and 500 to 600 tons per hour from storage to railroad cars. The lower view shows 2 Brownhoist Locomotive Cranes, steam operated. Each crane is equipped with a  $1\frac{1}{2}$ -ton Brownhoist Bucket and handles 80 to 100 tons per hour from pile to cars and unloads from car 55 to 70 tons per hour.

Brownhoist Coal Handling Machinery has been used for 38 years and can be found in many parts of the world. These many years' records prove them to be fast, safe and durable. You can depend upon them. Brownhoist Equipment may cost more but it is worth it.

**The Brown Hoisting Machinery Company**  
Cleveland, Ohio, U. S. A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, Etc.,  
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Branch Offices in New York, Pittsburgh, Chicago and San Francisco.





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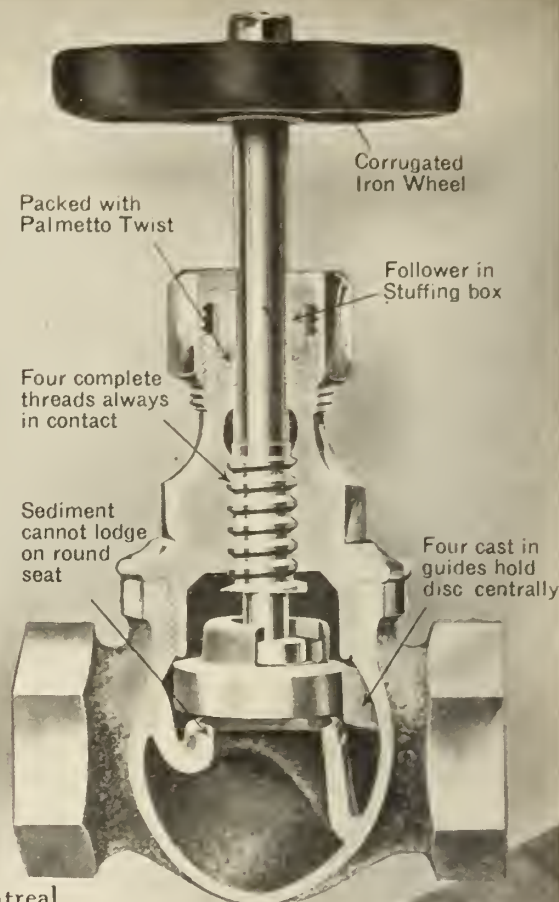
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## Fairbanks Renewable Disc

The only tool required is a wrench to remove the bonnet. The disc slips on and off with the fingers.





**BALL BEARING HANGERS** 17

AVERAGE POWER SAVING TAKEN FROM 25 SKF HANGER INSTALLATIONS

	Plain Bearing Hangers	Ball Bearing Hangers
Average kilowatts to operate machines and shafting	93	74 6
Horse power to operate shafting with belts on loose pulleys	32	13 5
Average number of bearings	110	110
Cost of energy at 1 5 cents per kw.-hr. for 3,150 hours per year	\$4,394 25	\$3,524 85
Cost of ball bearings, including erection		1,208 00
Interest on investment at 6%		72 48
Depreciation at 4%		48 32
Average cost first year		1,328 80
Saving in energy required		869 40
Saving in maintenance and lubrication		125 75
Average annual saving due to bangers		995 15
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## S.K.F. Bearings—Coal Economy

The rising cost of fuel necessitates the checking of all power wastes.

Frictionless losses through inefficient transmission are heavy. S.K.F. Ball Bearing Hangers would conserve this power—save dollars at the coal pile.

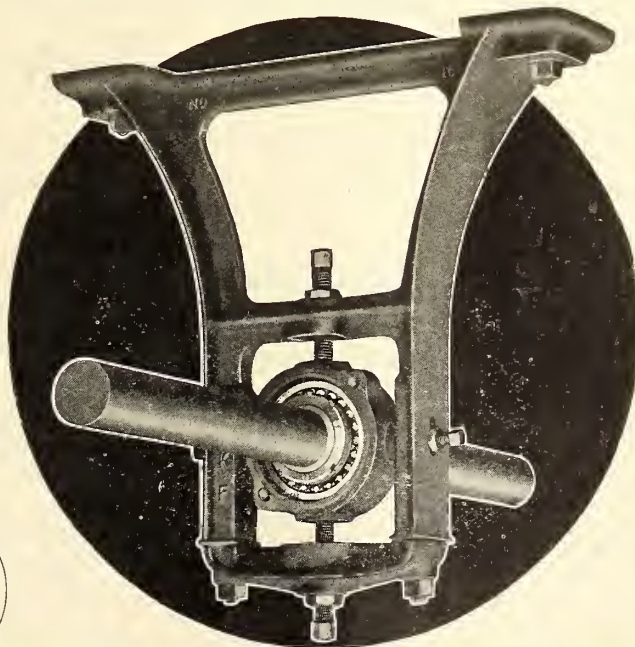
Learn about S.K.F. Ball Bearings. Study the figures in the table. Then send for bulletin No. 78. It is full of facts for you.

Made by **CANADIAN SKF CO., Limited**, Toronto, Ont.

Agents for S.K.F. Transmission Bearings.

**The Canadian Fairbanks-Morse Co., Limited**

*"Canada's Departmental House for Mechanical Goods."*



KILL  
LAST AD.





# Welding Liberty Motors

with

## Davis-Bournonville Apparatus

**I**LLUSTRATION is a reproduction of a poster by the Detroit Sunday News advertising a feature story of Women's Work on the Liberty Motors. The young woman is welding the water-jacket of a Liberty Motor cylinder—a fine job of welding. She is using a Davis-Bournonville oxy-acetylene welding torch designed for the purpose—light, economical, efficient—supplied with acetylene from a large battery of Davis-Bournonville acetylene pressure generators, in one of the large manufacturing plants in Detroit, which has the largest and most complete oxy-acetylene welding installation in the United States—a Davis-Bournonville installation, and only one of many making Liberty Motors, aeroplanes and other government requirements.

There is more Davis-Bournonville oxy-acetylene apparatus in the steel mills, foundries, munitions plants, ship yards, U. S. Navy Yards, U. S. Army, and in sheet metal manufacturing plants and repair shops than of any other make—because it “leads the world” in range and efficiency, and has the largest successful experience back of it.

Stationary installations providing acetylene and oxygen generating and compressing systems, or portable equipment as required, and many exclusive developments for mechanical welding and cutting of inestimable value in speeding up production and raising efficiency in this time of unusual demand for high grade output.

## SHE BUILDS MOTORS



## How Detroit Women Are Doing Men's Work

Constructing Liberty Motors for the U. S. A. — By Buda Stephens.

6c The Detroit Sunday News 6c

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"Always in the Lead"

FOR SALE BY ALL NEWSBOYS

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# Railway & Power Engineering Corporation

**MONTREAL**Power Building  
Tel. Main 5667**LIMITED****Head Office, Toronto****TORONTO**C.P.R. Building  
Tel. Adelaide 2675

## Railway, Light and Power Equipment

*We Manufacture in Canada the Following Equipment :*

Railway Motor Armature Coils

Trolley Wheels

Railway Motor Field Coils

Trolley Bases

The Fraser Patent Threadless Pipe Fitting

This fitting is a new device and saves a large percentage of the labor cost on installation of any pipe frame work, for switchboards, switch and bus structures, and greatly improves their appearance. This device is also ideal for Architectural and Marine use for pipe railings, etc.

### WE REPRESENT :

#### BATES EXPANDED STEEL TRUSS COMPANY

CHICAGO, ILL.

Steel poles for Railway, Light and Power Purposes. Outdoor Type Substations.

#### CATSKILL FOUNDRY & MACHINE WORKS

CATSKILL, N.Y.

Steel Gears and Pinions.

#### COLUMBIA MACHINE WORKS & MALLEABLE IRON CO.

BROOKLYN, N.Y.

Car Equipment and Tools.

#### LACLEDE STEEL COMPANY

ST. LOUIS, MO.

"Electroheat" Axle and Armature Shafts of all types and sizes. "Electroheat"

Annealed Side Rods, Main Rods, Crank Pins, Piston Rods.

All kinds of "Electroheat" Forgings, etc.

#### MORGAN CRUCIBLE COMPANY

NEW YORK

Carbon Brushes.

#### RAILWAY TRACK WORK COMPANY

PHILADELPHIA, PA.

The Reciprocating Track-Grinder.

#### THE TROLLEY SUPPLY COMPANY

CANTON, OHIO.

Trolley Retrievers, Catchers, Headlights and Street Railway Supplies.

#### WESTINGHOUSE ELECTRIC AND MANUFACTURING CO.

PITTSBURGH, PA.

Trolley and Catenary Construction Material.

We also handle electric passenger, freight, and express cars and locomotives of all types and descriptions.

Keep this list before you whenever you are in the market for equipment and supplies.

All engineering service without obligation. List will be continued in next issue.





# PRODUCTS

*Quality First*



National Trolley Guard on duty in a Canadian city.

## Guarding the Grade Crossings with National Trolley Guard

National Guard is a conductor in the form of an inverted trough of open wire mesh. If the trolley wheel leaves the wire the Guard catches it and furnishes current to carry car and passengers safely out of the danger zone.

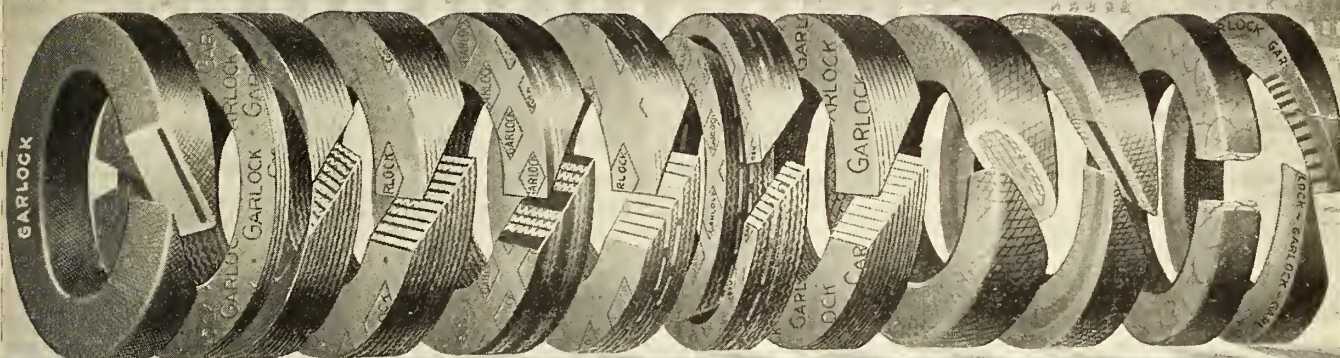
National Guard is on duty at hundreds of crossings. After a company has once watched the first installation it usually protects the rest of its crossings with National Guard.

"Guarding the Grade Crossings" describes National Guard and illustrates various installations.—Write for a copy.

**THE OHIO BRASS COMPANY, Mansfield, Ohio**



# GARLOCK PACKING



## FOR EVERY PURPOSE

Thirty-one years ago we began to manufacture packing and during that time we have steadily insisted upon the best of everything that enters into our product—design, material, workmanship. Constant effort has been directed toward improving and perfecting our packings to keep pace with the wonderful progress that has been made in the development of modern machinery.

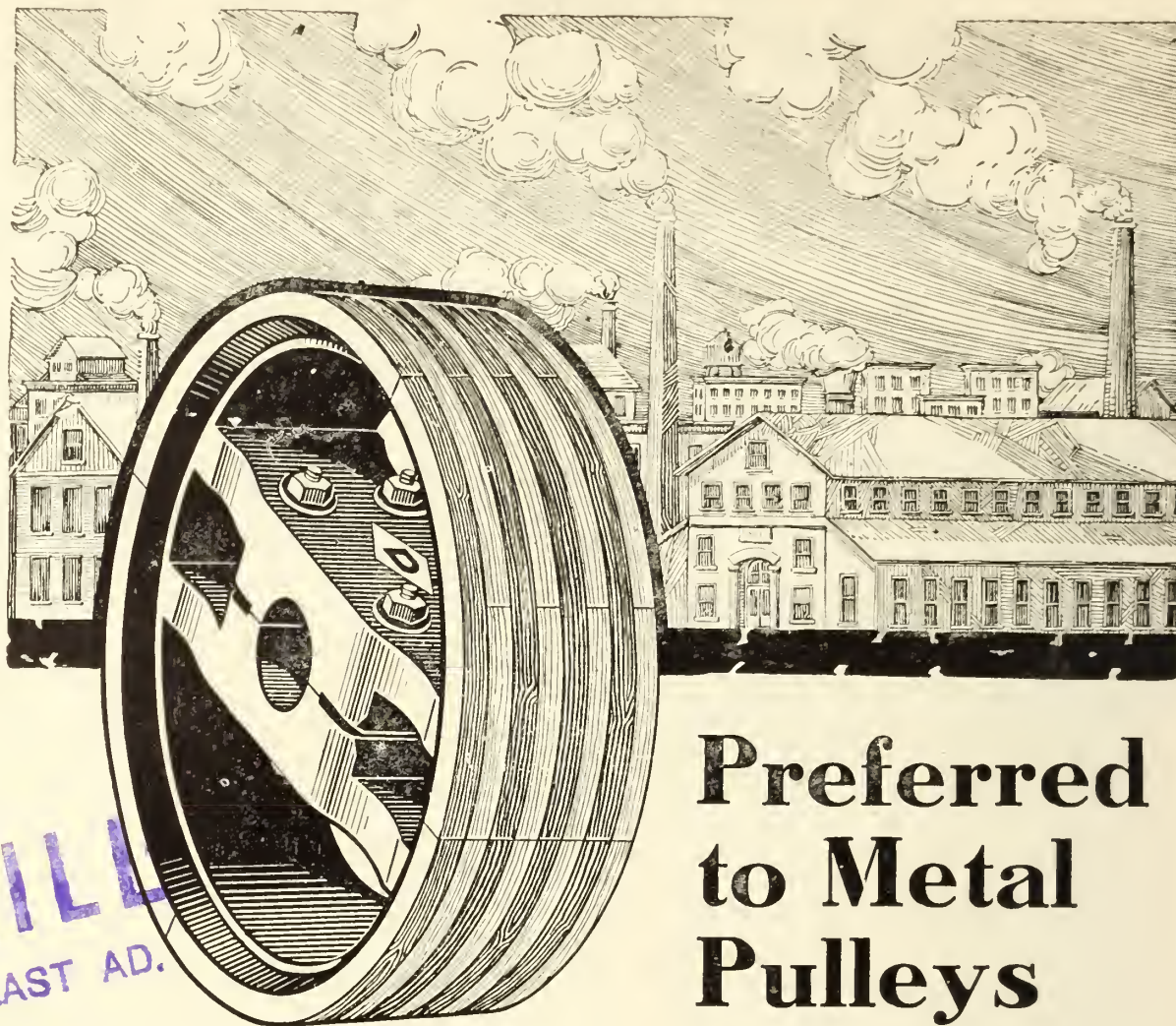
Our factories, devoted exclusively to the manufacture of our packings, are the largest, most modern and best equipped in the world, and the locations of our numerous branch factories and stores are such as to afford the greatest advantage in serving our customers promptly.

*We are Exclusive Packing Manufacturers—We Make Nothing Else*

**THE GARLOCK PACKING CO.**  
**Hamilton, Canada**  
**Branches in Principal Cities**







## Preferred to Metal Pulleys

We guarantee immediate shipment of all orders for Dodge Wood-Split Pulleys from four inches up to six feet in diameter.

There is no telling how long you may have to wait for metal pulleys. The United States Government won't allow steel to be released for their manufacture except for war orders.

Dodge Wood-Split Pulleys cost less to buy than metal pulleys, yet provide fifty per cent. greater returns in horsepower value, because their surface provides greater adhesion consequently there is less belt slip ; and because, being lighter and better balanced, there is less weight friction.

# DODGE

## WOOD SPLIT PULLEYS

**Dodge Manufacturing Co., Limited, Toronto, Ont'**

Branch Warehouse : 770 St. Paul St. West, Haymarket Square, Montreal.



# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg.,  
Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH,  
ENGINE and CAR OILS, and PERFECTION VALVE  
and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to  
five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organi-  
zation of skilled railway mechanics of wide and varied experi-  
ence. Services of Experts furnished free of charge to patrons  
interested in the economical use of oils.

## STREET RAILWAY LUBRICATION A SPECIALTY

---

USE

### Galena Railway Safety Oil

in Headlights, Marker and Classification Lamps, to secure Effi-  
ciency of Service, Maximum Candle Power, Clearness of Light.

### Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long  
time burning, to avoid smoked and cracked chimneys and  
crusted wicks.

Tests and Correspondence Solicited.



## Russell & Stoll MARINE ELECTRICAL SUPPLIES



Bow Light



Side Light



Anchor Light

A full range of Regulation Running Lights for all sizes of boats from launches to the largest ocean steamer. Fittings supplied for Edison or Ediswan base lamps.



Wall Brackets



Switch and Two Receptacles

Marine Switches and Receptacles for conduit or lead covered cables.

Also full line of hand portables, deck fixtures, steam and vapor proof fixtures.

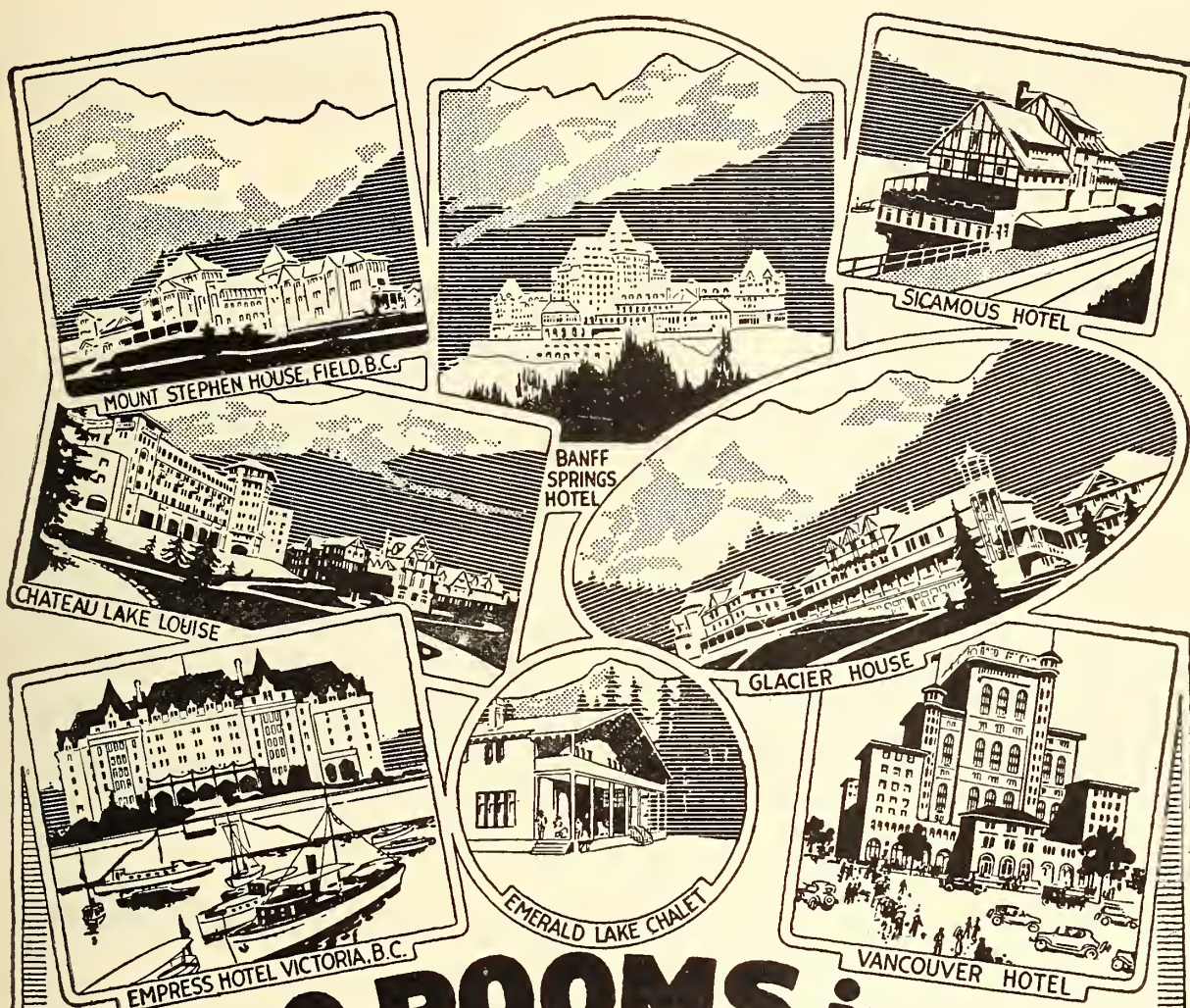
Quick shipments.

*Write our nearest office for full information.*

### CANADIAN GENERAL ELECTRIC CO. LIMITED

Head Office: Toronto. Sales Offices: Montreal, Quebec, Halifax, Sydney, Ottawa, Cobalt, South Porcupine, London, Winnipeg, Calgary, Edmonton, Nelson and Vancouver.





# 2000 ROOMS in the Canadian Pacific Rockies

Three Giant Mountain Ranges  
Making Fifty Switzerlands in One

*Between Calgary and Victoria, B. C.*

Distinctive hotels — each as picturesque as the scenery into which it fits — each with its special feature of glaciers, lakes, Alpine climbing, fishing, pony riding, swimming or golf. Luxurious mountain-guarded Banff Springs Hotel — restful Chateau Lake Louise, among the Lakes in the Clouds. Mount Stephen House at Field, under

the shadow of Cathedral Mountain — the gem-like Emerald Lake Chalet — Glacier House, glacier rich — Hotel Sicamous, on the the Shores of Shuswap Lake — spacious, gracious Hotel Vancouver, at the Gateway to the Pacific — the Empress at Victoria, B. C., on Vancouver Island, with its atmosphere of old England — these hotels invite you this summer.

W. B. Howard, District Passenger Agent, Toronto



# War Output in Commercial Shapes

Ingots	Blooms and Billets	Forgings
Square 8", 9", & 12" Fluted 15", 18", 20" & 26" Sand Cast Any Size.	Rolled 1 $\frac{3}{4}$ " to 6" Square Cogged any size above rolled sizes.	Ship Forgings Heavy Shafting Locomotive Fr'g. Electrical Work Locomotive Axle Car Axles Miscellaneous
Plates	Castings	Specialties
High Carbon for Plows, Shovels, Harrow Discs Soft Centre Low Carbon Any thickness and width up to 20"	Locomotives Cars Electrical Work Ship Castings Rolling Mill Steel Rolls Miscellaneous	Draft Arm Draft Gears Truck Side Frames Bolsters Car Couplers

*We Specialize on High Carbon and Alloy Steels*

## Dominion Steel Foundry Co., Limited

HAMILTON

-

CANADA



# Why

## Good Men Leave



Hand-pumped cars make the section-men's work unduly laborious and unfit them for efficient efforts.

These men are naturally attracted to railroads which use motor-driven section cars.

The existing unprecedented shortage of labor demands the fullest use of labor-saving devices.

**MUDGE MOTOR CARS**  
will do much to solve your  
Labor Problems

# Why

## Good Men Stay



Mudge Motor Cars land your men at the point of work, fresh to start the day's labor.

Mudge Motor Cars enable your men to remain on the job until the last moment, when they are returned home without fatigue.

The proof that Mudge Cars satisfy is to be found in the great number of roads using them.

**MUDGE MOTOR CARS**  
will do much to solve your  
Labor Problems

# MUDGE MOTOR CARS



**Mudge & Company**

Railway Exchange,

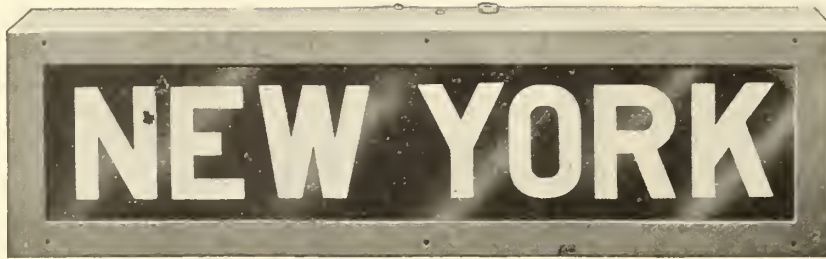
Chicago, Ill.





*Your Car Signs are actually the first line of contact with your riding public — improve them,*

*use these illuminated signs*



Typical Keystone Type



Typical Hunter Type



Typical Keystone Type

They furnish an excellent inducement to ride, they advertise your service.

They make easy the re-routing of cars and the shifting of them from one barn to another.

They are complete in themselves. Parts are interchangeable. Uniform tension on Curtains. Curtains and mechanism re-

moveable. Curtain interchangeable in types of equal length. No tools necessary to change curtain. Easily cleaned.

*Write for complete data.*

**Electric Service Supplies Co.**

MANUFACTURERS

PHILADELPHIA  
17th and Cambria Sts.

NEW YORK  
50 Church St.

CHICAGO  
Monadnock Bldg.

**Lyman Tube & Supply Co., Ltd.**

CANADIAN DISTRIBUTORS

MONTREAL  
Lyman Tube Bldg.

WINNIPEG  
302 Donalds Block

TORONTO  
33 Melinda Street



**Quality**

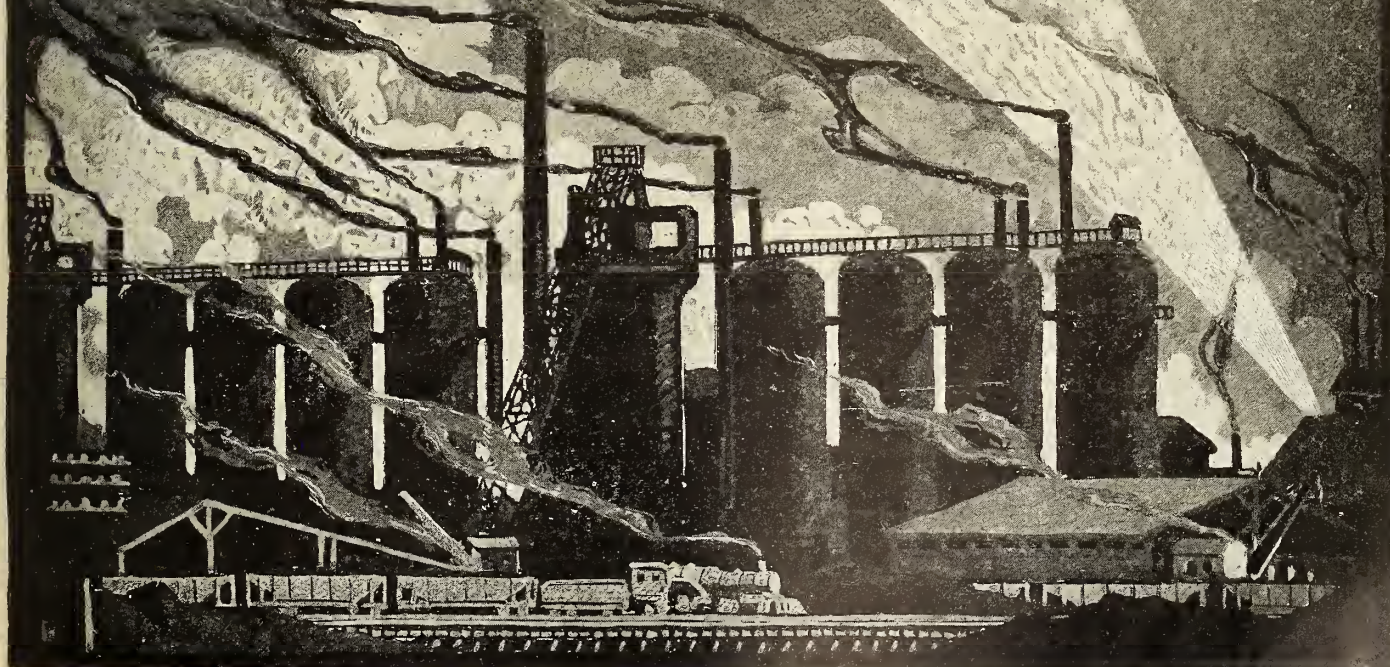
**Service**

## PRODUCTS

"Hamilton" Pig Iron  
 Open Hearth Steel Billets  
 Steel and Iron Bars  
 Forgings  
 Railway Fastenings  
 Pole Line Hardware  
 Bolts, Nuts and Washers  
 Wrought Pipe  
 Screws, Wire  
 Wire Products  
 of every description

# THE STEEL COMPANY OF CANADA LIMITED

HAMILTON MONTREAL







# **GENERAL RAILWAY SIGNAL COMPANY**

## **OF CANADA LIMITED**



Railway Operating Engineers, Manufacturers and Contractors  
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling  
Electric Interlocking

Electric  
Interlocking

Mechanical  
Interlocking

Highway  
Crossing Gates

Highway  
Crossing Bells



A-P-B. Automatic  
Block Signals for  
Single Track

A-C. and D-C.  
Automatic Block  
Signals for  
Double Track

### **Advantages of Absolute-Permissive Block Signaling (A-P-B)**

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.



**Head Office and Works**  
**LACHINE, QUEBEC**







*Loading  
Northern Electric  
Railway Signal Wire  
from one of the big shipping  
platforms of the Company's  
Montreal plant.*

There has been no compromise with  
quality in the manufacture of

***Northern Electric***

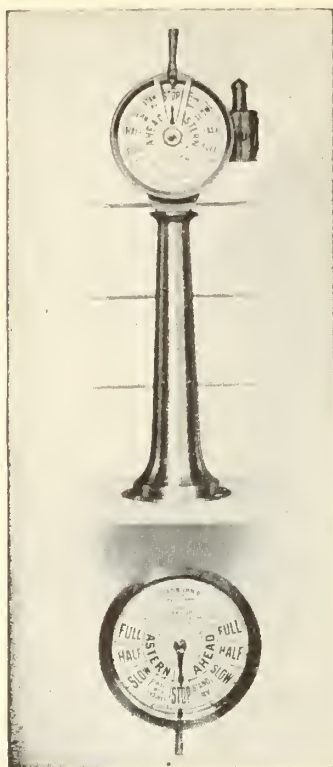
**RAILWAY SIGNAL WIRE AND CABLE**

Made in strict accordance with R. S. A. Specifications and used by every  
steam and electric road of any consequence in Canada. It always pays to  
buy the best.

***Northern Electric Company***  
LIMITED

Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver



*Made in Canada*

## Patent "Duplex Gong" Telegraphs

Telegraphs for Engine, Twin  
Engine, Stokehold, Steering  
and Docking.

Engine Room Indicators (Speed)

Engine Counters

Chadburn's (Ship) Telegraph Co'y, Ltd.  
Bootle, England

*Sole Canadian Agents*

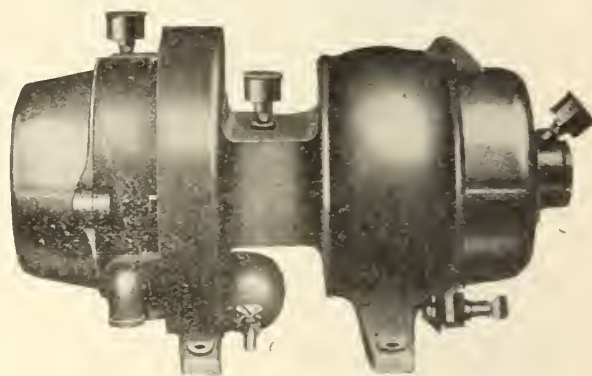
## Taylor & Arnold, Limited

**Montreal**

**Winnipeg**

**Vancouver**

## The "Taynold" Incandescent Electric Headlight

*Made in Canada*

An Incandescent Headlight that complies with every railroad requirement in every province of Canada. A headlight that has proved efficient and economical.

## Taylor & Arnold, Limited

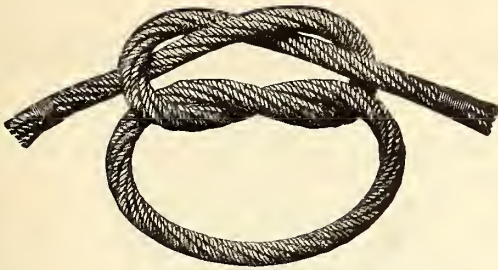
Manufacturers of Railway and Marine Specialties

**Montreal**

**Winnipeg**

**Vancouver**





## “DURABLE” WIRE ROPE

Made in Canada

Replaces manilla for Stevedoring and other hoisting

**THE DOMINION WIRE ROPE COMPANY, LIMITED**  
 Toronto MONTREAL Winnipeg

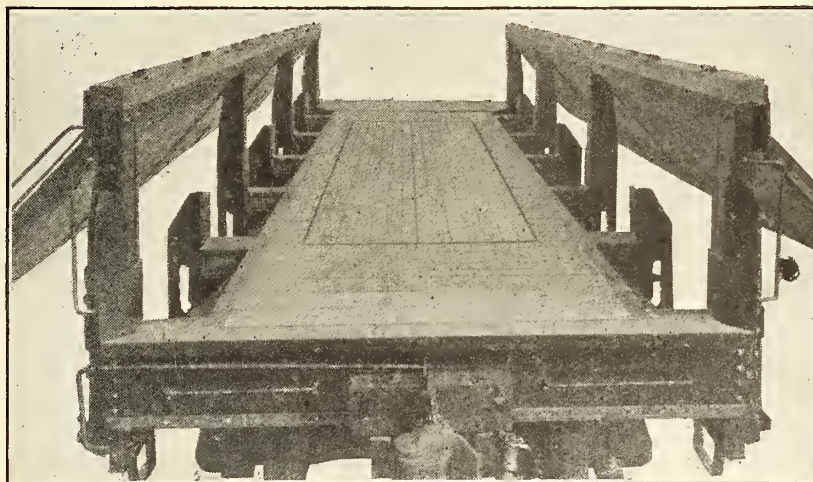
## Side Ballasting With One Side Closed

Canadian Government Railways Standard Ballast Car

25 per cent More  
Door Opening  
Area.

Less Stakes to Ob-  
struct the Dumping  
Material.

No Clogging of the  
Material or  
Boulders between  
the Plow and  
Stakes.



Dumps Clean and  
Quicker in any  
Material.

No more Breaking  
of Stakes or Cables.

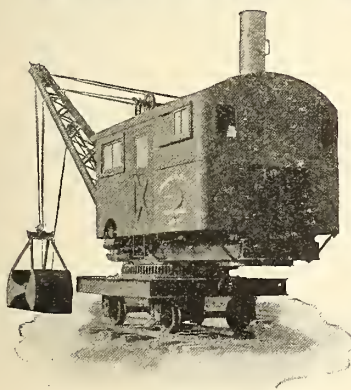
The Car that will  
Give Maximum  
Service with  
Minimum Repairs.

Write for Booklet No. 19 for further information.

—DESIGNED, BUILT AND PATENTED IN CANADA—

**The HART-OTIS CAR CO., Limited, MONTREAL**

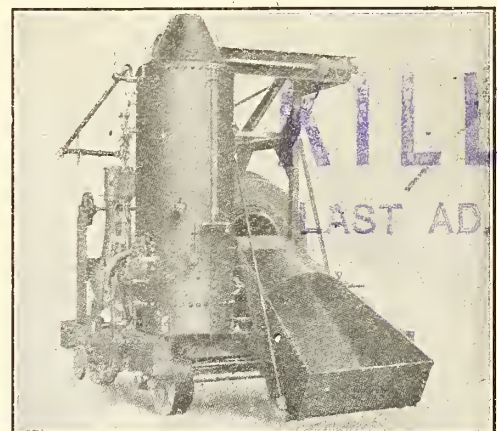
## “Industrial Works” Cranes



Increase Profits by  
Reducing Handling  
Costs

## “Ransome” Mixers

Concrete Carts—Buckets  
Wheelbarrows



Branch :  
108 Mail Building  
TORONTO

**F. H. Hopkins & Co**

Head Office :  
**MONTREAL**



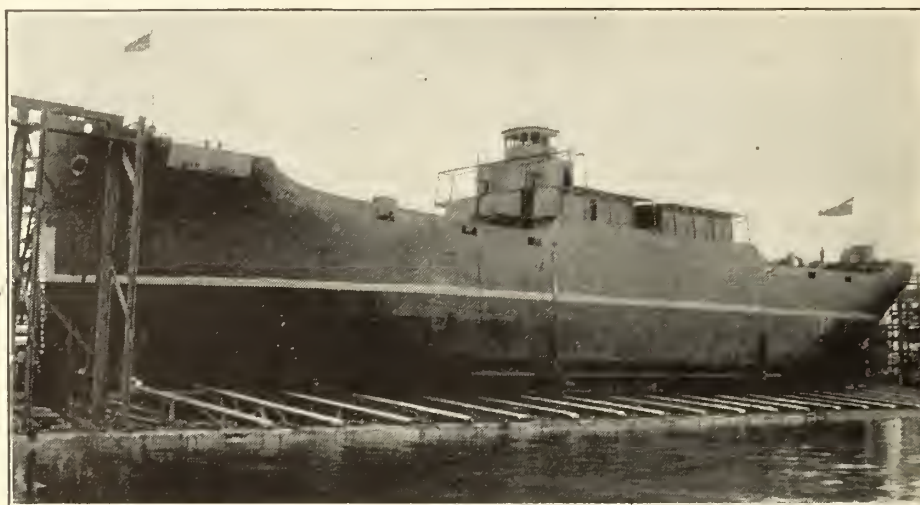
# Port Arthur Shipbuilding Co., Limited

Port Arthur, Canada

*Designers and Builders of*

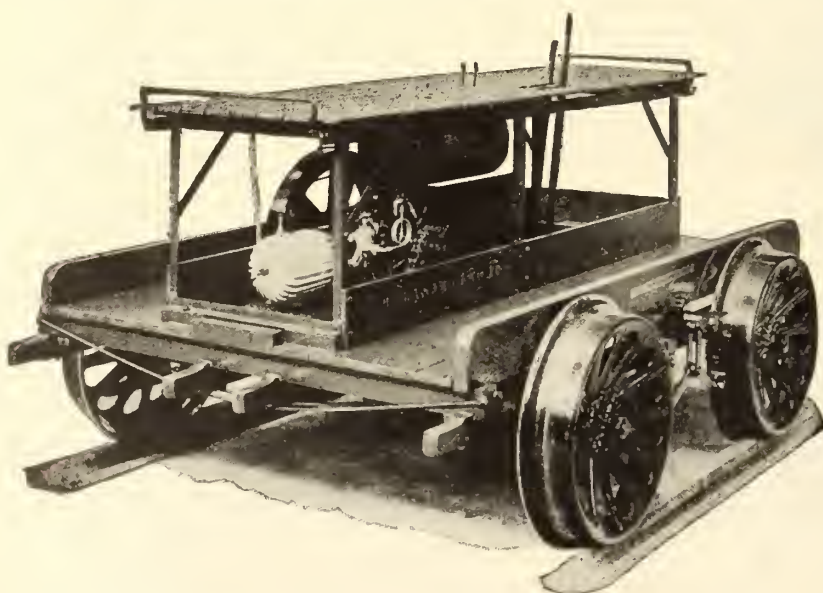
**STEEL SHIPS — BOILERS — ENGINES, Etc.**

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK



WAR OSIRIS—LAUNCHED AT PORT ARTHUR, MAY 25th, 1918.

## Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

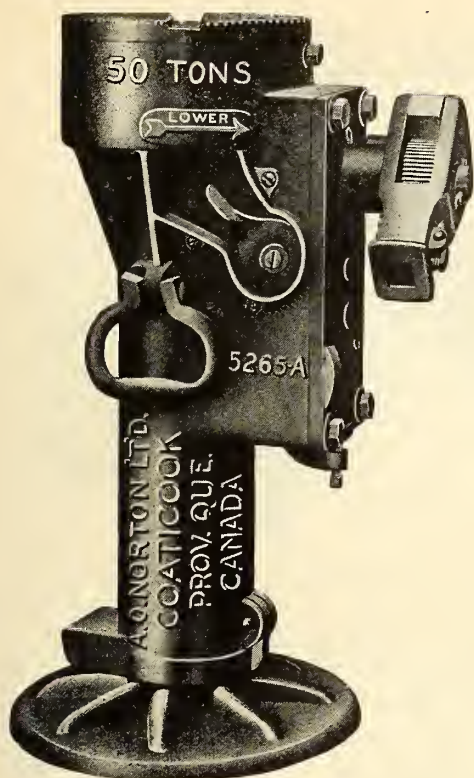
We manufacture a full line of railway motors for every purpose

and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

## Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.





# Norton Jacks

For all Classes of Service

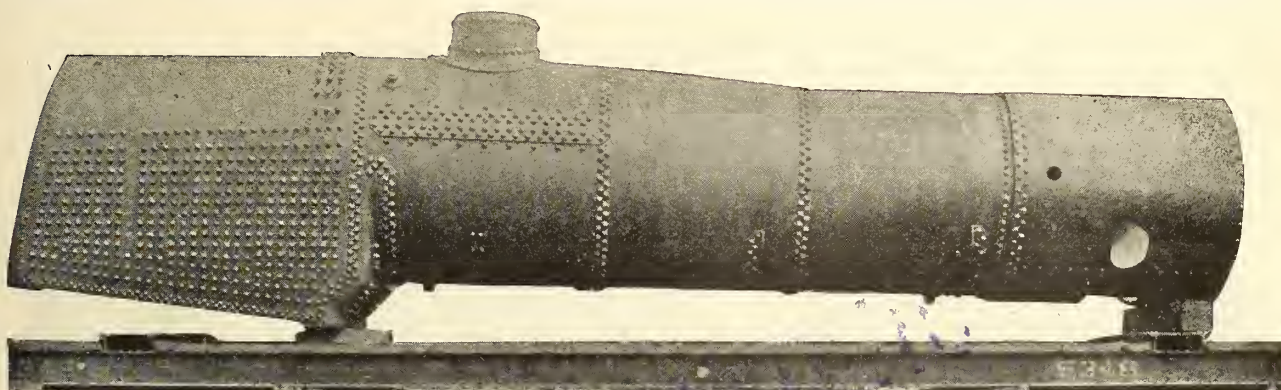
**10 to 100 Tons Capacity**  
In Stock for Immediate Shipment.

*Send for Illustrated Catalogue No. 29.*

## A. O. Norton, Limited

Coaticook, Prov. Que., Canada

Stock Carried by Canadian Agents: **MUSSENS LIMITED**  
Montreal Toronto Winnipeg Cobalt Calgary Vancouver



**THE ART OF STAYING**—The locomotive fire box will advance in just that proportion as suitable and adequate means are provided to enable the fire box to expand under the least restriction.

**STAYBOLTS BREAK**—when the stress of fire box expansion is too severe, and fire sheets distort and crack when staybolts are too rigidly connected to same.

**THE TATE FLEXIBLE STAYBOLT**—is designed and made to give satisfactory results in the final measure of its usefulness, as an economic, safe and reliable factor in reducing the costs of fire box repairs and maintenance.

**ANY ARTICLE THAT CONTRIBUTES**—to the service value of the locomotive as an earning factor is well worth considering carefully. From the knowledge of what has been accomplished by the use of the Tate Flexible Staybolt, we feel confident that all our patrons are well aware of its true value.

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto Ont.



# Marine Specialties

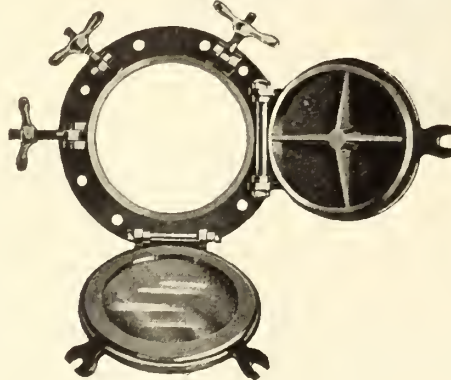
Marine Pop Valves



Single or Twin Type

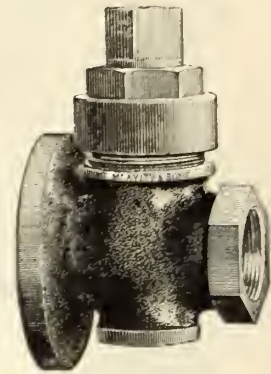
LAST AD.

Port Lights



Brass and Iron—Storm door open

Marine Cocks



Iron and Brass  
Flanged and Screwed

Manufactured by

**T. McAVITY & SONS, Limited**

Established 1834  
Cable Address "McAvity, St. John"  
Codes, A. B. C. 4 and 5 Editions

Wholesale and Retail Hardware  
Brass and Iron Founders  
**ST. JOHN, N.B., Canada**

Branches at  
MONTREAL, TORONTO  
WINNIPEG

## "STERLING" HACK SAW BLADES

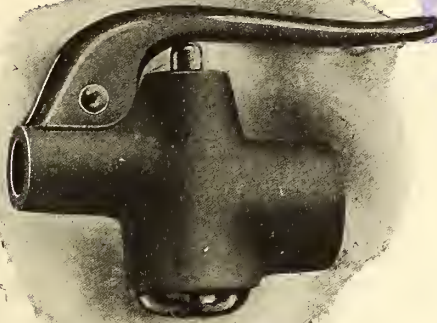


They are a "STERLING" product of good standard. They are made by people who know how, and are really the last word in a hack Saw Blade. This blade is made from the best material produced by any mill, —added to this, correct mechanical construction and proper heat treatment produce a blade that is as good as is possible to turn out.

Manufactured by

**Diamond Saw & Stamping Works**  
Buffalo, N.Y., U.S.A.





## LESS AIR WASTE

USE THE "BLOW GUN"  
FOR CLEANING

The "Blow Gun" is a simple little cleaning nozzle, with the positive control valve right where needed—at the jet.

**No leakage, no trouble, no strong spring to wrestle with.**

Blow out your motors and clean off your machine tools with compressed air and the "Blow Gun".

### Canadian Ingersoll-Rand Co., Limited

General Offices, Montreal

BRANCHES: SYDNEY, SHERBROOKE, MONTREAL, TORONTO, COBALT, TIMMINS,  
WINNIPEG, NELSON, VANCOUVER



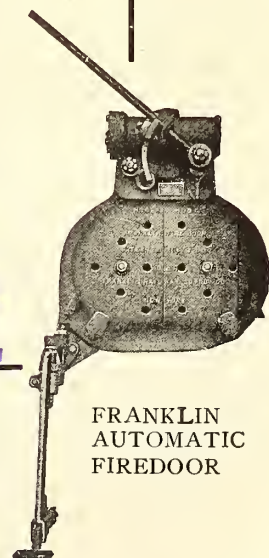
## Three Years Service Without the Loss of a Single Second

"Engine 1067 came in this morning which gave me a splendid opportunity to inspect the firedoor applied to this engine three years ago this month. This door is of the Butterfly Type and is in first class shape. No repairs have been needed during the three years of service. Everyone says it is the best proposition in the way of a pneumatic door they have ever seen."—*Traveling Engineer.*

This record is being equalled by thousands of engines all over the country. But the dollars and cents it might cost are of the least importance right now.

The important thing is that it gave dependable continuous service throughout this time.

And the fact that it saves coal the country needs so badly.



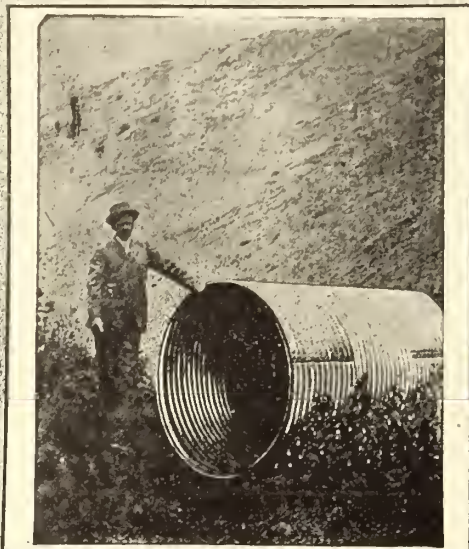
FRANKLIN  
AUTOMATIC  
FIREDOR

Franklin Railway Supply Co. of Canada, Limited

Transportation Bldg., Montreal



# PEDLAR'S "PERFECT" TONCAN METAL CULVERTS



## STRONG and DURABLE

*Proof Against Rot,  
Rust and Frost*

Easily and quickly installed by Ordinary Unskilled Labor, without and danger of damage to the Culvert.

Used on all the leading railways and many of the best-known highways in Canada.

Lengths up to 40 feet—Coupling Bands for Longer Lengths.

**Culvert Booklet R.M. on Request.**



## THE PEDLAR PEOPLE, LIMITED

Established 1861 Executive Offices and Factories: OSHAWA, ONT.  
Branches: Montreal, Ottawa, Toronto, London, Winnipeg, Vancouver

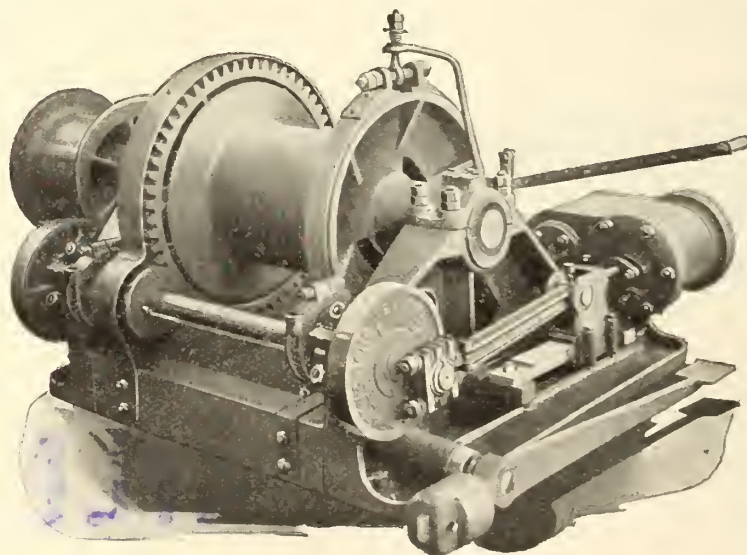


# "BEATTY" DECK MACHINERY FOR SHIPS

The illustration shows the Winch generally used on the ships being built in the United States.

A certain proportion are fitted with two Winch Heads, Extended Shafts and Outboard Bearings.

One of several types we are producing in quantities.



8 1/4 x 8 Single Purchase, Throttle Reverse Deck Winch.

Cargo Winches  
Warping Winches  
Ash Hoists  
Anchor Windlasses  
Also

Hoisting Engines  
Electric Hoists  
Derrick Irons  
Clamshell Buckets

Send us your inquiries.

We will quote quickly.

**M. BEATTY & SONS, Limited**  
WELLAND.

Agents

(H. E. PLANT, 1790 St. James St. Montreal  
E. LEONARD & SONS, St. John, - N.B.  
R. HAMILTON & CO., - Vancouver  
KELLY-POWELL Ltd., - Winnipeg)



# THERMIT

## The nly Reliable Process for Welding Heavy Sections

**T**HIS explains why railroads and steel mills used over one million pounds of Thermit in 1917. Also why 95% of the railroads in the United States and Canada having over 10 locomotives, use Thermit for welding frames and all heavy sections.

There are few machine parts which are subjected to greater strains or more severe shocks than a locomotive frame or a blooming mill pinion. Yet Thermit welds on such parts are being made every day and **STAND UP IN SERVICE FOR YEARS**. The reason for this is that, unlike **ANY OTHER WELDING PROCESS**, the steel to make a Thermit weld is produced **IN BULK** at a temperature of

5000° F. Furthermore, results are not dependent on the individual skill of the operator.

We have ample proof for all our claims and our long list of satisfied customers who come back week after week, month after month, and year after year for more Thermit is a never ending testimonial to the efficiency of the Thermit Process.

Remember that Thermit should not be confused with either oxy-acetylene or electric welding. It stands in a class by itself. It welds sections which cannot be successfully welded by any other method.

Write for Pamphlet 2144.

## METAL & THERMIT CORPORATION

(Successors to Goldschmidt Detinning and Goldschmidt Thermit Co.)

**103 RICHMOND STREET WEST, TORONTO, ONTARIO**

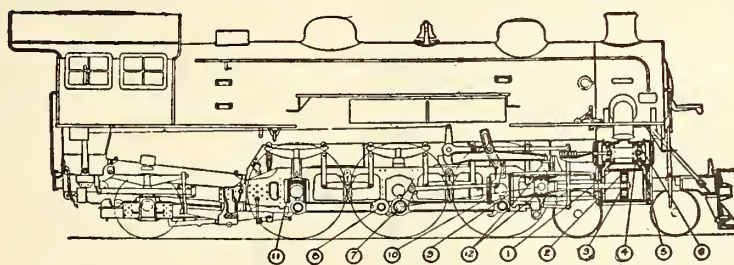
Chicago—7300 So. Chicago Ave.  
San Francisco—329-333 Folsom St.

Pittsburgh—1427-1429 Western Ave.  
New York—The Equitable Bldg., 120 Broadway



## Hunt-Spiller Gun Iron

1. Cylinder Bushings
2. Cylinder Packing
3. Pistons
4. Valve Bushings
5. Valve Packing
6. Valve Bull Rings



7. Side Rod Bushings
8. Knuckle Pin Bushings
9. Pedestal Shoes
10. Pedestal Wedges
11. Driving Boxes
12. Crosshead Shoes

For 12 of the Principal Parts of a Locomotive

### THE LIFE OF AIR PUMP CYLINDERS

A large trunk line has reduced the cost of air brake maintenance by issuing the following general orders:

#### AIR PUMP CYLINDERS

"Air pump cylinders should be rebored if worn 1-32" out of round or if 1-32" taper. The largest permissible boring size is 1-8" larger than nominal diameter. When cylinders have reached this size they should be bored perfectly straight and bushed to original diameter by applying a Hunt-Spiller Gun Iron bushing."

With the modern equipment of to-day, there is a great deal depending on the successful performance of the air pump. That is why Hunt-Spiller Gun Iron bushings are used. Long service with minimum wear.

Made Only By

## Hunt-Spiller Manufacturing Corporation

W. B. LEACH, PRES. AND GEN. MGR.

Office and Works:

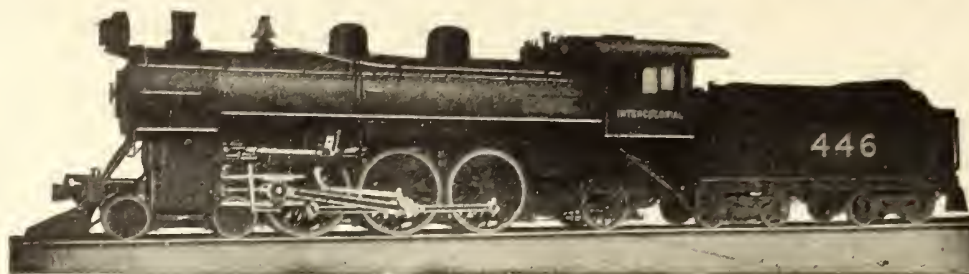
J. G. PLATT, VICE PRES. AND SALES MGR.

383 Dorchester Avenue, So. BOSTON, MASS.

Canadian Representatives: Canuck Supply Co., 418 St. James St., Montreal, P.Q.



## Heavier Trains—Less Coal and Water Per Trip



### PACIFIC TYPE LOCOMOTIVE—INTERCOLONIAL RAILWAY

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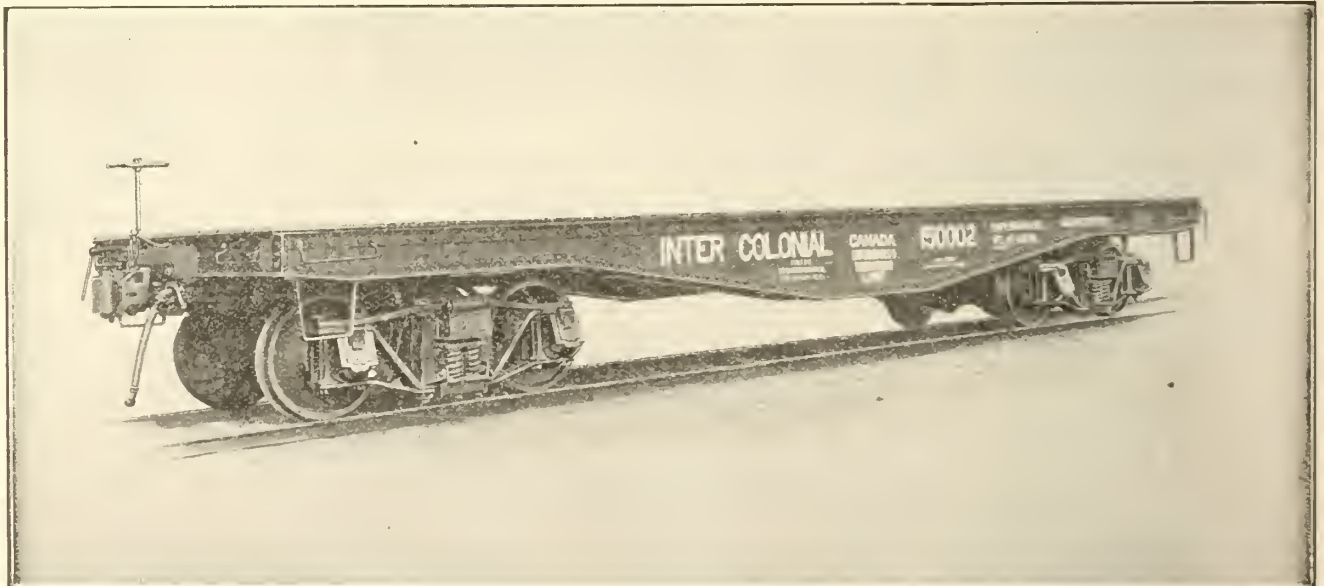
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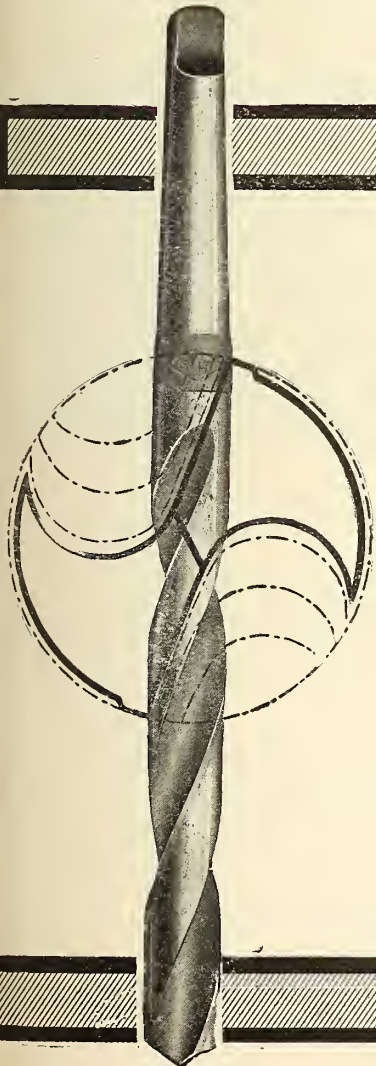
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# Canadian Railway and Marine World

September, 1918

## The Advance of Freight Rates by Order in Council.

Canadian Railway and Marine World for August contained the full text of the Dominion Government's order in council of July 27, passed under authority of the War Measures Act, 1914, increasing freight rates on railways. Following are copies of the order in council of July 16, directing the Board of Railways Commissioners to prepare a schedule of increased freight rates, of the Chief Commissioner's report thereon and of the Chief Commissioner's recommendation that the Toronto Board of Trade's protest against the increased rates be dismissed:—

similar demands have been made on other railway companies in Canada; that the attached letter from the Chairman of the Board of Railway Commissioners has been received by the acting Premier, and referred by him to the Minister of Railways and Canals, from which letter it appears that the extra amount of wages which the three larger systems, viz., Canadian Pacific, Grand Trunk and Canadian Northern, would be called upon to pay, should the same rate of wages be adopted in Canada as is now in force in the United States, would be \$36,865,894.00, while on government lines the increase

in Canadian territory should be increased as increased in U.S. territory, by the award commonly known as the McAdoo award, as the same may be from time to time amended or extended, in so far as the Government Railways are concerned, and that it is advisable in the public interest that companies, privately owned, should make similar increases to their employees. That the net earnings of the railway systems as a result of increased costs of transportation, which has already accrued, have greatly decreased. That the net earnings of the Grand Trunk in 1917 decreased to £26,279, against



Organization of Canadian Board of Adjustment No. 1 by Canadian Railway War Board and Labor Organizations.

This photograph was taken in the Canadian Railway War Board's office in Montreal recently, when Canadian Board of Adjustment No. 1, consisting of 6 representatives of railway companies and 6 representatives of railway employees' organizations was organized, to deal with railway employees' wages questions. Those shown in the group are as follows:—

**BOTTOM ROW**, from left to right:—Jas. Murdock, Vice President, Brotherhood of Railway Trainmen; J. H. Walsh, General Manager, Quebec Central Ry.; Major G. A. Bell, C.M.G., acting Deputy Minister of Railways; D. B. Hanna, Third Vice President, Canadian Northern Ry.; Ash Kennedy, Assistant Grand Chief Engineer, Brotherhood of Locomotive Engineers; S. N. Berry, Vice President, Order of Railway Conductors.

**TOP ROW**, from left to right:—C. A. Hayes, General Manager, Eastern Lines, Canadian Government Railways; W. V. Turnbull, Vice President, International Brotherhood of Maintenance of Way Employees; S. J. Hungerford, General Manager, Eastern Lines, Canadian Northern Ry.; S. R. Payne, Manager, Ottawa & New York Ry.; J. M. Mein, Deputy President, Order of Railway Telegraphers; H. Shearer, General Superintendent, Michigan Central Rd.; F. F. Backus, General Manager, Toronto, Hamilton & Buffalo Ry.; G. K. Wark, Vice President, Brotherhood of Locomotive Firemen and Enginemen; Sir Geo. Bury, Vice President, C.P.R.

### The Minister of Railways' Recommendation of Increased Wages and Freight Rates.

The following report of the committee of the Privy Council was approved by the Governor General on July 16:—The committee of the Privy Council have had before them a memorandum, dated July 15, from the Minister of Railways and Canals, stating that representations have been made by the organization of railway employees for an increase in the scale of wages of employees engaged on the Intercolonial, National Transcontinental and Prince Edward Island Railways, and that

would amount to \$5,600,000.00, and it further appears that the railway companies are of the view that the wages paid railway employees in Canada ought to be the same as that adopted in corresponding territories in the U.S., as the class of work is the same in both countries. That there is a large interchange of traffic, and that as a result, many employees work in both countries; and on the further grounds that different organizations are international in their scope, and that heretofore the wage scale in both countries have been relatively the same. That in view of the increased cost of living, wages

£1,202,281 in 1916, and the deficit of the Canadian Northern largely increased, while the Canadian Pacific net earnings in the first six months of this year decreased some \$7,000,000, and the increased scale of wages as contemplated will cost that company alone \$15,000,000 over and above its present costs. That in order to enable the railways of Canada to meet the increased wage charges which they will be obliged to pay by reason of the increases hereinbefore referred to, the Minister of Railways and Canals believes that similar action ought to be taken in Canada as was taken under similar cir-



cumstances in the United States, and that freight rates be raised in Canada as such rates have been raised in adjacent United States territory.

The Minister recommends, under the authority of the War Measures Act:—That the scale of wages of railway employees as fixed by the McAdoo award in U.S. territory, including any amendments or extensions thereof, be applied in Canadian territory, in so far as all lines of railway owned, operated or controlled by

the government, are concerned. That the wage scales of privately owned railways companies in Canada should be similarly advanced. That increases be made in the freight rates of all Canadian railway carriers, subject to the jurisdiction of Parliament, as have been made in the rates of U.S. carriers by the Interstate Commerce Commission, and under orders of the Director General of Railroad Administration of the U.S. That on the acceptance

by the Canadian Pacific, Grand Trunk, Canadian Northern and other railway companies of the said McAdoo schedule, the Board of Railway Commissioners be required to forthwith prepare a schedule of rates which will grant similar increases in railway freight rates in Canada to the increases already granted in U.S. territory, effective as of Aug. 1, 1918. The committee concur in the foregoing recommendation, and submit the same for approval.

## The Chief Railway Commissioner's Report Recommending Increases in Rates.

Following is the report made by Sir Henry Drayton on July 25, on which the order in council of July 27 was based:—

Under order in council 1768, the opinion is expressed that, in view of the increased cost of living, the wages in Canadian territory should be increased as increased in United States territory by the award commonly known as the McAdoo award, as the same may from time to time be amended or extended, in so far as the Government railway systems are concerned; and that it is advisable, in the public interests, that the companies privately owned should make similar increases to their employees. The order definitely advances the scale of wages of railway employees, as fixed by the McAdoo award, for lines of railway owned, operated, or controlled by the government, and recommends that the wage scale of privately owned railway companies in Canada should be similarly advanced. The order further provides that should the privately owned railway companies adopt the McAdoo schedule, the Board of Railway Commissioners shall forthwith prepare a schedule of rates which will grant similar increases in railway freight rates in Canada to the increases already granted in U.S. territory, effective as of Aug. 1, 1918. The railway companies have notified their employees of their acceptance of the McAdoo scale. The effect of the order is to reimburse the companies for the additional increased cost to which they will be put by the adoption of the scale and in their railway operation. The advance is limited to freight rates, and is also limited to the advances already made in U.S. territory for the same purpose. The estimates of the increased costs filed by the Canadian Railway War Board show a total of \$50,616,226, in addition to which there are further claims to be settled by the McAdoo award, which, if settled adversely to the companies, might call for an additional \$19,930,000, making a possible outlay of \$70,546,260.

The McAdoo award is popularly supposed to increase freight rates 25%. In some instances, not amounting, however, to a great volume, the McAdoo award exceeds this percentage. In a large number of instances, owing to maximum advance limitations and to a flat rate increase, which, while advancing in a higher percentage the rate for the shorter mileages, holds down all longer movements, the increase of 25% is not obtained. The Railway Statistics for 1917 show the total freight earnings of all systems in Canada as amounting to \$215,245,256.49. This includes railways which are not under the Dominion Parliament's jurisdiction and whose increases are not mirrored in the companies' estimates. The difference, however, would not be very great. Assuming, however, that the whole amount represented earnings of companies under Dominion jurisdiction, and assuming, further, that the increases under the McAdoo scale would net in gross the whole 25%, which they will not, the total amount of

the resultant increases under the McAdoo award would amount to \$53,811,314. These figures, however, cannot be accepted. On the one hand, the freight earnings in 1917 were very large—the volume may not prove representative—but, on the other hand, as rates have already been increased, the resultant gross revenues may well be much larger. As the board has not had the time necessary to compile statistics based on the newer rates, the U.S. increases, which were arrived at as necessary in U.S. territory after much investigation, are treated as those necessary, subject to the recommendation hereinafter made for rate reduction. The increases herein covered are those permitted under the order of the Director-General of the U.S. Railroad Administration, when the Canadian rate situation permits the adoption of the whole increase, and in other instances the extent that the increases may be adopted.

Different action has been taken in the U.S. in connection with the eastern and western territories. Different action has also been taken by the board. In order to arrive properly at a conclusion, the different increases already granted by the board in Canada in many instances will have to be deducted before the gross increases granted in the U.S. are given full effect. As the increases made by the board differ in eastern territory, as against the western territory, it is necessary that the matter be dealt with separately. Rate decisions increasing rates in eastern territory have been made from time to time in both jurisdictions. At a comparatively recent date the rates in eastern U.S. territory were increased by varying, but large, percentages. No such increase took place in Canada, but a general increase was made in Canada under the board's judgment in the 15% case. It is impossible at the moment to report the full effect of the increases in both countries for the past few years. In arriving at the net increase which ought to be given in Canada, in order to make similar increases to those made in the U.S., the board, therefore, has not considered any increase granted in either jurisdiction prior to the application of the so-called 15% case in both countries, justification for these applications being the increase of all costs, and, therefore, a proper point at which to commence.

**Territory East of Fort William—Class Rates.**—The Interstate Commerce Commission on June 29, 1917, granted a 15% increase in class rates in eastern U.S. territory. This board made a similar increase in class rates in eastern territory on Dec. 26, 1917. The order of the Director General of the U.S. Railroad Administration (for the sake of brevity, hereinafter called the "McAdoo order"), gives a direct increase of 25% in U.S. eastern class rates. As similar increases have been granted in both territories, in order to bring the final increase to a parity, an increase of 25% in Canadian territory ought to be made in the existing sched-

ules. A result of the McAdoo order is to create a direct advance in the minimum charge. As a result of this increase, all class rates are increased more than 25%, in so far as all movements up to 25 miles are concerned.

Sec. 1, ss. (d) of the McAdoo order reads: "After such increase, no rates shall be applied on any traffic moving under class rates lower than the amount in cents per 100 lb. for the respective classes as shown below for the several classifications."

Official Classification scale.					
1	2	3	4	5	6
25	21½	17	12½	9	7
cents per 100 lb.					

In order to carry the McAdoo increase into effect in Canada, while it will be necessary to repeat its provision as to minima, the proper first class minimum rate in Canadian territory is 24c, rather than 25c, having regard to the Canadian rate scale. This is practically the same increase.

In addition to the percentage increase, the McAdoo order provides that the minimum charge on less than carload shipments shall be that provided in the classification governing, but in no case less than 50c. The minimum charge in Canada is in no case less than 35c. The increase involved, therefore, is 15c.

**Commodity Rates.**—Rates on coal were increased by the board's order of Dec. 26, 1917, by 15c a ton flat. Similar increases were since granted by the Interstate Commerce Commission. The increases, however, were not put generally into effect as in Canadian eastern territory. The McAdoo order, however, reads:—

"Where rates have not been increased since June 1, 1917, the increase to be made now shall be determined by first adding to the present rate 15c a ton, net or gross as rated, or if an increase of less than 15c a ton, net or gross as rated, has been made since that date, then by first adding to the present rate the difference between the amount of that increase and 15c a ton, net or gross as rated; and to the rates so constructed the above increases shall now be added."

As a result, the increases granted under the McAdoo order for the coal traffic are increases calculated either on a previous 15c advance, or else upon a 15c advance made necessary and justified by the order itself. The conditions are, therefore, similar in the two territories. In order to give the railways in Canada similar increases as in the U.S., it will be necessary to adopt the section of the McAdoo order giving the coal schedules, reading as follows:—

"Where rate is 0 to 49c a ton, 15c a net ton of 2,000 lb.  
 "Where rate is 50 to 99c a ton, 20c a net ton of 2,000 lb.  
 "Where rate is \$1 to \$1.99 a ton, 30c a net ton of 2,000 lb.  
 "Where rate is \$2 to \$2.99 a ton, 40c a net ton of 2,000 lb.  
 "Where rate is \$3 or higher a ton, 50c a net ton of 2,000 lb."

Coke stands in exactly the same position as coal in so far as increases in both countries are concerned. The increase in the McAdoo award, however, is higher than in the case of coal, the rates being advanced to the following scale:—



"Where rate is 0 to 49c a ton, 15c a net ton of 2,000 lb.

"Where rate is 50 to 99c a ton, 25c a net ton of 2,000 lb.

"Where rate is \$1 to \$1.99 a ton, 40c a net ton of 2,000 lb.

"Where rate is \$2 to \$2.99 a ton, 60c a net ton of 2,000 lb.

"Where rate is \$3 or higher a ton, 75c a net ton of 2,000 lb."

It is unfortunate that through rates do not apply on movements of coal and coke to Canadian points. Prior to the McAdoo order, the rate on anthracite in U.S. territory was \$2.15 to Buffalo. Under the McAdoo order that rate became \$2.60. The present Buffalo-Toronto rate is 81c. Under the McAdoo order that rate would become \$1. The increase on the McAdoo order, if the traffic moved under a joint tariff, would be held down to an increase of 50c in all; a difference of 14c, as against an increase under the present system of 64c. This matter is entirely out of the hands of the Canadian railway companies or this board.

**Iron Ores.**—While commodity rates were generally advanced by the Interstate Commerce Commission, iron ores were made an exception in Canadian eastern territory. This board increased the rates on them 15%. The McAdoo order deals with the movement of this commodity as follows:—

"30c a net ton of 2,000 lb. except that no increase shall be made in the rates on ex-lake ore that has paid one increased rail rate before reaching lake vessel."

The reference to an increased rail rate in connection with the boat movement does not of necessity show any general increase in the iron ore rate. The board is not advised of any general increase in U.S. territory. The effect of the 30c increase is to give a greater increase than that already given by the board on all traffic carried at a rate of less than \$2 a ton, while it holds down the increase for the longer movements. To place the increases on a parity, the board's increase of 15% should be struck out and 30c a net ton added to the former Canadian rate.

**Stone, artificial and natural, building and monumental, except carved, lettered, polished or traced.**—In U.S. territory the Interstate Commerce Commission by its order of Mar. 12, 1918, increased the commodity rates, with certain exceptions in which stone is not included, by 15%. The board made a similar increase in its judgment of Dec., 1917, in eastern territory. The increase in the McAdoo order amounts to 2c per 100 lb., and the like increase will follow in Canadian territory.

**Stone, broken, crushed and ground.**—This stone is of low value and for that reason the Canadian board held down the increase in its 15% case to a flat addition of 5c a ton. An increase was allowed of 15% in U.S. territory. As many of the hauls are comparatively short, there probably is not much disparity in the results in the two countries; the Canadian increase would be somewhat the smaller. The advance under the McAdoo order is 1c per 100 lb. The same increase should be made in corresponding Canadian territory.

**Sand and Gravel.**—These rates are in exactly the same position as stone, broken, crushed and ground. The McAdoo order allows a similar increase of 1c per 100 lb., and the same increase should be allowed here.

**Brick, except enameled or glazed.**—Similar increases have been granted in both countries by the respective commissions. The McAdoo order allows an advance of 2c per 100 lb., which should also be permitted in Eastern Canada.

**Cement.**—An increase of 15% has already been made in Canada. Specific ad-

vances were also allowed by the Interstate Commerce Commission on Jan. 15, 1918, is so far as a very large amount of traffic in U.S. territory is concerned. It is impossible to state what the actual results of the increase over the whole field may be, increases having been made in both territories, some of those in the U.S. being much heavier than the Canadian increase of 15%. The increase under the McAdoo order, which amounts to 2c per 100 lb., can be applied.

**Lime and Plaster.**—Lime is not excepted from the increase of 15% in commodity rates given by the Interstate Commerce Commission and already has been increased by the board 15%. The addition of the increase under the McAdoo order of 1½c per 100 lb. in Eastern Canada will restore the parity.

**Lumber and other forest products not otherwise herein specifically dealt with.**—An increase of 15% was granted by the board in Eastern Canada. An increase was also given in U.S. eastern territory by the Interstate Commerce Commission, but the increase made by the Interstate Commerce Commission was held down to an increase of 1c per 100 lb. In order to put the increase on a parity, the increase of 15% already allowed by the board will have to be taken off, and 1c added to the former tariff, which will then be increased by 25%, but not exceeding 5c per 100 lb.

**Pulpwood.**—The Canadian board allowed an increase of 15% on pulpwood. In the Maine and New Hampshire districts, where pulpwood is produced and comes directly into competition with Canadian pulpwood, the U.S. railways put into force an advance of 15% before the McAdoo order was made, and on international business the increase granted by the McAdoo order, which amounts to 25%, but not exceeding 5c per 100 lb., is already in effect. Parity is, therefore, obtained by increasing the present rates in Canada as provided by the McAdoo order.

**Cordwood, slabs and mill refuse for fuel purposes.**—The rates on these articles were advanced 15% in Canada under the board's judgment. Under the Interstate Commerce Commission order an increase was granted of 1c per 100 lb. in some instances and 15% in others. Under the McAdoo order the rates take an advance of 25%, but not exceeding an increase of 5c per 100 lb. Taking the rates for a 60-mile haul, the Canadian position is as follows:—Prior to the 15% increase, the rate was 4¼c, the increase being to 5c. Applying the McAdoo order on the present Canadian rate of 5c, the rate would become 6½c. A considerable quantity of cordwood is hauled 125 miles. The old rate for this distance was 5¼c; the 15% case made it 6c, and the McAdoo advance would make it 7½c; while, if the Interstate Commerce Commission's increase of 1c was added to the original rate and the McAdoo increase added, the rate would be 8c. The railways' attention has been called to the fact that owing to the shortage of coal it is desirable that as much cordwood be carried as possible. While the railways insist that the expenses to which they have been put, having particular regard to the recent increase in wages, are such that the whole increase of the McAdoo order would be absolutely required, under the circumstances they raise no objection if, instead of applying the full increase, a flat increase of 1c over the present rate is applied to the whole movement. The result would be that the increase on this commodity would make the new rate for 60 miles 6c instead of 6½c, and for 125 miles 7c instead of 7½c.

**Wheat.**—The board advanced the rate in eastern territory 15%, subject to a

maximum increase of 2c per 100 lb. The Interstate Commerce Commission had advanced the rate in U.S. territory 15%, without limiting the increase by a maximum. Comparative increases will be secured by the companies carrying the board's former judgment into effect, without the limit imposed of 2c per 100 lb., and adding the increase provided by the McAdoo order, which amounts to 25%, but not exceeding an increase of 6c per 100 lb.

**Other Grains, Flour and other mill products.**—These rates should be treated in the same way as the wheat rates. The McAdoo order in dealing with them reads:—"25%, but not exceeding an increase of 6c per 100 lb., and increased rates shall not be less than new rates on wheat."

**Livestock.**—Similar increases have been made in both countries by the respective commissions. The McAdoo order increases the rates 25%, but not exceeding an increase of 7c per 100 lb. where rates are published per 100 lb., or \$15 per standard 36-ft. car where rates are published per car.

**Packing House Products and Fresh Meats.**—An increase of 15% has been made in both countries by the respective commissions. The McAdoo order makes a further increase of 25%, except that the rates published from all Missouri River points to Mississippi River territory and east thereof shall be the same as the new rates from St. Joseph, Mo. The exception is without significance, having regard to territory contiguous to Canada. The adoption of the McAdoo order will make a parity of increase.

**Bullion, base (copper or lead), pig or slab, and other smelter products.**—15% increases have already been granted in both countries. The McAdoo order increases the rates 25%, and may be adopted.

**Sugar, including syrup and molasses, where sugar rates apply thereto.**—A 15% increase was granted by the Interstate Commerce Commission. A 15% increase was also granted by the board. Canadian eastern territory is contiguous to U.S. territory covered by the Official Classification. Under the McAdoo order, sugar rates are to be advanced 25%, except that where the Official Classification applies the 5th class rates as increased will apply. Commodity rates for sugar were in effect in U.S. eastern territory prior to the McAdoo order and are today in effect in eastern Canada. Sugar classifies 5th class, and only moves on 5th class in so far as the all rail movement from eastern to western Canada is concerned. The district covered by sugar commodity tariffs stops at North Bay, on the Grand Trunk, and at Sudbury on the C.P.R. The effect of the McAdoo order is to increase the rates on sugar between points in the U.S. formerly covered by commodity tariffs to a greater extent than 25%. For example, the former commodity rate on sugar from New York to Detroit was 24½c. Under the McAdoo order it now becomes 35c, an increase of 42%. From New York to Chicago the commodity rate was 32½c; new rate 45c, an increase of 43%. The New York to St. Paul and Duluth rate was 38½c; new rate 65c, an increase of 69%. As the commodity rates in Eastern Canada were not based on any fixed proportion of the 5th class, the percentage of the resulting increase would change in almost every instance. As similar increases were made in both countries before the McAdoo order, the parity of treatment in increases will be obtained by providing for an increase of 25%, except that in Canada, where the Canadian



Freight Classification applies, the 5th class rate as increased would be substituted.

The effect of the McAdoo order on the sugar movement from Montreal to Toronto would be as follows:—The present rate is 18½¢ per 100 lb., while the present 5th class rate is 26½¢, and as increased under the McAdoo order would be 33¢. As a result, the rate would be increased 14½¢ per 100 lb., or 78.3%. The increase would make the freight costs 0.33¢ a lb., as against 0.185¢ a lb., and on a 10 lb. purchase by the consumer 3.3¢, as against 1.85¢.

**Ice.**—No authority to increase ice rates in U.S. eastern territory prior to the McAdoo order appears. Under these circumstances, the increase of 15% allowed by the board should be cancelled, and the McAdoo advance of 25% should be calculated on the former rate.

Commodity rates not included in the foregoing should be increased 25%, as allowed by the McAdoo order.

**Territory West of Fort William.**—Class rates.—No increase was made in class rates in western territory by the Interstate Commerce Commission. An increase of 15% was allowed by this board. As a result, the increase granted by this board should be cancelled and the 25% increase allowed by the McAdoo order calculated on the old rates. The position in so far as minimum rates are concerned is similar to the position already covered, having regard to the eastern rates. The result is that the same minimum of 24¢ 1st class, in view of the Canadian tariff construction, should be adopted in lieu of the 25¢ minimum provided by the McAdoo order. The minimum charge on less than carload shipments will also be increased so as to provide for a minimum charge of 50¢, instead of 35¢, as in eastern territory.

**Coal.**—The McAdoo order makes the same increases on coal as in eastern territory, and in view of the provision of the order that in any case where a flat 15¢ had not already been allowed the increased rate should be calculated upon that basis, makes the situation such that to arrive at a comparative increase the full McAdoo increases must be adopted as in eastern territory.

**Coke.**—The position as to coke is exactly the same as to coal, and the increases here, again, are the same as already shown for eastern territory.

**Iron Ores.**—This is not an important movement in western Canada. No increase was made in the U.S. rate prior to the McAdoo order, which allows a flat increase of 30¢ a net ton of 2,000 lb., except that no increase shall be made in rates on ex-lake ore that has paid one increased rate before reaching lake vessel. As a result, the existing tariffs to cover this movement should be cancelled and the 30¢ a net ton allowed by the McAdoo order added to the rates existing prior to the 15% case.

**Other Ores.**—Ores other than iron under the McAdoo order are covered by a general increase of 25%. The U.S. rate situation does not at all compare with the situation in western Canada. Ore rates to western Canadian smelters are compiled for the lower values on the rubble and dimension stone commodity mileage basis, on values exceeding \$50, to \$100 on the 10th class distributing rates, and on values exceeding \$100, on the 10th class standard rates. In the U.S., however, the ore rates have no such relation. It is inadvisable to change the Canadian basis. Increases, however, can be obtained

by advancing the Canadian rates in the same manner as the McAdoo award advances the commodity and class rates upon which the Canadian rates are based. The district particularly interested is the Kootenay. On low grade ores of the value of \$5, the old rate was \$1.35 a ton from Kimberley to Trail. An increase of 10% has since been made, so that the existing rate is \$1.50 a ton. Under the basis recommended this rate will become \$1.55 a ton. If the straight McAdoo increase had been applied, the rate would become \$1.70 a ton. For the same movement on ores of \$15 a ton the old rate was \$1.65, increased to \$1.80, and the proposed increased rate will be \$1.85. Under the McAdoo award the increased rate would amount to \$2.10.

The increases on the rubble and stone commodities are but 1¢ per 100 lb., and the increases in the ore rates are thus held down. Values from \$25 to \$50, inclusive, are based on the dimension stone commodity tariff. The increase here under the McAdoo order is 2¢ per 100 lb., and the result is that on the same movement of ore of the \$25 value, the old rate of \$1.90 a ton, which has been increased to \$2.10 a ton, and would move at a rate of \$2.30 a ton. Under the McAdoo order the rate would be \$2.40.

For the \$50 ore the old was \$2.80, the rate as increased is \$3.10, and the increase which should be allowed would bring the rate up to \$3.20. In this case the McAdoo order would allow an increased rate of \$3.50. On \$100 ore the old rate was \$4 a ton; as increased, \$4.40 a ton, and would become \$5. It is to be observed that the basis of the McAdoo increase would make the same \$5 rate.

Over and above the ordinary ore rates there are other ore rates covering train load lots. These have been increased in Canadian territory. The increases granted ought to be disallowed and the new rates be based on the former rates, plus an advance by 25%, as per the McAdoo order.

**Stone, artificial and natural, building and monumental, except carved, lettered, polished or traced.**—The rates on these commodities were advanced by the board in the 15% case. No advance was made by the Interstate Commerce Commission. The advanced tariff approved by the board should be cancelled, and the 2¢ per 100 lb. called for by the McAdoo order added to the tariffs as they existed prior to the 15% case.

**Stone, broken, crushed and ground, sand and gravel.**—The rates on these commodities were advanced by the board in the 15% case. No advance was made by the Interstate Commerce Commission. The advanced tariff approved by the board should be cancelled, and the 1¢ per 100 lb. called for by the McAdoo order added to the tariffs as they existed prior to the 15% case.

**Brick, except enameled or glazed.**—The rates on this commodity were advanced by the board in the 15% case. No advance was made by the Interstate Commerce Commission. The advanced tariff approved by the board should be cancelled and the 2¢ per 100 lb. called for by the McAdoo order added to the tariffs as they existed prior to the 15% case.

**Cement.**—The position of relative increases is similar to that in eastern territory and the same action may be taken.

**Lime.**—An increase of 15% has already been made in Canada. No increases were allowed by the Interstate Commerce Commission. The advanced tariff approved by the board must be cancelled and the increase under the McAdoo order, which

amounts to 1½¢ per 100 lb., applied in the former rate.

**Lumber.**—The most important movement in western territory is from British Columbia, which province, together with Washington and Oregon, are closely in relation one to the other in the production of lumber. The Canadian mills sell in U.S. territory in competition with the U.S. producer, and the U.S. producers sell in Canadian territory in competition with British Columbia mills. The original rates were the same. The rate from Vancouver to Winnipeg was 40¢. The rate from Portland and from Seattle to St. Paul and Winnipeg was also 40¢, the Winnipeg rate being competitive. Some years ago the U.S. lines, with the subsequent approval of the Interstate Commerce Commission, advanced their rate from 40¢ to 45¢ to St. Paul, although for competitive purposes, owing to the fact that Canadian lines could not increase their rates, the U.S. 40¢ rate to Winnipeg was maintained.

The matter of lumber rates was considered by the board in the 15% case. The situation was found to be such that no flat 15% increase could be allowed. The consideration of chief importance in lumber rates was found to be the relation one to the other, having regard to the different points of production in Canadian territory. Certain advances were allowed, and among them the rate Vancouver to Winnipeg was advanced to 45¢. The main rate was, therefore, restored to a parity with the U.S. rate as formerly. Under the McAdoo order the U.S. lines have increased their rate to St. Paul and Minneapolis from 45¢ to 50¢. Other rates in U.S. territory have been advanced to the full 25% allowed by the McAdoo order, subject to the maximum of 5¢. The increase given by the board in the 15% case practically restored parity between Canadian and U.S. rates. If the increase allowed by the McAdoo order of 25%, subject to a maximum of 5¢ per 100 lb., is allowed in the existing tariffs, that parity would be maintained. The increases will, of course, extend not only to movements in local territory, but also to eastern Canada and to the eastern States.

Other sources of local supply are the northern spruce belt and the Lake of the Woods, Rainy River and Thunder Bay districts. Under the McAdoo order these rates will take the same advance.

**Grain and Grain Products to Fort William and Port Arthur.**—These rates in Canadian western territory are lower than the rates in contiguous U.S. territory. The U.S. hauls are to the terminals at St. Paul, Minneapolis and Lake Superior ports. All these terminals take the same rate. The haul within Canadian territory is to Port Arthur and Fort William. For example, the rate from Garrison, Mont., to Minneapolis, 1,172 miles, was 33¢. The haul from Lethbridge to Fort William, 1,177 miles, had a 23¢ rate. Under the McAdoo order the rate from Garrison moved up a further 6¢, making that rate 39¢, while under the board's order the grain rate from Lethbridge was increased 2¢, making that rate 25¢, so that the difference became much accentuated. The parity of increase in haul, although, of course, not in rate, which is not for a moment recommended, can be easily obtained by adding the increase under the McAdoo order to the old rates for mileages substantially similar to those in the U.S. The following table is submitted as showing the results of the application of the McAdoo scale on this basis to points representing different mileages:—



From.	Miles	Old rate	Present rate as increased by board	New rate based on McAdoo incr. for similar U. S. mileages
Winnipeg, Man. . . . .	420-CP	10	12	14
Portage la Prairie, Man. . . . .	475-CP	12	14	16
Brandon, Man. . . . .	553-CP	13	15	17½
Minnedosa, Man. . . . .	554-CP	13	15	17½
Souris, Man. . . . .	570-CP	14	16	18½
Dauphin, Man. . . . .	613-CN	15	17	19½
Arcole, Sask. . . . .	672-CP	16	18	21½
Estevan, Sask. . . . .	710-CP	17	19	22½
Weyburn, Sask. . . . .	735-CP	18	20	24
Regina, Sask. . . . .	777-CP	18	20	24
Moose Jaw, Sask. . . . .	819-CP	18	20	24
Swift Current, Sask. . . . .	929-CP	20	22	26
Maple Creek, Sask. . . . .	1014-CP	21	23	27
Saskatoon, Sask. . . . .	900-CP	22	24	28
Biggar, Sask. . . . .	960-GTP	23	25	29
Kindersley, Sask. . . . .	1066-CN	24	26	30
Kerrobert, Sask. . . . .	1041-CP	24	26	30
Hanna, Alta. . . . .	1202-CN	25	27	31
Medicine Hat, Alta. . . . .	1077-CP	22	24	28
Prince Albert, Sask. . . . .	977-CN	23	25	29
Lethbridge, Alta. . . . .	1178-CP	23	25	29
Calgary, Alta. . . . .	1243-CP	24	26	30
High River, Alta. . . . .	1278-CP	25	27	31
Red Deer, Alta. . . . .	1282-CP	25	27	31
Edmonton, Alta. . . . .	1243-GTP	25	27	31

**Grain and grain products** between local points and the Pacific coast.—In so far as local rates and rates to Vancouver are concerned, the McAdoo order would also increase these 25%, with a maximum of 6c per 100 lb. The simplest way of dealing with these movements, which are not in any way related to the U.S. market or U.S. competition, is to disallow the increase already made by the board and calculate the increases on the old rates.

**Livestock.**—Attention has not been called to any increase either on the Great Northern or on the Northern Pacific Railways. These companies occupy territory contiguous to that of Canadian carriers in the west. Increases in the U.S. livestock rates in the more southerly territory were granted in 1915. These increases would not, however, appear to control the situation. The increase already granted by the board should, therefore, be struck out and the increase allowed under the McAdoo order of 25%, but not exceeding an increase of 7c per 100 lb. for rates published per 100 lb., or \$15 per standard 36-ft. car, where rates are published per car, added.

**Packing house products** and fresh meats.—These rates were advanced by the board in the 15% case. No increase was allowed by the Interstate Commerce Commission. The advance under the McAdoo order is 25%. The advance tariffs authorized by the board should be cancelled and the increase calculated on the tariffs in effect prior to Mar. 15, 1918.

**Bullion**, base (copper or lead), pig or slab, and other smelter products.—The McAdoo order allows an increase of 25% on existing rates, except that:—1. Rates from producing points in Arizona, California, Idaho, Montana, Nevada, New Mexico, Oregon, Utah and Washington to New York, N.Y., shall be \$16.50 a net ton, with established differentials to other Atlantic seaboard points; and 2. Rates from points in Colorado and El Paso, Texas, to Atlantic seaboard points shall be increased \$6.50 a net ton. Separately established rates used as factors in making through rates to the Atlantic seaboard shall be increased in amounts sufficient to protect the through rates as above increased.

There are three smelters in British Columbia, one at Greenwood, one at Grand Forks, and one at Tadanac (Trail). The chief movement of the smelter products in Canadian territory is to Toronto, Hamilton and Montreal. The exact percentage of increase, owing to the blanket form of the McAdoo order, is somewhat

difficult to apply to any mileage basis, or to the Canadian rate basis. Under the order, the rates to Buffalo from Northport, which is the U.S. smelter nearest to the Canadian group, is 71½c per 100 lb. An increased rate to the Canadian carriers, which would place Toronto and Hamilton on the same basis as Buffalo, would be reasonable and fair. This 71½c rate produces a rate per ton of \$14.30. The present rate to Toronto for the Canadian haul is \$13.40. Under the McAdoo order the Boston rate becomes \$16.90 a ton, while the New York rate is \$16.30. The Montreal rate ought to be held down to the New York rate. To territory east of Montreal in Canada the usual arbitraries should be added to the Montreal rate. Rates to points in Western Canada should take the advance of 25%, as provided by the McAdoo order. In view of conditions existing at Canadian smelters and the cost of production of zinc, the present zinc rates for domestic purposes should be reduced to the copper and lead rates already referred to.

**Sugar, Syrup and Molasses.**—Sugar is refined in western territory in Vancouver, whence the movement extends as far east as Winnipeg. The McAdoo order is difficult to apply to this traffic. For example, it provides that from points in California to points taking Missouri River rates and those related thereto, under the Interstate Commerce Commission's 4th section order, and to points east of the Missouri River, an increase of 22c per 100 lb. was made. The order, of course, includes an increase of 25%, except in specific cases. As already pointed out in connection with the eastern movement, it makes a large increase by cancelling the commodity rates and making the increased 5th class rates applicable. Sugar from Vancouver to destinations in the west moves under commodity rates, as eastern sugar moves locally in Eastern Canada. The eastern refiner has long alleged an undue preference which enables the British Columbia shipments to be carried as far as Winnipeg under the commodity tariff, while he, shipping all rail to the western provinces, has to pay the 5th class rates, and the complaint has also been made that the B.C. tariff is out of scale. Judgment has been reserved for a considerable time by the board in this question, but a readjustment of the sugar rates will have to be made before the question is properly and finally determined. The fairest way of increasing the B.C. sugar rates would appear to be to apply to them the same basis and principles as recommended for eastern territory.

**Commodity rates** not included in the foregoing should be advanced by adding the increase of 25% provided by the McAdoo order, to the rates as they existed prior to the increase of 15% permitted by the board, and the board's increase disallowed.

**General class rates** between points in Eastern and Western Canada.—The eastern portion of these rates was increased 6c in the 1st class shortly before the 15% application had been made, a further increase of 10% being then allowed by the board. The increase in western Canada was 15%. The like U.S. rates were increased, in so far as eastern territory was concerned approximately 10%, this increase being made on Mar. 15, 1918, the former New York-Duluth rate being \$1.18 1st class and increased in July, 1917, to \$1.30. Under the McAdoo order the rates have increased 25%, so that the present rate is \$1.62½. In order to produce a like parity in Canada, the McAdoo increase in eastern territory of 25% will be calculated on the existing rates, but in

western territory the 15% already allowed by the board must be disallowed and a 25% increase made on the old rates.

**Commodity rates** between points in Eastern and Western Canada.—Specific commodity rates in the separate territories have already been dealt with, and in both territories commodity rates which are not covered by specific provision are shown to require an increase of 25% in order to give the increase called for under the McAdoo order. In connection with commodity rates between eastern and western Canada, the appropriate increases would, therefore, be those which would obtain hereunder in the different territories in like commodity rates therein, in so far as the portion of the rate in each territory is concerned.

**Both export and import rates** are cancelled by the McAdoo order, although the right to make a differential rate has been reserved. The Canadian rate structure and traffic conditions do not permit similar action.

The question of export rates had already been dealt with by the board.

The increases in import rates which would result by the general adoption of the increased scales for local tariffs as provided by the McAdoo order ought not to be allowed. With the longer rail haul in Canada, and the different traffic conditions obtaining, in order to do business the railways in the past have deemed it necessary to maintain an import rate basis which would be as low as that obtaining from the U.S. port enjoying the lowest rate. Just so soon as these rates became equalled by local rates in Canadian territory, local rates from that point onward obtained. The only increase that ought to be permitted in import rates, if the very proper policy of the past is continued, is to authorize increases in the import rates, subject to the limitation that the rates as increased shall not exceed in any particular class or commodity the lowest import rates to the same points, from Baltimore or any North Atlantic seaport in the U.S.

**Disposition of Fractions.**—In applying rates fractions should be disposed of as follows:—

Rates in cents or in dollars and cents per 100 lb. or per package: Fractions of less than ¼ or 0.25 to be omitted. Fractions of ¼ or 0.25, or greater, but less than ¾ or 0.75, to be shown as ½. Fractions of ¾ or 0.75, or greater, to be increased to the next whole figure.

Rates per ton: Amounts of less than 5c to be omitted. Amounts of 5c or greater, but less than 10c, to be increased to 10c.

Rates per car: Amounts of less than 25c to be omitted. Amounts of 25c or greater, but less than 75c, to be shown as 50c. Amounts of 75c or greater, but less than \$1, to be increased to \$1.

**Observance of Differentials.**—The McAdoo order contains the following provision:—

"In establishing the freight rates herein ordered, while established rate groupings and fixed differentials are not required to be used, their use is desirable, if found practicable, even though certain rates may result which are lower or higher than would otherwise obtain."

There is no objection to the adoption of this clause. As a matter of fact, it merely applies to the scales as advanced, the practice usually followed in the preparation of schedules.

**Miscellaneous.**—It should be pointed out that in the preparation of the schedule of increases in this report the provisions of order in council 1768 have been adhered to, and the directions to establish similar increases to those granted in adjacent U.S. territory have been complied



with to the extent the Canadian rate system and conditions permit. In the result the previously existing parity of rates in Canadian and U.S. territory has been as near as may be preserved, and whenever under the former rate schedules Canadian railway rates have been on a lower rate basis, lower rates in Canada have been maintained. In the general result it will be found that smaller increases will obtain in Canada than in the United States. Where it has been found impracticable to give the full increase allowed in U.S. territory under the McAdoo order, the matter has been fully discussed with the chief traffic officers of the companies chiefly concerned.

It is difficult accurately to forecast the increased gross earnings that the rate increases will give. It is much more difficult to arrive with any degree of accuracy at the result of the net. Traffic conditions and operating expenses constantly change. The U.S. authorities have gone into all the circumstances requiring and the added expenses necessitating a rate increase with much care. As a result of this study, in the opinion of those authorities, the so-called 25% increase was necessary.

Increased costs and war conditions bear even more hardly upon railway conditions in Canada than in the U.S. The Canadian railways themselves are large contributors to increased U.S. freight charges. Railway coal for Quebec, Ontario, and a considerable portion of the western prairies is imported from the U.S. coal mines and subject to long hauls by the U.S. carrier. The G.T.R. estimates that the additional amount its coal for the year will cost, owing to the increase of freight rates alone in U.S. territory, is approximately \$800,000, the C.P.R. \$900,000, and the Canadian Northern \$450,000. A large percentage of other raw materials required by the railways in their operation are also imported from the U.S. The Canadian railways not only pay the ordinary duty, but also a special war tax on their coal.

It is also clear that the increases authorized by the McAdoo order, to the extent adopted by order in council 1768, will not give the Canadian railways the increases U.S. lines receive under it. No increases are allowed on Canadian lines on passenger sleeping or parlor car tariffs. It is also true that the increases

on a large volume of the traffic will fall a considerable degree short of the 25% increase popularly connected with the McAdoo order, owing to the maximum limitation the order creates and the flat increases in other cases allowed. The order in council was not passed for the purpose of increasing company profits over those of previous years, but for the purpose of meeting the advanced costs of transportation, of preventing strikes, and the collapse of the country's transportation. The railway executives, while stating that the increases allowed will enable transportation to continue in efficiency, claim that such increases will not be sufficient to cover the whole increased cost of operation. Whether this will or will not be the case is largely a matter of speculation. Under all the circumstances, it is submitted that the board be instructed to advise the cabinet, through the Minister of Railways, month by month, the monthly net results of the operations of the three larger systems, i.e., the Grand Trunk, Canadian Pacific, and Canadian Northern, to the end that any increases that may be found to be unnecessary be promptly curtailed.

## Toronto Board of Trade's Protest Against Increased Freight Rates Dismissed.

The Chief Commissioner, Board of Railway Commissioners, Sir Henry Drayton, made the following report to the Dominion Government, Aug. 3:—

A protest has been made by the Toronto Board of Trade against the order in council raising freight rates, and amendments to the order are requested. This application has been referred by the acting Prime Minister to be reported upon. Two questions are raised in the application: (1) It is argued that the new sugar rates "will place upon this staple food product an unwarranted burden," and that it should not be called upon to bear a greater increase than other commodities. It is also submitted that the order should not become effective until Aug. 27, so as to give time to the public to adjust itself to commercial conditions. Complaint is also made in the same city that the increase was made without consulting either the shippers or the general public.

It is important that the basic principles on which the order was made should not be lost sight of. The position with which the government was confronted was that a strike of certain railway employees was imminent; that a lengthy investigation had been made by a competent and in every sense well qualified commission in the United States, as a result of which wages were very substantially advanced in U.S. territory; that the increased cost of living to which the railway employees, in common with the general public, were subject obtained in Canada as well as in the U.S.; and that operating conditions in both countries were largely similar; that, as a measure of justice to railway employees, their wages had been advanced in U.S. territory; and that in order to provide sufficient revenues to cover the increased costs, substantial rate increases had also been made, not only for freight, but passenger traffic as well; that, as a measure of justice to Canadian railway employees, many of whom work on both sides of the line, the government requested Canadian railways under its jurisdiction to adopt the so-called McAdoo wage scale, and for the purpose of providing the necessary funds, directed similar rate advances (although perhaps slightly lower than the advanced rates in U.S. territory), but on freight traffic only.

The rates as fixed by the order in council are war rates, to meet a war emergency. In reporting upon similar increases in Canadian rates to those prescribed by the McAdoo order in U.S. rates, the rates have not been passed upon by the Board of Railway Commissioners as permanent rates. They may bear no relation to what the final rates ought to be, having regard to different commodities, when the war is over and conditions become normal. The pressing necessity was to obtain revenue, in order that strikes might be prevented and transportation carried on. The urgency was immediate and required immediate action. Public hearings in the different provinces, or any hearings at all, could not be held. Complaints many and serious have been made from time to time, showing lack of facilities and unsatisfactory movements; many have come from Toronto. Adequate transportation can only be obtained if either the receipts or the reserves available are sufficient for the purpose of meeting, not only running expenses and maintenance, but also for the purpose of improving, where necessary, any inadequate facility.

Subject to such considerations, I deal with the complaint as to the rates on sugar. Sugar prices to the public have advanced considerably. Nevertheless, the article had moved at low commodity rates, and is carried at a lower basic charge than analogous commodities of probably similar value in the same group of the freight classification, a preference that, whatever its origin, of course has the effect of accentuating the amount of the increase allowed. The added burden complained of is a burden more in percentage than in fact, as compared with relative commodities. United States Director General of Railroads, Mr. McAdoo, was evidently of the opinion that sugar ought to move under its appropriate classification. There is no question but what the added receipts are necessary, and as already pointed out in the main report, the cost of transporting a pound of sugar on the 330-mile haul from Montreal to Toronto had advanced from 0.185c to 0.330c. Expressed in percentage, the increase is undoubtedly great. In view, however, of the present financial neces-

sity (which is by no means confined to the necessities of companies, but is also national, in view of the fact that the country itself now owns and is responsible for a considerably larger mileage than Canada's largest individual railway, (the Canadian Pacific), the money must be obtained. I see no reason why the action taken in U.S. territory should not be duplicated in Canada. On the other hand, apart from the financial emergency and added costs, it ought to be. Sugar in Canada does move under the appropriate 5th class rate for longer mileages in eastern territory. The low commodity rates stop on the G.T.R. at North Bay and on the C.P.R. at Sudbury. There is more justification for applying a lower basis of rates to long hauls than to short hauls. Here the converse is applied. As a matter of justice, sugar rates ought to be placed on the same basis.

I now deal with the date on which the rates ought to become effective. It is much to be regretted that conditions are what they are; that the cost of living has gone up; that the war ever took place; and that, as a result, the costs of railway operation have increased. Unquestionably any advance in rates is a matter of annoyance, and sometimes loss to shippers. Unquestionably, also, the longer the notice that can be given, the less the resultant inconvenience and possible loss. The government, however, was obliged to deal with conditions as it found them. Among those conditions was the pressing necessity for an immediate wage increase without funds with which to meet it.

Reference is made in the Toronto Board of Trade's appeal to the action which has been taken in the U.S. It is true that there Mr. McAdoo's order did not go into effect until 30 days after its date. It is also true that in the U.S. the increased freight rates and the increased wage scale went into effect on June 25, so that the U.S. Railroad Administration obtained the benefit of the rate increase at the same time that it was put to the cost of the wage increase. It is also true that in Canada, in some instances, the new wage scale dates back, but, speaking generally, comes into effect Aug. 1. The railway systems in Canada, therefore, whether owned by the country or by companies,



only receive added revenues 12 days after the added costs have applied. They are thus put to a loss to which the U.S. Railroad Administration has not been subject, and a loss which is serious in view of the large amounts involved. The question raised as to further postponing the date is practically as to whether this loss shall be extended for 15 days more.

In view of the fact that the only complaint as yet received from any board of trade is that of the Toronto Board of Trade, not only for the sake of brevity, but for a more concise statement of the existing situation, I deal with the position of the Toronto shippers on the one hand and the G.T.R. on the other. The G.T.R. does the chief business in Ontario and carries a very large proportion of Toronto's traffic, both in and out. It is certainly fair to say that Toronto, as much as any other municipality, uses and benefits by the service supplied by the G.T.R. Nineteen hundred and sixteen was an exceptionally good year for the G.T.R., war costs in transportation had not commenced to be felt, at least to any serious extent, and the gross was large. War costs did commence appreciably to be shown in the spring of 1917. Bad as the results of 1917 were, the situation in 1918 is, however, worse. The following statement shows the company's gross receipts for the five months, January to May, in each year. It also shows the net receipts after paying costs of operation and taxes:

	1917.			1918.		
	Gross receipts.	Net receipts.		Gross receipts.	Net receipts.	Loss in net.
January . . . . .	\$ 3,788,177	\$ 662,468		\$ 3,236,262	\$ 869,618	\$1,532,086
February . . . . .	3,032,980	108,397		2,774,475	1,179,965	2,288,362
March . . . . .	4,007,624	852,760		4,286,715	65,892	918,652
April . . . . .	3,778,421	944,197		4,988,984	615,721	323,476
May . . . . .	4,566,592	881,347		5,217,271	742,071	139,276
	\$19,173,794	\$3,449,169		\$20,503,707	\$ 757,683	\$4,206,852

After Mar. 15, 1918, the full effect of the increases granted by the board in the so-called 15% case, became apparent, but these rate increases have not covered the constant cost increases. In April and May, 1918, the gross receipts were \$10,206,255, against \$8,345,013 for these months in 1917, resulting in the substantial increase of \$1,861,242, or 22.17%. The net receipts, however, show a very different result. For the same two months in 1918 they were \$1,357,792, against \$1,825,544, a decrease of \$467,752, or 25.06%. Net operations for the two months on the higher rate basis give an operating ratio of 66.696, or in other words leave the company 13.304c out of each dollar earned with which to pay fixed charges and to apply on dividends. For the same period in 1917, operating on the lower rate basis, an operating ratio of 78.124 was secured, with a resultant balance out of each dollar earned of 21.876c. The operating ratio for the whole year 1916 was 73.60, leaving a balance per dollar of 26.40c. The operating ratio for the whole year 1917 was 83.94, leaving a balance per dollar of 16.06c.

The company's fixed charges amount to some \$9,617,979, which have to be paid before the preferred shareholders of the different classes can receive any dividend. If it be assumed that the large increased gross of April and May be maintained, and further assuming that no greater increase takes place in operating costs, and that the employees were denied the benefit of the wage increase provided by the McAdoo scale, and to which the government has found them entitled, the results would be as follows:—Fixed charges for two months period (average of the 12 months), \$1,602,996. Operating net, \$1,357,792. Resultant deficit in running

fixed charges, \$245,204. For the whole year, therefore, adopting these two months as a basis, under the rates as increased by the board and applicable before the order in council was passed, the position of the shareholders would be that not only could no dividends be paid, but \$1,471,224 would have to be found by the shareholders for the purpose of paying fixed charges.

The wage increase which the company is obliged to adopt under the original McAdoo scale and 8 hour day readjustment alone would increase that deficit by some \$7,157,000. It is absolutely obvious that the G.T.R. is in such a position that at the earliest possible moment the full amount of increases which can be given it under the order should accrue to it.

Over and above the fixed charges already referred to, the G.T.R. has outstanding a guaranteed stock issue, as well as 1st, 2nd and 3rd preference stock issues. These guaranteed and preferred stocks amount in all to \$124,503,747. The whole of these large issues obtained no return whatever in 1917. No regard is had whatever to the issue of ordinary stock, which is, however, nearly as large as the total of the guaranteed and preferred issues. No dividend has ever been earned on this stock. In 1916 the amount available for dividends on the guaranteed and preferred stocks amounted to \$3,899,085. It is obvious that this profit to the shareholders can well be described as rea-

sonable, leaving out of consideration the question as to whether the dividends were really earned, in view of the condition of the property, lack of proper maintenance and locomotive power, which have already been reported on.

Many rates in Eastern Canada have always been held down by the rates that the G.T.R. itself has operated on in adjacent U.S. territory, and by the necessity of meeting the low rate scale obtaining in the eastern states, as well as by water competition. The board put into effect its 15% increase just as soon as these factors permitted, and shortly after the G.T.R. increased its tariffs in U.S. territory. The McAdoo order rendered possible the further increase which the government has authorized. This increase, large and all as it is when expressed in percentages, is not sufficient to remunerate the company doing a very large public service for Toronto's shippers.

The G.T.R. is a large system; it has of necessity large terminals in Toronto. Its facilities there, however, are not excessive. The contrary is really the case. I have never seen any charge substantiated that railways were unduly taxed in Canada. The G.T.R., however, in 1917, was assessed by Toronto on its land and buildings \$10,679,028, and the amount of the G.T.R.'s resultant tax bill was \$272,315.21. In 1918, the company's assessment is \$11,178,724. The abnormal tax rate for the year, in view of Toronto's increased expenses, of 30.05 mills, results in a tax charge to the G.T.R. of \$340,951.08, an increase in the one year of \$68,635, or 25.20%. In 1916 the gross earned was \$47,723,936, and in 1917, \$52,125,842, an increase of \$4,401,906. Notwithstanding this increase in gross, the net of 1916 of \$5,842,085 (surplus \$3,899.05, contingen-

cies reserve \$1,944,000) disappeared in 1917 and the reserve was reduced to \$127,715. While the G.T.R. shareholders paid Toronto in 1917 for taxes \$272,315.21 on but a small part of its investment, the result of the use of the whole of the G.T.R. system in the service of the public at large, was that the shareholders not only obtained no profit, but actually lost \$1,816,285. The members of the protestant board of trade are very directly interested in the service now being afforded by the G.T.R. without remuneration to the company's shareholders, and the company's tax payments to the general city fund cannot be a matter of indifference to them. The position of the company in 1918 is shown to be still more unfortunate. With increased gross receipts for the five months already referred to of \$1,329,913, the net receipts of 1917, inadequate as they proved to be, of \$3,449,169, became an actual operating deficit of \$757,683. This deficit, of course, the company has to make good, and in addition has had to find money to the extent of \$4,642,833 with which to pay fixed charges. Beyond all question the company's situation is indeed one which requires all the relief that the new rates will afford and without further delays.

The larger share of Toronto's business being carried by the G.T.R., that company's position ought properly to be first considered in connection with a Toronto complaint. The C.P.R.'s position is very different to the G.T.R.'s, with the benefits it has received under the original agreement, the long through hauls it enjoys, and the multiplicity of its operations, coupled with the fact that much more money has been put into its property actually in public service than its total bond and stock liabilities. No comparison exists between the two companies. But as a matter of fact, if the earnings of 1917, the drop in net receipts that has already developed in 1918, and the increased costs to which the C.P.R. is now subject to, be considered, unless action had been taken by the government in raising rates, not only would the company earn no surplus over dividends, but the dividends themselves would be impaired. The amount of business the Canadian Northern does in Toronto is relatively small and the increasing deficits of that system too familiar to require comment. I, for the foregoing reasons, beg to report that in my opinion the Toronto Board of Trade's application be dismissed.

The Cornwall Terminal Co., Ltd., the incorporation of which, with \$100,000 capital, and office at Montreal, was announced in our last issue, is associated with the Meigs Pulpwood Co.'s interests in New York, and it is the company's intention to carry on a lumber and pulpwood business, for which it is applying for a license in Ontario.

The Northern Pacific Ry. announced Aug. 18, it would suspend its freight and passenger service between Vancouver and Huntington, B.C. It is expected that the company's offices in Vancouver will be closed. The reason given for the change is that the company is desirous of conserving both men and equipment during the present period of pressure owing to war traffic conditions.

The Alberta & Great Waterways Ry. has been given a contract for carrying mail to the end of its track and there on to McMurray, Alta. Heretofore the mails have been taken by Canadian Northern Ry. to Athabasca Landing, thence by motor boat to House River, and then by pack horse to McMurray.



# Steam Railway Statistics for Year Ended June 30, 1917.

Name of Railway	Passengers carried	Passengers carried one mile	Revenue per passenger per mile, cents.	Mileage of revenue passenger trains	Mileage of revenue mixed trains	Mileage revenue freight	Tons of freight carried	Tons carried one mile	Revenue per ton per mile, cents.	Mileage of non revenue trains
Alberta & Great Waterways.....	10,105	573,072	3.869	11,665	20,566	28,077	61,307	5,268,141	0.626	250
Algoma Central & Hudson Bay...	27,142	1,806,461	3.927	59,296	18,928	308,911	866,402	91,477,568	0.744	11,397
Algoma Eastern.....	69,735	1,647,065	2.804	56,470		110,396	2,261,317	26,953,203	1.941	849
Atlantic, Quebec & Western.....	39,471	1,296,019	2.935	26,256	37,411	34,658	169,535	7,184,863	1.382	3,436
Brandon, Saskatchewan & H.B....	24,253	895,106	2.503	43,125		21,032	30,862	1,321,268	1.203	7,389
British Yukon.....	9,605	569,191	9.118	1,262	51,758	22,325	81,187	7,234,200	3.035	5,907
Canada Southern.....	1,686,530	143,723,752	2.346	2,003,748	159,936	1,798,962	9,749,315	1,441,621,450	0.651	48,106
Canada & Gulf Terminal.....	24,713	523,118	3.118		20,450		32,310	854,755	3.186	524
Canadian Government Railways										
Intercolonial.....	4,498,678	315,155,132	1.555	3,238,783	404,461	4,832,116	7,120,511	1,900,097,294	0.576	142,670
International of N. B.....	32,585	1,467,499	2.489	1,940	66,732	19,960	128,982	6,830,276	1.407	6,107
St. John and Quebec.....	42,073	1,175,717	2.416	325	70,356	336	55,581	2,077,887	2.419	2,828
Prince Edward Island.....	393,758	9,748,268	1.661	54,973	282,102	25,141	159,041	6,207,036	3.792	10,260
National Transcontinental...	820,107	50,145,704	1.660	689,670	513,305	2,175,982	3,398,031	1,200,857,918	0.503	77,205
Canadian Northern System.....	10,367,933	324,137,952	2.089	6,329,672	1,969,884	10,185,308	14,406,630	4,597,599,850	0.688	926,560
Canadian Pacific.....	16,267,599	1,438,404,245	1.942	18,577,524	2,099,519	26,068,815	31,334,238	149,186,622,202	0.676	1,020,943
Cape Breton.....	10,392	234,398	2.890		19,406		6,430	190,743	2.584	
Caraquet.....	19,150	792,202	2.891		49,563		41,304	1,693,464	3.166	
Central Canada.....	2,328	111,522	3.759	200	3,700	3,462	8,232	390,919	1.693	100
Central Vermont.....	374,939	3,654,837	3.165	141,954	26,696	68,062	469,632	12,452,779	1.509	5,096
Crows Nest Southern.....	13,054	352,941	3.502	33,072		42,676	198,895	7,584,365	1.099	15,721
Cumberland Ry. & Coal Co.....	44,896	514,499	2.680		29,952	9,738	322,770	2,490,153	3.100	
Dominion Atlantic.....	519,867	19,569,366	2.288	306,039	155,313	114,670	399,106	26,672,361	2.298	10,708
Eastern British Columbia.....	3,206	30,574	5.553		8,304		90,775	867,699	2.985	1,020
Edmonton, Dunvegan & B.C.....	43,967	5,184,564	3.589	90,100	65,135	64,257	170,706	16,944,253	1.549	1,908
Elgin & Havelock.....	7,590	106,260			16,200		8,983	89,830		
Esquimalt & Nanaimo.....	265,720	6,095,270	2.960	150,783	4,120	105,431	475,948	15,812,166	2.712	5,814
Essex Terminal.....					24,000		299,208	1,496,040		
Fredericton & G. L. Coal & Ry. Co.	11,366	243,571	3.152		31,794		163,334	5,650,763	1.522	
Grand Trunk.....	12,112,864	585,618,284	1.901	7,896,179	774,804	10,588,729	21,512,160	4,214,229,916	0.738	528,692
Grand Trunk Pacific.....	402,230	49,268,821	2.126	967,017	178,802	1,513,550	1,725,708	623,645,559	0.731	225,549
Grand Trunk Pacific branch lines..	283,741	13,960,474	2.254	324,834	145,024	407,023	1,040,763	102,677,453	1.104	106,974
Hereford.....	32,094	579,038	3.219	33,390	32,648	8,172	122,543	3,033,272	1.657	2,876
Kettle Valley.....	49,972	5,099,768	2.966	204,162	39,831	174,171	300,563	24,854,982	1.549	60,816
Lotbiniere & Megantic.....	10,446	148,477	2.717		18,780		54,723	792,211	3.643	
Maine Central (Princeton Branch)	96,385	491,564	2.364	3,900	6,105	4,320	127,801	1,161,785	0.605	81
Manitoba Great Northern.....	8,848	202,248	2.721	9,980	24,255	7,138	202,413	6,284,921	0.554	523
Maritime Coal, Ry. & Power Co...	21,001	203,486	3.014		33,263		298,531	3,274,901	2.661	
Massawippi Valley.....	155,880	2,470,859	2.704	87,626	14,072	59,996	558,512	16,543,569	0.880	3,766
Midland of Manitoba.....	66,845	4,147,847	2.333	102,046		50,340	269,164	19,225,973	0.884	132
Moncton & Buctouche.....	331,640	7,829,834	2.471	141,968	151,912	231,049	1,694,075	86,018,107	1.188	7,129
Montreal & Atlantic.....	26,248	566,447	2.185		19,393		22,568	460,278	4.570	838
Morrissey, Fernie & Michel.....	114,000	695,400	1.675		29,700		397,936	2,427,409	2.656	
Napierville Junction.....	22,637	388,072	2.623	4,687	12,972	25,077	668,994	19,222,514	0.765	963
Nelson & Fort Sheppard.....	20,257	537,462	3.257	36,880		18,501	34,711	1,261,966	2.295	5,745
New Brunswick Coal & Ry. Co...	21,728	526,398	2.418		35,515		21,878	723,402	2.393	
New Brunswick & P.E.I.....	14,644	298,502	2.815	396	30,904	12,932	61,197	1,418,030	2.615	2,820
New Westminster Southern.....	5,349	61,084	3.166		12,474	495	102,069	877,801	2.397	
Ottawa & New York.....	133,824	3,249,596	2.441	78,857		65,663	580,704	30,979,122	0.577	20,416
Pere Marquette.....	246,610	4,872,190	2.319	218,799		837,907	2,970,266	507,807,460	0.591	7,764
Quebec Central.....	463,122	19,951,653	2.235	265,824	238,073	228,015	1,158,456	91,096,678	1.334	245,725
Quebec, Montreal & Southern.....	273,127	6,487,822	2.451	124,502	75,228	83,043	461,654	20,293,668	1.382	1,763
Quebec Oriental.....	36,601	2,160,820	2.621	28,028	33,837	80,303	168,726	14,345,284	1.101	9,641
Quebec Ry., Light & Power Co...	81,650	577,265	1.491	5,181		27,594	259,564	2,628,219	3.438	830
Red Mountain.....	10,240	92,026	2.718	10,882		72	41,609	373,929	3.835	
Roberval-Saguenay.....	29,401	458,883	2.692	70,134	248,975		169,090	2,241,256	1.743	
Rutland & Noyan.....	112,453	381,216		4,990		2,181	226,500	766,835		
Salisbury & Albert.....	11,645	324,755			31,185		48,045	1,151,985		
St. Lawrence & Adirondack.....	660,209	13,445,536	1.659	179,969		130,092	1,828,822	70,479,217	1.089	6,341
St. Martins.....	7,764	146,503	2.521		16,550		16,005	240,260	6.034	
Sydney & Louisburg.....	152,473	2,124,738	2.306	24,409	18,440	162,054	3,905,872	58,407,794	1.161	
Temiscouata.....	61,697	1,773,099	2.729	52,919	70,020	4,875	165,393	6,410,978	2.512	14,101
Thousand Islands.....	43,698	263,808	2.943		95,278		39,244	235,464	11.327	
Timiskaming & Northern Ontario.	498,076	30,367,383	2.219	447,307	61,246	514,267	886,912	146,125,191	0.921	28,639
Toronto, Hamilton & Buffalo.....	611,087	18,968,400	2.250	287,913		181,247	3,057,598	113,998,532	1.350	7,847
Vancouver, Victoria & Eastern...	157,147	4,224,255	2.832	116,258	96,557	83,935	1,048,689	33,464,921	0.907	27,478
Victoria & Sidney.....	81,618	1,061,764	2.390	35,470	2,413	7,777	31,286	290,068	6.545	
Victoria Terminal Ry. & Ferry Co.	78,843	78,055	2.383	2,197	151	481	16,370	16,206	6.389	
Wabash.....	564,212	37,866,291	1.012	500,014		1,311,812	3,100,380	650,673,278	0.518	5,744
York and Carleton.....	6,612				7,223		7,940			
	53,749,680	3,150,127,428		44,083,575	8,746,811	62,863,724	121,916,272	1,186,707,851		3,627,901

In addition to the revenue train mileage given in columns 4, 5 and 6, there was a total special revenue train mileage of 102,990, distributed over 24 railways



## Minimum Carload Weights for Commodities.

With a view to accomplishing further progress in the direction of loading freight cars to full capacity, and thereby conserving car supply, upon which it is expected a very heavy demand will be made during the ensuing autumn and winter, particularly, negotiations completed recently, to which representatives of the Board of Railway Commissioners, boards of trade, Canadian Manufacturers Association and the Canadian Railway War Board were parties, have resulted in an agreement that carload minima applying to certain commodities be increased. A statement of the present and new minimum figures with the commodities to which they are related, is given below. These alterations apply in railway commodity tariffs and become effective on legal notice. It is suggested to member lines of the Canadian Railway War Board, that they have tariffs amended without delay so that they may be in a position to take advantage of the new arrangements not later than the time of commencement of the grain movement.

### Minimum Carload Weights.

Commodity.	Present Minimum.	New Minimum.
Acid, Acetic, in barrels	24,000	36,000
Ammonia, Sulphate of	50,000	60,000
Asbestos cement	40,000	60,000
Asbestos fibre	24,000	40,000
Ashes, coke	50,000	60,000
Bags or bagging (cotton or jute in bds.)	24,000	30,000
Beans	40,000	50,000
Beans mixed with grain products	40,000	50,000
Beet pulp, sugar wet	40,000	60,000
Bleaching powder in barrels, casks or drums	30,000	40,000
Bottles, glass	24,000	30,000
Brick, or lining, stove.	30,000	60,000
Brick (specific commodity rate only)	24	Marked capacity of car, but not less than 60,000 lb.
Calf meal	40,000	45,000
Canned goods	30,000	40,000
Cardboard	30,000	36,000
Ceiling board and wall-board	30,000	36,000
Cigar box lumber	30,000	36,000
Coal	Varies from 25 net tons to capacity of car	Marker capacity of car, but not less than 60,000 lb.
Coal screenings	50,000	Marked capacity of car, but not less than 60,000 lb.
Cooperage stock, staves and heading	24,000	40,000
Mixed cars staves, headings and hoops	24,000	35,000
Cotton mill sweepings	24,000	30,000
Cross arms	30,000	45,000
Caustic soda	40,000	50,000
Filled boards	30,000	36,000
Ferro silicon	30,000 to 35,000	60,000
Grain products (straight or mixed cars)	45,000	50,000
(Exception), Pea and oat hulls and bran	45,000	45,000
Granite	60,000	Marked capacity of car, but not less than 60,000 lb.
Hay (domestic consumption or export)	20,000	24,000
Hubs, wood	30,000	40,000
Leather, scrap or refuse	20,000	24,000
Linseed oil in barrels	24,000	30,000
Marble blocks and marble waste	60,000	Marked capacity of car, but not less than 60,000 lb.
Marble	60,000	Marked capacity of car, but not less than 60,000 lb.
Mill cinder and scale	18 gross tons	Marked capacity of car, but not less than 30 gross tons
Nitre cake	50,000	60,000
Millboard	30,000	36,000
Iron ore	25 gross tons	Marked capacity of car, but not less than 30 gross tons
Ore, silver	40,000	60,000
Paper—		
Rags	30,000	36,000
Core	30,000	40,000
Envelope	30,000	36,000
Newsprint	30,000	40,000
Printing	30,000	40,000

Toilet	30,000	30,000
Unfinished, in rolls	30,000	40,000
Wall, unfinished in rolls	30,000	40,000
Wrapping	30,000	40,000
Writings	30,000	36,000
Mixed cars, bags, toilet and wrapping	30,000	36,000
Petroleum products in packages	26,000	30,000
Pig lead	30,000 to 36,000	60,000
Rails and Rails 30 gross tons fastenings	30,000 to 60,000	Marked capacity of car, but not less than 60,000
Rice and rice flour	24,000	36,000
Resin	40,000	50,000
Salt	45,000	50,000
Scrap leather	20,000	24,000
Scrap tin	40,000	50,000
Starch, straight cars	24,000	30,000
Syrup of glucose	30,000	40,000
Mixed cars, starch, syrup and glucose	24,000	30,000
Sugar	30,000	40,000
Stone, field	80,000	Marked capacity of car, but not less than 60,000
Spraying composition in metal cans	24,000	30,000
In wood	24,000	36,000
Syrup and molasses	30,000	40,000
Tankage	40,000	60,000
Woodpulp	40,000 to 6,000	50,000 in rolls 60,000 N.O.S.
Woodpulp board	30,000	36,000
Iron and steel articles in box cars	Various	40,000
On flat cars	Minimum not to be increased, but understanding is that wherever possible cars are to be loaded to capacity.	
Bars, muck, or puddle	25 gross tons	30 gross tons
Billets, blooms and ingots	25 gross tons	30 gross tons
Crop ends	25 gross tons	30 gross tons
Pig iron	25 gross tons	30 gross tons
Wire rods	25 gross tons	30 gross tons
Chain, iron or steel	30,000 to 60,000	40,000, except no reduction will be made where tariffs provide a minimum in excess thereof
Note:—The minimum weight for mixed carloads of manufactured articles of iron and steel as shown in the lists contained in the various tariffs will be 40,000 lb.		
Building materials—		
Cinders, coal	50,000	60,000
Clay, common	80,000	Marked capacity of car, but not less than 60,000 lb.
Gravel	80,000	"
Gypsum rock	80,000	"
Sand, building or core	80,000	"
Slag, furnace	80,000	"
Stone, cobble, crushed, etc.	80,000	"
Stone screenings	80,000	"
Blocks, building, concrete	50,000	"
Blocks, gypsum	50,000	"
Blocks, paving, asphalt or stone	80,000	"
Blocks, plaster fireproofing	50,000	"
Brick, building, except enamelled or glazed	50,000	"
Drain tile, concrete or earthenware	40,000	50,000
Fire brick and fire clay, straight or mixed carloads	50,000	Marked capacity of car, but not less than 60,000 lb.
Lime	40,000	50,000
Plaster, wall, in packages	40,000	50,000
Roofing tile, earthenware	40,000	50,000
Sand, moulding	80,000	Marked capacity of car, but not less than 60,000 lb.
Sand common	80,000	"

### Selling Standardized Tickets at Special Windows.

The sale of railway tickets out of Washington, D.C., has been greatly facilitated by the arrangement at the union station of special windows for tickets to Baltimore, Philadelphia, Wilmington, and New York. These tickets can now be handled as rapidly as theater admissions. In the past persons desiring to purchase these standard tickets have sometimes had to wait in line while tickets covered by more complicated rates were being worked out. The result of the change has

been to facilitate the sale of both classes of tickets. A large proportion of the travel out of Washington is to the points mentioned.

Similar arrangements are being made in other large cities wherever it is possible to thus care for standardized tickets for which there is a heavy demand.

### The Grand Trunk Railway's Proposed Extension to Providence, R.I.

From Engineering News-Record, New York.

The United States Railroad Administration has been petitioned to approve and provide funds for the completion of the branch of the Grand Trunk Ry. in southern New England to Providence, R. I., which was partly constructed in 1911-12. It is claimed that this additional outlet to tidewater from the G.T.R. system would help relieve congestion on New England railways.

How brief is the time since those stirring events in railway history, of which that Providence extension of the G.T.R. was a part, and what revolutionary changes have occurred since then! One recalls the ambitious projects for which the late Chas. M. Hays, as President of the G.T.R., was responsible, and his reception in Providence and Boston and other New England cities, where he painted glowing pictures of the benefits of railway competition, while the countryside was excited by the operations of mysterious surveying parties, and New England imagined it was to witness another era of competitive railway promotion and construction such as had prevailed a half century before. Then came Hays' tragic death on the ill-fated s.s. Titanic, followed by the revelation that the financing of his ambitious projects was not provided for. It was, in part at least, the public disappointment over this fiasco that led to the legislative investigation which revealed first the New Haven and Grand Trunk agreements and fallings out over New England territory, and later the extent to which the New Haven financial structure, once a tower of strength, had become a hollow shell.

Whether or not we are to return after the war to private ownership of railways, it seems unthinkable that we shall return to the old time competitive railway construction—the building of strategic lines, not for public benefit but to defeat a rival. The public will never again look upon the railways of the country as private business enterprises as it did in the past, nor will it long endure any system of control that does not place the public interest first.

This means, too, that engineers will have to study railway construction problems from a broader standpoint than was ever possible in the past. Instead of the old time questions, what profit will this proposed line yield to the company which is to own it, or what injury will it do to a competitor, the engineer must determine the problem whether the proposed line will render a service to the public that will make its cost a justifiable investment. If public convenience and necessity demands the construction of a road, then it may be built. If the contrary is the case, the construction cannot be permitted.

It was announced, Aug. 15, that the overhauling of the Prince Edward Island car ferry had been completed, and that the regular ferry service between Cape Tormentine, N.B., and Borden, P.E.I., would be resumed Aug. 19.



## The Canadian Pacific Railway's Second Track Work between Leaside Jct. and North Toronto.

Present and prospective large increase in traffic made it necessary to complete the double tracking of the C.P.R.'s North Toronto line this year. The rapid expansion of the City of Toronto to the north, and the completion last year of a

side one another, they form a complete deck to carry the ballast and track work. A narrow sidewalk for railway employees only is provided on each side, protected by a pipe hand-rail, attached to reinforced concrete posts.

8 struts of one system are not in the same plane with the other, but at approximately the points of contraflexure; in this feature the structure is unusual.

The bents consist of 4 posts, of which the 2 outer ones are battered, and the interior ones are vertical. They are in turn supported on substantial piers which are continuous transversely across the bridge. The floor slabs, as above stated, were all pre-cast and were placed on the transverse caps of the towers by derricks. The deck was waterproofed in the usual manner, with a membrane and a protective layer of asphalt, after which the ballast and ordinary track ties were laid.

In order to maintain traffic and build the new bridge on the correct line, it was found necessary to build a temporary trestle on the north side of the structure, and entirely remove the old steel work. This allowed the use to the most economical length of concrete spans and also ensured that the new concrete would not be disturbed by the vibrations due to traffic passing on the old bridge.

The nature of the reinforcement in the towers is not different from modern practice. It consists of vertical rods located in the rectangular post sections. These rods are securely tied across to opposite rods, at close intervals, by units composed of rods previously bent to suitable shapes. The towers were poured story by story and splices in reinforcing bars were located immediately above the horizontal struts. The length of the horizontal girder slabs was dictated by the size of the reinforcing bars, the maximum size of which was 1 5/16 in. diam., bent up in the usual manner to take care of shear. All ends of the rods were bent in hook

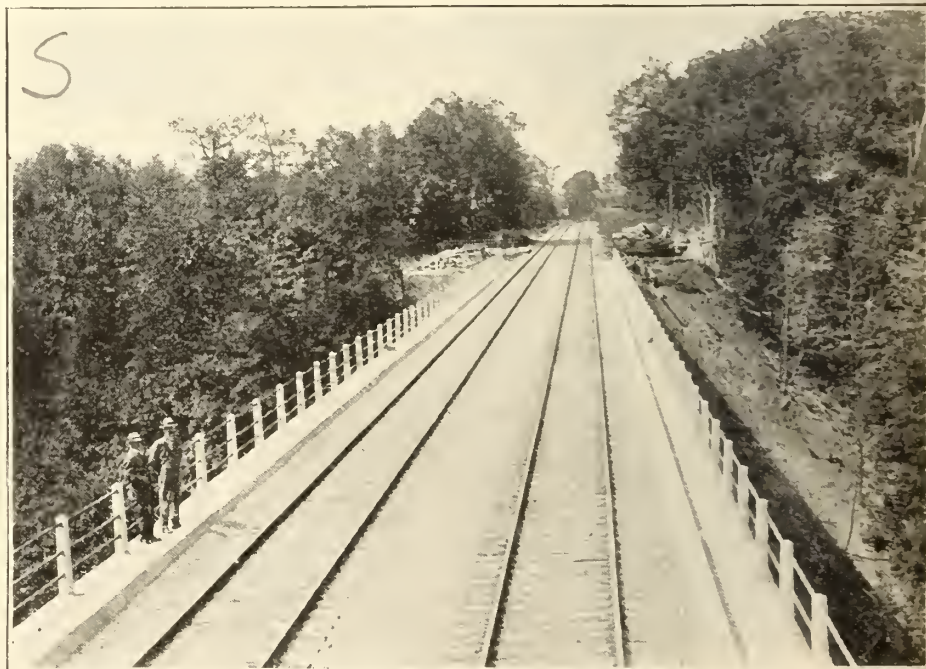


Canadian Pacific Ry. bridge over Toronto Belt Line Ry. ravine, between Leaside Jct. and North Toronto.

handsome, modern passenger station at North Toronto have greatly increased the passenger traffic of this line, which also handles the heavy freight traffic between the east and the Buffalo and Detroit gateways. The two miles of single track between the double track east of Leaside Jct., and west of North Toronto was a very busy piece of line and the increased traffic in immediate prospect necessitated prompt relief.

In building the second track which has been completed recently, no material changes in grade or alignment were made, as the new work runs to 0.4% for the former, and 3° for the latter. The grading was comparatively light, and this, together with all track work, was handled by the company's forces. It was, however, necessary to replace two single track steel viaducts, the one over the Toronto Belt Line by a 2-track, and the one over Reservoir Park ravine by a 3-track structure. This has been done in reinforced concrete and is now completed and ready for the heavy winter traffic which commences with the close of navigation on the Great Lakes.

The bridge over the Reservoir ravine is known as 1.8 North Toronto Subdivision, and consists of a 3-track structure, located with its south track approximately on the site of the existing main line, which is being used as a new switching lead, the other two tracks being used for east-bound and westbound traffic. The structure is 386 ft. long and 88 ft. high, supported on 2 abutments and 5 towers, which in turn support pre-cast T-beam floor spans of such design that, laid along-



Canadian Pacific Ry. bridge over Toronto Belt Line Ry. ravine, between Leaside Jct. and North Toronto, looking west.

The towers are of unusual design, in that no diagonal bracing is used; but instead thereof, a system of horizontal struts, to reduce the stresses in the columns from the longitudinal and transverse horizontal forces. The immediate

form to give mechanical bond. Each of the finished slabs weighs approximately 57 tons, and this, as well as the size of the rods, was the controlling feature in deciding span lengths.

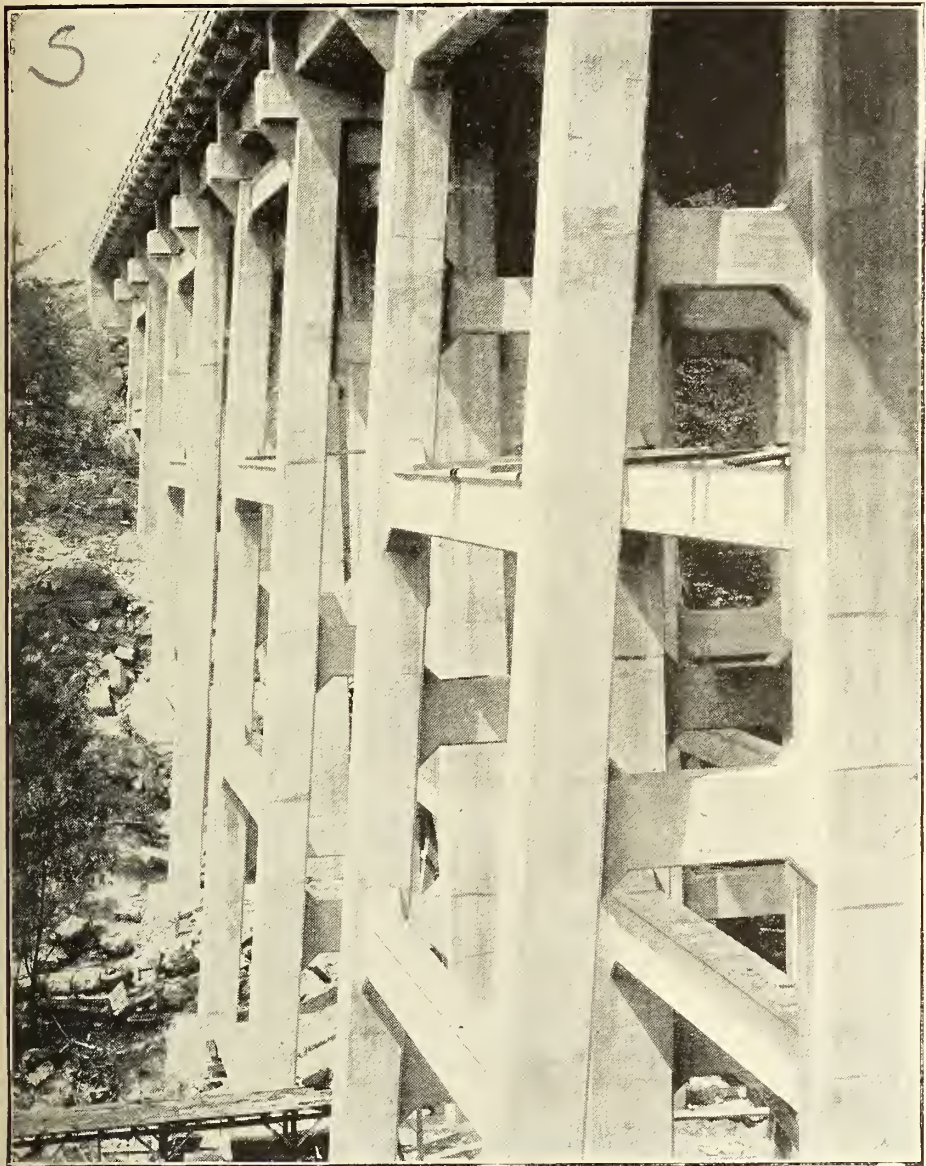
The bridge over the Toronto Belt Line



Ry. is known as 0.9 North Toronto Sub-division, and is similar in general elevation to the Reservoir ravine bridge as well as in length and height. It has the same number of towers and abutments.

Both bridges were designed to carry the heaviest locomotives in existence, with a considerable margin of safety, and are epoch-making in bridge engineering inasmuch as they have demonstrated that

attempted; the spans of these two structures are each from 35 to 37 ft. long. These spans were made possible by the employment of unit construction, by which each span was designed as two T beams, which were laid side by side on the previously built reinforced concrete, after being manufactured near the work towers. The towers are really reinforced concrete structures constructed in the usual manner by means of wooden forms built around a steel reinforcement, which was assembled previously and securely wired together. When all was in readiness, the concrete was poured by means

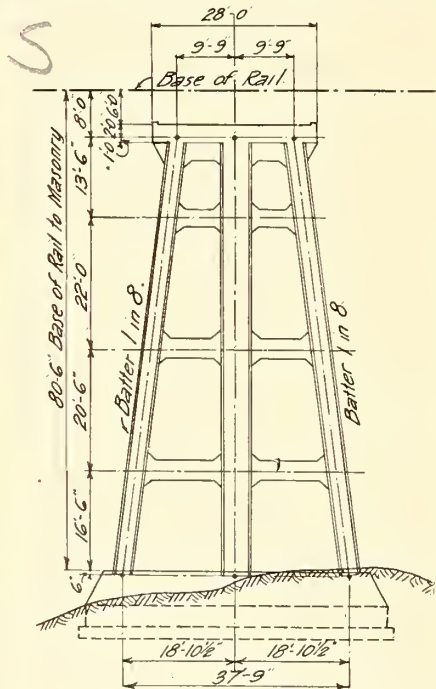


Canadian Pacific Ry. bridge over Reservoir Park ravine, near North Toronto station.

It supports, however, only 2 tracks, instead of 3. The bents consist of 3 posts, 2 outer-battered and 1 inner-vertical, and being a 2-track structure, the width is

reinforced concrete can take the place of steel for a very large number of permanent bridges.

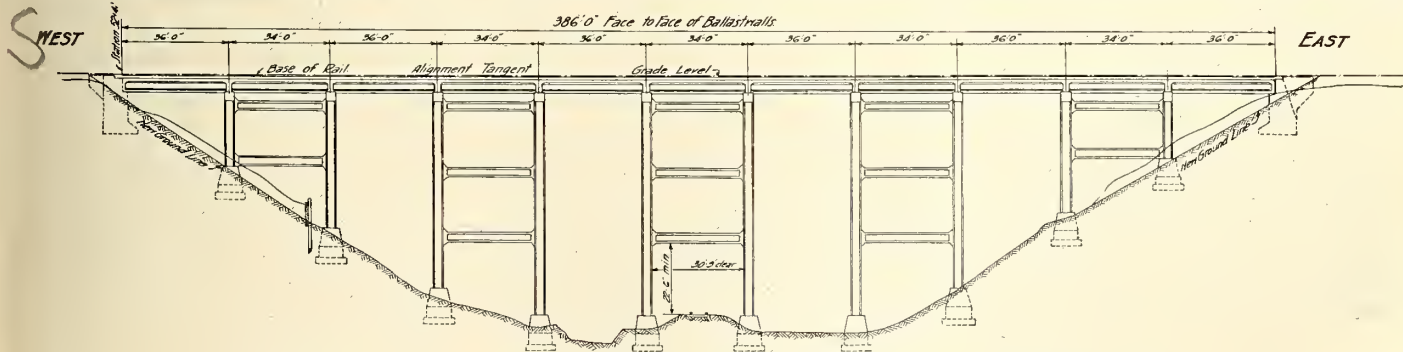
The length of the individual spans and



Bent No. 7 of Canadian Pacific Ry. bridge over Toronto Belt Line Ry. ravine.

of long spouts which led in several directions from the main mixing tower. The pouring of the concrete was maintained as continuously as possible until a whole tower was completed. This work was done during the winter, when the temperature was below freezing; it was performed inside of what was virtually a building erected to maintain a suitable temperature around the newly deposited concrete until it was out of danger of being damaged by frost.

The method employed in the erection of the reinforced concrete spans is specially interesting. Each slab, as a unit, weighed 55 tons, which was the limit load



Canadian Pacific Ry. bridge over Toronto Belt Line Ry. ravine, between Leaside Jct. and North Toronto.

correspondingly narrower. There are 2 narrow sidewalks for railway employes, protected by reinforced concrete posts and rail fence of same general character as the other bridge.

the details of their construction are claimed to be unprecedented in the engineering world. It is said that previous to this no reinforced concrete beam with a length of more than 25 ft. had been

that could be handled by the C.P.R. 100-ton standard wrecking crane. The crane engaged handled no less than 110 slabs, each 55 tons in weight, or in all something like 6,000 tons, and all this was



done without a single mishap to either men or material. Another remarkable feature is that both structures were built without interruption from the beginning of June, 1917, to the beginning of July, 1918, which was a shorter period than would have been required to manufacture and erect similar structures in steel. Passenger and freight traffic was continued without interruption during the progress of the work.

Both works were executed under the supervision of J. M. R. Fairbairn, Assistant Chief Engineer, Eastern Lines, now Chief Engineer of the entire C.P.R. system, the designs being made by P. B. Motley, Engineer of Bridges, and the work was carried out under J. H. Barber, Engineer in Charge. The contractors of bridge 1.8 were Wells and Gray, Ltd., and for bridge 0.9 the Dominion Construction Co. The two steel trestles were removed by James Finley, structural contractor, Tweed, Ont. The temporary trestle over the reservoir ravine was erected by C.P.R. forces.

Work was started on the temporary trestles and grading, July 16, 1917, and the second track was put in operation July 4, 1918.

## Wonderful Movements of Troops by French Railway.

Although the events to which it referred occurred last year, the following article reproduced from a French revue, "Readings for Everyone," cannot fail to be of interest now. We are indebted to F. E. Gautier, Purchasing Agent, C.N.R., Winnipeg, for the translation:—

A French revue, "Readings for Everyone," publishes in its edition of the 15th Dec., 1917, a remarkable article entitled "Our soldiers in Italy," and the effort of France to transport almost at a moment's notice, several divisions of French and English troops from the western battle front to that in Italy.

Here is a summary of the article:—On a certain morning a stroke from the blue struck Paris:—"Italy is in danger, the Italian armies are retreating from the positions they had gained in Austria." The allies decided quietly to go to the help of Italy. It was on Oct. 23 that the German-Austrian attack began. Four days later the French and English Governments were advised of the gravity of the situation. The English Ambassador in Paris received instructions to offer Great Britain's fullest co-operation. The General in Chief of the French armies, the managers and chief engineers of the railways were summoned to Paris by telegraph. A meeting was held at 4 p.m. and by 6 o'clock the whole plan of assistance had been formulated. The military general staff instructed the division commanders and issued orders as to the immediate mobilization of different units.

The railway managers were asked: "Can you in 24 hours assemble sufficient material so as to throw 120,000 men over the Alps?" and the answer was "If necessary, we will do it in 18 hours." They were told to go ahead, and in 20 minutes the orders were issued to the different railways.

They were then asked "Could you double the effort?" They replied "Yes, if we get the co-operation of the Orleans Ry. and that of the Eastern System, so as not to paralyze the economic conditions of life in the country."

It then became necessary to carry out the decision arrived at, and to assemble during the night an enormous number of trains and to bring them to the points on the western battle front, and then to carry the troops, at express speed, to the Italian front, Lake La Garda and the Val Sugana, the two points most in danger.

On Oct. 22, at 6.30 a.m., the train movement began; the engineers had assembled in the office of the chief engineer; the time tables were established, a statement made out of all the cars and locomotives available; then the wires were kept hot. Twelve thousand railway carriages and 500 high speed locomotives were on their way two hours later, for the northeastern

frontier, at full speed. Everything in the way of traffic not absolutely necessary, was cancelled; every station master received definite instructions; every locomotive house, every department, knew exactly the minute at which the services of the men and the material would be required, so that 24 hours after the first meeting of the war council, 12,000 cars were practically behind the battle front in France.

Now what about the military side of the situation? The units were fighting or in battle array, while the trains were spreading northeast to embark them. It is not wise to speak of the military organizations at the front, but this can be said: as soon as a train arrived, the staff sergeants went to work and with a piece of chalk indicated very clearly, on each carriage, where each regiment, each company or section belonged; there were 40 cars to a train; this train carried a battalion, one battery of 75's, a half battery of heavy artillery, with the necessary ammunition for men and guns, and a squadron of aviators.

On the evening of Oct. 28, the general staff had instructed the army staffs as to which divisions were to leave. Locomotives and still more locomotives, with their trains of carriages, began to arrive, so that at 4 p.m. thirty-eight complete trains were on six large side tracks which had been built in the meantime. Long before the arrival of the trains, every man had his orders as to what he was to carry on his journey to Italy; the work of the non-commissioned officers was admirable. The temporary station was ablaze with electric reflectors. The first battalions started for the trains, and so perfect were the arrangements that every man stood in front of the particular carriage he was to occupy. Then at a bugle call all got on board, then a whistle from the locomotive, and amidst a thunder of "Au Revoir," "Good-bye," "We are off to the land of the sun," the trains pulled out. Battalions followed battalions at 10 minutes interval; then came the field kitchens, the rapid firing gun sections, the grenade companies, the ambulance waggons and corps, the army service waggons and staff. The trains keep going and going; then it was the turn of the artillery, the big guns, the little ones, the 75's, the 155's, the 210's, the larger ones on their railway truck, just as they left the factories. These trains required from two to three locomotives. Then came the full commissary department corps with the food. The night was well advanced when the last red light, on the last train, disappeared in the darkness. The speed was 35 kilometres an hour. The first train reached its destination on Nov. 2 on the Italian battle front at Asiago. Two trains carried the material necessary for

the depot commissariat, all the food for 180,000 men, bread, flour, fish, wine, etc. It takes 6,000 head of cattle a month to feed the troops; 30 cars a day are required to transport supplies of all sorts, but of this the censor will not let us say.

All of the above relates only to the transportation of the French troops, but what of the English effort for Italy? The French railways during the same time furnished the transport for men, ammunition, food, etc., etc. We are not acquainted with the military organization of our allies, but they performed the same feat. It was by thousands that their men went to Italy, and the French railways transported them and their equipment. The feeding alone of such an enormous number of allied troops in Italy, as well as the horses, and the continuous supply of ammunition, is a problem in itself. Then there are the returning trains with the wounded. All these great movements have been carried on quietly, smoothly, and without interfering with the daily requirements of the civilian population of France. Few know of the real hard work done by our railways and the difficulties they must overcome, often at a few hours' notice.

## An Appreciation of J. E. Quick.

The Eastern Canadian Passenger Association unanimously adopted the following resolution at its last meeting:—Whereas J. E. Quick, after 47 years continuous service with the lines of the Grand Trunk Ry. System, has retired from service as General Baggage Agent, under the company's pension rule, now be it resolved, that this association express to Mr. Quick its most sincere regret at the severance of business ties that have existed for many years, and the equally sincere hope and wish that he may be spared for many years to come to enjoy the fruits of his labor. Mr. Quick's instinctive gentility, unvarying courtesy and kindly disposition have endeared him in the hearts of all who have been associated with him, either in a business or social way; his dealings with his fellow men have always been along the lines of justice and right and devoid of any taint of selfishness or self aggrandizement and his judgment of the soundest. His withdrawal from the field in which he has so long been a leader and active worker will be keenly felt by those who know his sterling worth, ability, and willingness at all times to put his shoulder to the wheel, or reach out a hand to assist any in distress or need of help.

**Automatic Train Stops.**—The Board of Railway Commissioners issued the following circular Aug. 13:—In view of the frequency of accidents, as shown by reports made to the board from time to time, indicating that some grave consideration should now be given by Canadian railways to the question of the advisability of adopting an effective automatic train stop device, the board, in full realization of the necessities of the situation brought to its attention, desires an expression of the views of each railway company under its jurisdiction upon the subject after full consideration and investigation has been given by the railways. It is suggested that the Canadian Pacific, Grand Trunk, Michigan Central, Canadian Northern, St. Lawrence & Adirondack, Grand Trunk Pacific, and Toronto, Hamilton & Buffalo Railways should appoint a special committee to consider the matter, a report as to progress to be made to the board within 90 days.



## Birthdays of Transportation Men in September.

Many happy returns of the day to:—

W. B. Bamford, District Freight Agent, C.P.R., Toronto, born at Belleville, Ont., Sept. 10, 1863.

G. T. Bell, Passenger Traffic Manager, G.T.R., Montreal, born there, Sept. 7, 1861.

W. H. B'gar, K.C., Vice President and General Counsel, G.T.R., and G.T.P.R., Montreal, born at The Carrying Place, near Trenton, Ont., Sept. 19, 1852.

E. J. Blais, Foreman Tinsmith, Canadian Government Railways, Transcona, Man., born Sept. 26, 1876.

E. R. Bremmer, ex-Division Freight Agent, Ottawa Division, G.T.R., Ottawa, born at Toronto, Sept. 9, 1875.

M. H. Brown, District Freight Agent, Ontario District, C.P.R., Toronto, born at Victoria Square, Ont., Sept. 2, 1866.

W. B. Bulling, ex-Assistant Freight Traffic Manager, Eastern Lines, C.P.R., born at Montreal, Sept. 16, 1858.

W. E. Burke, Assistant Manager and Director, Canada Steamship Lines, Ltd., Toronto, born at Belleville, Ont., Sept. 23, 1881.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 30, 1864.

A. S. Dawson, M.Can.Soc.C.E., Chief Engineer, Department of Natural Resources, C.P.R., Calgary, Alta., born at Pictou, N.S., Sept. 6, 1871.

H. B. Dufief, Assistant Solicitor, Grand Trunk Pacific Ry., Winnipeg, born at Washington, D.C., Sept. 16, 1883.

W. E. Duperow, General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., Sept. 4, 1872.

C. B. Foster, Assistant Passenger Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, N.B., Sept. 30, 1871.

G. J. Fox, Superintendent, Calgary Division, Alberta District, C.P.R., Calgary, Alta., born at Montreal, Sept. 24, 1883.

R. S. Gosset, Auditor of Disbursements, Canadian Northern Ry., Toronto, born there, Sept. 28, 1879.

E. Goulet, Agent, C.P.R., New Westminster, B.C., born at Quebec, Que., Sept., 1865.

D. W. Hatch, ex-Travelling Agent, Atchison, Topeka & Santa Fe Ry., Montreal, born at Bedford, Que., Sept. 1, 1841.

W. B. Howard, District Passenger Agent, C.P.R., Toronto, born at Chatham, N.B., Sept. 15, 1877.

W. R. Howard, dispatcher, C.P.R., Brownville Jct., Me., born at St. Andrews, N.B., Sept. 14, 1871.

J. E. Hutcheson, General Manager, Montreal Tramways Co., Montreal, born at Brockville, Ont., Sept. 15, 1858.

G. C. Jones, Assistant to President, G.T.R., Toronto, born at Clyde, N.Y., Sept. 24, 1869.

C. B. King, Manager, London St. Ry., London, Ont., born at Galena, Ind., Sept. 12, 1871.

S. King, London, Ont., Director, National Steel Car Co., Hamilton, Ont., born at Thetford, Norfolk, Eng., Sept. 12, 1853.

R. E. Larmour, General Agent, Freight Department, C.P.R., New York, born at Brantford, Ont., Sept. 26, 1868.

C. D. MacKintosh, Superintendent, Lethbridge Division, Alberta District, C.P.R., Lethbridge, Alta., born at Auckland, New Zealand, Sept. 24, 1882.

W. A. Mather, Assistant General Superintendent, British Columbia District,

C.P.R., Vancouver, born at Oshawa, Ont., Sept., 1885.

M. B. Murphy, Manager, Winnipeg Joint Terminals, Winnipeg, born at Napa, Cal., Sept. 11, 1866.

J. Paul, District Freight Agent, Canadian Northern Ry., Winnipeg, born in Euphrasia Tp., Ont., Sept. 13, 1858.

W. D. Robb, Vice President, G.T.R., Montreal, born at Longueuil, Que., Sept. 21, 1857.

H. T. Ruhl, Engineer, Maintenance of Way and Structures, Delaware & Hudson Co., Albany, N.Y., born at Mifflinburg, Pa., Sept. 29, 1882.

A. Scott, Resident Engineer, Prince Edward Island Ry., Charlottetown, P.E.I., born at Kirkcaldy, Scotland, Sept. 6, 1884.

J. M. Silliman, Resident Engineer, London Division, Ontario District, C.P.R., London, Ont., born at Easton, Pa., Sept. 8, 1885.

H. A. Young, formerly Ontario Storage & Cartage Co., Ltd., Toronto, now of Buffalo, N.Y., born at Brooklyn, N.Y., Sept. 1, 1864.

## Advance in Freight Rates Compared with Advances in Goods.

The Canadian Railway War Board announced recently that a detailed study had been undertaken which will show not merely the increase in the cost of railway haul in the manufacture of common necessities of life, but will go into the actual cost of the labor and raw materials in these articles with a view to proving that while railway rates have increased possibly 30% since the war began, while railway costs of operation have increased by a larger percentage, manufacturers have actually increased their rate of profit out or all proportion to the actual increase in their cost of production.

One of the board's officials said in an interview recently:—"It is just about time that the public was shown who are the real profiteers at public expense. If all service, and if all production in Canada, was as efficiently carried on, if the standards were as high and the profits as low as they are on Canadian railways—there would be much less need for worry over the cost of living. Railway service in Canada is cheaper than in any other country in the world except one—India, which is cheaper on account of the cheap labor.

"Washington has had to spoonfeed just over \$203,000,000 to keep the U.S. railways alive. It has had to boost not only freight, but passenger rates, curtail service, cut out conveniences and put up with congestion at the same time. This is the inevitable result of their previous diligence in paring railway earnings to the bone, insisting upon feverish competition, and enacting into law almost every and any crank idea that some political incompetent could dream of for harassing and embarrassing the managements. Control as we have it in Canada does everything good for the public that the U.S. aimed to achieve, but there are a few fanatics who are apparently ready to wreck Canadian railway efficiency, upon the maintenance of which the country's business depends, by following the methods the U.S. people are repenting so bitterly these days.

"Listen to this list: Boots and shoes have risen in price since the war began, 100%; beef, 35%; clothing, 50%; coal, 100%; cordwood, 100%; flour, 90%; gaso-

line, 100%; hardware, 100%; pork, 75%; sugar, 80%; and tobacco, 50%. The roads are paying now a 100% higher pay-roll; 210% more for axles; 110% for brass castings; 200% for malleable castings; 100% for coke; 157% for iron and steel bars; 153% for fir; 80% for oak; 100% for pine and spruce; 130% for oil fuel at Montreal; 32% for oil at Vancouver; 50% for kerosene; 125% for steel tires; 100% for cleaning waste; 200% for lubricating waste; 90% for cast iron wheels—and then the precious private profiteer, whose prices, profits and standards of workmanship or quality are not fixed by government regulation, has the hardihood to talk about a total of 30% increase in railway freight rates since the war began! Surely if Canada is going to deal intelligently with her post-war problems we must commence to take at once some early A. B. C. lessons in ordinary business arithmetic and common uprightness of judgment."

## Regulations Requiring Reporting of Railway Accidents.

The Board of Railway Commissioners passed general order 244, July 26, as follows:—Upon the report of the board's Chief Operating Officer to the effect that railway companies are not fully complying with the requirements of the Act in reporting accidents to the board, and pointing out the desirability of a uniform practice on the part of railway companies in making returns of accidents, and upon his recommendation, it is ordered that every railway company be required within six days after the head officers of the company have received information of the occurrence upon the railway belonging to it of any accident, attended with personal injury to any person using the railway, or to any employee of the company, or whereby any bridge, culvert, viaduct, or tunnel on or of the railway has been broken or so damaged as to be impassable or unfit for immediate use, to give notice thereof to the board, such notice to be addressed to the board's Chief Operating Officer and to be made on hard paper in the forms A (relating to highway crossing accidents only) and B (relating to accidents other than those occurring at highway crossings, schedules to this order; such reports to be limited to accidents caused by transportation, that is to say, where train movements are involved, and not to apply to accidents occurring in railway shops or other manufacturing establishments, the property of railway companies.

2. In the case of derailments, collisions, and highway crossing accidents attended by personal injury, and in the case of any damage to any bridge, culvert, viaduct, or tunnel so as to render the same impassable or unfit for immediate use, the conductors or other employees of every such company shall, at the expense of the company and at the same time they report to the company, send to the board, addressed to its Chief Operating Officer, a telegram containing the following information:—Date and place, name of railway, number and description of train or trains, locomotive or locomotives concerned, number of passengers, employees or others killed and injured, a short and concise statement of the apparent cause of the accident, name and title of person sending report.

3. That where any such company grants or has granted running rights, or the joint use of its line or any portion thereof, to another company and the last named company is concerned in an accident occurring on said joint section re-



quired under this order to be reported, both companies shall report to the board as herein provided.

4. That every such railway company place before their conductors or other employees affected by the order a copy of

paragraph 2, directing said conductors or other employees to comply directly with the requirements of the provision.

5. That general order 39, circular 110, with supplements 1 and 2, circular 131, and circular 161 be rescinded.

## Railway Operating Difficulties in Winter.

By G. Beckingham, Superintendent of Track, G.T.R., Montreal.

During last winter almost all railways in North America suffered from extreme cold and snow; the delay to traffic was very great, to say nothing of the enormous expense in endeavoring to keep the line open. Why should there have been such delay to traffic, and is there a means to prevent it?

There are many maintenance officials on railways today who have been connected with railways for 30 years or more. Many of these officers can call to mind when our locomotives weighed from 30 to 40 tons, and at that time the railways did not experience the interruption to traffic met with last winter. Some of our locomotives today weigh 446,000 lb. with a steam pressure of 220 lb., and with this large size locomotive and high steam pressure, railways in winter time are not operated more successfully than they were with the small locomotive of 30 years ago, except, of course, that the locomotives haul a greater tonnage. This being the case, there must be a reason which did not exist 30 years ago for traffic being delayed during the winter. Any person with a knowledge of operating trains in winter in this northern country, would naturally think with the difference in locomotives of the present, compared with 30 years ago, that the trouble in running trains should be greatly eliminated.

In the first place, the men responsible for the keeping open of the road 30 years ago, were men who thoroughly understood their work, whereas in a great many instances today this work is handled in an altogether different method. Years ago, every man, regardless of his occupation, felt a certain responsibility, and everything in his power was done to keep the lines open for traffic. It would not be right or proper to say there are not some men of this class on railways today, but they are not in the same numbers as in years gone by, and with the improved equipment we have today, it would be well for stockholders of railways if men were of the same caliber as 30 years ago.

There is another reason for operating traffic so successfully 30 years ago, and that was some railways were better equipped with snow ploughs and flangers than they are today. Locomotives in those days were equipped with flangers. These flangers were placed on the pilot and were operated by the locomotive man by a lever. If our locomotives today were equipped with flangers as they were in days gone by, the interruption to traffic through snow would be reduced to almost nothing. In addition, it would be necessary, of course, to run wing ploughs over the line from time to time, or as often as would be required to keep the snow winged back from the track 6 or 7 ft. If this were done the flanger on the locomotive would clear the snow sufficiently from the rail to permit the locomotive to haul its train.

It has been said that railways should not operate snow flangers in front of locomotives for the reason that they are dangerous, in that they would remove a

torpedo from the rail if placed there in case of danger. If this is the case, the same would apply by a plough run ahead of the locomotive. In any event, I do not think railways can attribute many accidents to torpedoes being removed from the track by the flangers on locomotives. I am sure if railways today could go back 30 years and operate locomotives not equipped with flangers, the interruption to traffic would be so great there would be weeks at a time the line would be tied up.

There is one other feature very necessary in connection with the successful operation of snow ploughs and flangers; that is, a special siding should be provided for them at terminals where this equipment is kept. This siding should be constructed with a pit underneath track, which would permit of ploughs and flangers receiving proper inspection. Immediately when a plough arrives it should be placed on this track. In addition to its being thoroughly inspected, snow and ice should be cleaned away. In other words, everything necessary, including turning the plough, should receive immediate attention, on its arrival. There are very often serious delays due to this work being neglected.

It is also important that sufficient men trained to operate ploughs should know the line thoroughly. This is very necessary in order that the plough be operated successfully. When starting out with a plough, the conductor, locomotive man and man operating the plough should have it thoroughly understood as to the speed at which they wish to run, and to see that all concerned understand the signals, etc., as a mistake on the part of the locomotive man or man operating the plough might cause a very serious accident. There is no work on a railway more hazardous or of more importance than operating a wing plough ahead of a locomotive. Dispatchers and all concerned should exercise the greatest care while ploughs are being run in this manner.

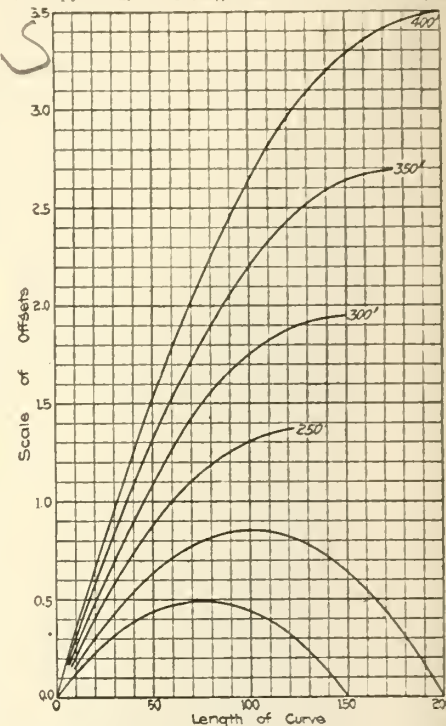
A ballast leveller can be used to good advantage throughout the winter in yards, to clear snow from the tracks instead of loading up on to cars. There are cases where a leveller has cleared as many as 10 tracks, moving the snow to the outside. It is not always possible to use the leveller owing to local conditions, but where it can be used to advantage it does the work quickly and reduces expenses fully 75%.

**Women for Railway Work.**—Washington, D.C., press dispatch, Aug. 13:—Thousands of women will be drawn into railway employment within the next few months, to take the place of men entering the army and going to other industries, according to plans now being formulated by the U.S. Railroad Administration. Women are to be employed extensively as clerks in railway offices, as expert accountants, ticket sellers, station agents, crossing watchmen, car cleaners and to some extent as track laborers.

## Laying out Railway Curves from Long Chords.

By H. N. Graham, Penticton, B.C.

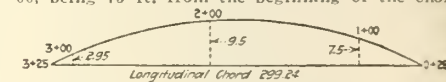
The accompanying diagram I have found very useful on railway survey work. It enables the user to lay out a simple railway curve by means of offsets from the long chord, where great accuracy is not required, such as in heavy brush or in swampy land. The diagram is for a 1° curve; for



other curves the offset should be multiplied by the degree of curvature.

The length of curve to which the long chord applies is shown by the curved lines on the diagram. The scale of offsets is read on the left-hand scale.

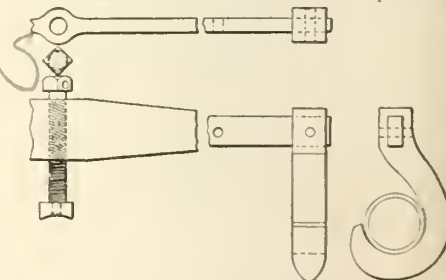
Following is an example: For a 5° curve, using a long chord of 300 ft., with the beginning of the chord at sta. 0+25, the first offset, to sta. 1+00, being 75 ft. from the beginning of the chord,



is  $1.5 \times 5$  or 7.5 ft.; the second offset, to sta. 2+00, being 125 ft. from the end of the chord, is  $1.9 \times 5$  or 9.5 ft.; the third offset, to sta. 3+00, being 25 ft. from the end of the chord, is  $0.59 \times 5$  or 2.95 ft., as indicated in the smaller sketch.—Engineering News-Record.

## An Arch-Tube Straightener.

The accompanying sketch illustrates a device used in straightening arch tubes for locomotives. It consists of a wrought-steel bar 4 ft. long, tapering from  $3\frac{1}{2}$  in. at the center to  $1\frac{1}{2}$  in. at the ends, and is  $\frac{7}{8}$  in. thick. This bar is provided



with a hook at each end and a setscrew in the middle. To operate it the tube is set on the end hooks and is straightened by pressure brought to bear by the setscrew. This device has been in use for some time on several railways, and has been found to be a very simple and effective method for straightening arch tubes.



**St. John & Quebec Ry. Financing.**—The New Brunswick Government has issued writs against J. K. Flemming, former premier, to recover \$100,000; W. B. Tennant, to recover \$133,000, and T. Nagle, to recover \$20,000, money alleged to have been paid to them for political influence out of funds provided by the government for building the St. John & Quebec Ry. A commission of investigation found that these sums had been paid to the persons named by A. R. Gould, the then President of the company, and by contractors and sub-contractors, thus unduly enhancing the cost of building the railway.



# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 243. July 25.—Further postponing until Oct. 1, effective date of general order 230, May 17, re interswitching of freight traffic.

General order 244. July 26.—Specifying time when, and manner in which railway companies shall report accidents to the board.

General order 235. Aug. 8.—Amending clause 4 of general order 186, Apr. 4, 1917, to provide that, until further order the minimum carload weight of flour shall be 50,000 lb. when loaded in cars of 60,000 or 70,000 lb. capacity.

General order 246. Aug. 12. Permitting railways in Canada engaged in eastbound transcontinental traffic to increase commodity rates from Pacific coast terminals in B.C. This order is given in full on another page.

27448. July 18.—Authorizing C.P.R. to build spur for Imperial Oil, Ltd., Vulcan, Alta.

27449. July 17. Extending to Sept. 30 time within which C.P.R. shall build standard 2 station at Hayter, Alta., according to order 26140, May 22, 1917.

27450. July 18.—Approving clearances of coal and tippie works for Edmonton Collieries, Ltd., on Great West Coal Co.'s spur, Clover Bar, Alta.

27451. July 19.—Approving Central Vermont Ry. resolution June 28, authorizing N. W. Hawkes, General Freight Agent, to issue tariffs of tolls.

27452. July 18.—Dismissing application of residents of Massett, B.C., for order directing Grand Trunk Pacific Coast Steamship Co. to reduce freight rates from Vancouver and Prince Rupert, B.C.

27453. July 17.—Relieving Canadian Northern Ry. from providing further protection at highway just east of Cardinal, Man.

27454. July 18.—Apportioning cost of maintenance of bridge over C.P.R. on Nelson St., Sudbury, Ont., as follows:—actual planking of surface renewed and maintained by Town of Sudbury from time to time; structural work and 80% of cost of structural maintenance by C.P.R., and 20% by Sudbury-Copper Cliff Suburban Electric Ry.

27455. July 19.—Amending order 27423, July 17, re highway over Grand Trunk Pacific Ry. between Secs. 5 and 6, Tp. 32, Range 27, west 2nd meridian, by substituting Tp. 34 for Tp. 32.

27456. July 27. Authorizing Montreal & Southern Counties Ry. to increase existing freight rates except on coal and coke, by 15%, and on coal and coke by 15c a ton; also to increase standard maximum passenger rate so as not to exceed 2.875c a mile; effective when requirements of secs. 327 and 331 of Railway Act are met.

27457. July 22.—Dismissing application of Town of Kenora, Ont., for authority to make highway over C.P.R. near Keewatin.

27458. July 22.—Declaring that C.P.R. heater charge of \$15 a car on bananas from Minneapolis, Minn., to Winnipeg, for Vipond Fruit Co., was wrongfully made, and authorizing refund.

27459. July 22.—Ordering Grand Trunk Pacific Ry. to reduce rate on coal shown in its Special Joint & Competitive Freight Tariff, C.R.C. 285, from mines on Great West Coal Co. spur, to Edmonton, Alta., to 45c a ton.

27460. July 20.—Dismissing application of Twin City Coal Co., Swift Canadian Co., Northern Alberta Coal Operators' Association, and Alliance Power Co., Edmonton, Alta., for reduced rates on slack coal.

27461. July 22.—Declaring that C.P.R. heater charge of \$22.50 a car from Minneapolis, Minn., to Calgary, Alta., on 5 carloads of bananas for Plunkett & Savage was wrongfully made, and authorizing refund.

27462. July 22.—Dismissing application of Security Traffic Bureau, Minneapolis, Minn., alleging overcharge by C.P.R. on shipment from Winnipeg to Wilkie, Sask., Apr. 27, 1912.

27463. July 22.—Authorizing G.T.R. to build siding for I. Cohen, Kingston, Ont.

27464. July 23.—Authorizing G.T.R. to remove siding built under order 27134, to relay same and build additional tracks for Lindsay Factories, Ltd., Toronto.

27465. July 22.—Authorizing Canadian Northern Quebec Ry. to build siding for Canadian Ferro Alloys, Shawinigan Falls, Que.

27466. July 22.—Ordering Canadian Northern Ry. to erect fences along right of way in north half of Lots 7, 8 and 9, Con. 6, Glamorgan Tp., to be completed by Sept. 1.

27467. July 22.—Amending order 26944, Jan. 28, 1918, so as to extend express collection and delivery limits in Winnipeg.

27468. July 20.—Authorizing Canadian Northern Ontario Ry. to build temporary siding from C.P.R. to C.N.R. ice house at Leaside yard, Toronto, for stocking ice house and delivery of construction material in connexion with C.N.R. yard.

27469. July 22.—Approving location of Esquimalt & Nanaimo Ry. station at Bainbridge, B.C.

27470. July 18.—Authorizing Lake Erie & Northern Ry. to operate over joint section without pilots being furnished by G.T.R., upon installation

of electric train staff system authorized by order 27180; provided that in event of electric train staff system failing to work at any time, L. E. & N. R. to stop trains before entering G.T.R. tracks and hold them until necessary repairs have been made; rules governing operation of joint system to be submitted for approval by board's chief operating officer.

27471. July 22.—Authorizing Hamilton Radial Electric Ry. to increase its standard maximum freight mileage tariff by 15%, and its carload rates on coal and coke by 15c a ton; to increase its passenger tariff from 2c to 2½c a mile, subject to limitations created by bylaws of Saltfleet Tp., Burlington Village, Nelson Tp., and Oakville, Ont.

27472. July 19.—Authorizing C.P.R. to build siding for Montreal, Light, Heat & Power Co., Montreal.

27473. July 22.—Authorizing C.P.R. to build spur for Maple Leaf Harvest Tool Co., Tillsonburg, Ont.

27474. July 23.—Approving Esquimalt & Nanaimo Ry. plan M. 846, of shelter and platform at Bowser, B.C.

27475. July 23.—Authorizing Saskatchewan Highways Department, on behalf of Colonsay rural municipality 342, to make public highway over Grand Trunk Pacific Ry., Young to Prince Albert Branch.

27476. July 23.—Authorizing Grand Trunk Pacific Ry. to build spur from G.T.P.R. and C.N.R. joint section at mileage 1053.2 Winnipeg west, in Cariboo District, B.C., to connect with Lucerne gravel pit.

27477. July 19.—Amending order 27366, June 27, by declaring that Toronto, Hamilton & Buffalo Ry. is senior to Toronto, Niagara & Western Ry. in connection with T. H. & B. R. branch near Beach Road, Hamilton, Ont., no matter when laid.

27478. July 19.—Approving plans and specifications of Southwold Tp., Ont., showing work to be done on McIntosh drain 2 under G.T.R. on east half of Lot 10, Con. 3, Southwold Tp.

27479. July 22.—Approving location of Esquimalt & Nanaimo Ry. shelter at Fanny Bay, B.C.

27480. July 25.—Ordering Canadian Northern Ry. to install standard one-car pen at Prince, Sask., with partition to divide mixed shipments of pigs and cattle; to be completed by Oct. 1.

27481. July 25.—Dismissing application of Town of Greenfield Park, Que., for order directing two limited through cars of Montreal & Southern Counties Ry. to leave Greenfield Park daily except Sundays at 6.20 and 7 a.m.; and two through cars from Montreal to Greenfield Park for Greenfield Park People only to leave Montreal daily except Sundays at 5.40 and 6.20 p.m.; and that all local cars stop at each street in Greenfield Park, including Murray and Fairfield Aves., and all Chambley and Granby cars stop at Greenfield Park.

27482. July 25.—Approving location of Canadian Northern Ontario Ry. station at Yarker, Ont.; and authorizing C.N.O.R. to rearrange tracks and cross Vanluven and Bridge Sts., and street running from Bridge to Center St., with pipe line.

27483. July 25.—Approving location of Canadian Northern Ry. station at Rainy River, Ont.; and C.N.R. to build two additional tracks across Government Road and Little St.

27484. Authorizing Toronto, Hamilton & Buffalo Ry. to build second main track at grade across certain highways in Con. 4, Barton Tp., Ont.

27485. July 25.—Authorizing C.P.R. to build spurs for James Richardson & Sons elevators, and Saskatchewan Co-operative Elevator Co., Port Arthur, Ont.

27486. July 25.—Authorizing City of Toronto to remove cattle market bridge across G.T.R. and C.P.R. east of Strachan Ave.

27487. July 26.—Authorizing Alberta Public Works Department to build highway over C.P.R. in n.e. ¼ Sec. 25, Tp. 40, Range 24, west 4th meridian; cost to be paid by Municipal District 398.

27488. July 27.—Dismissing application G. Boyer, M.P., the municipal councils of Cedars, Coteau du Lac, Coteau Station and St. Zotique Parishes and Coteau du Lac and Coteau Landing Villages for order directing G.T.R. to sell commutation tickets between Montreal and stations in Soulanges county, Que.

27489. July 25.—Authorizing C.P.R. and Hull Electric Co. to operate trains and cars over crossing at St. Hyacinthe St., Beemer, Que.

27490. July 29.—Authorizing Toronto, Hamilton & Buffalo Ry. to remove regular agent at Mount Pleasant, Ont., and close station as agency point; caretaker to be appointed to see station is kept clean and heated for passengers and care for l.c.l. and express freight.

27491. July 27.—Authorizing G.T.R. to build spur for E. Long Mfg. Co., South Orillia Tp., Ont.

27492. July 25.—Amending order 26486, Aug. 31, 1917, re highway crossing over Canadian Northern Ry. in Sec. 18, Tp. 15, Range 12, west 2nd meridian.

27493. July 29.—Ordering Canadian Northern Ry. to move station, siding and loading platform near Looma, Alta., to be completed by Sept. 1.

27494. July 30.—Authorizing C.P.R. to build spur for M. J. O'Brien, Ltd., Horton Tp., Ont.

27495. July 29.—Authorizing Lake Erie & Northern Ry. to build interchange track with Michigan Central Rd., at Waterford, Ont., and rescind-

ing order 21986, June 15, 1914.

27496. July 30.—Authorizing Canadian Northern Ry. to build spur through Blocks 81, 80 and 122, and T. Eaton Co.'s warehouse site, in Dominion Park, and cross Seath St., Hamilton, Fifth and Sixth Aves., Regina, Sask.

27497. July 24.—Ordering Canadian Northern Ry. to extend walls of culvert opposite Marsh Engineering Works' property, Belleville, Ont., and to clean and widen ditch without prejudice to any claim C.N.R. may have under contract for construction of track by C.P.R.; work to be completed by Sept. 15.

27498. July 30.—Authorizing G.T.R. to build extension of siding for John Johnson, Vespra Tp., Ont.

27499. July 29.—Authorizing G.T.R. to build spur connecting with Grand River Ry., and using portion of its track; thence along and across Industrial St., for Dominion Tire Co., Kitchener, Ont.; and to rearrange lead and connection with main siding.

27500. July 29.—Relieving C.P.R. from providing further protection at first crossing west of West Shefford station, Que.

27501. July 23.—Authorizing Canadian Northern Ry. to build bridge over Riviere a Pierre, on Quebec & Lake St. John Ry., 57 miles from Quebec, Que.

27502. July 30.—Authorizing Saskatchewan Highways Department, on behalf of Fertile Valley rural municipality no. 205, to make highway over Canadian Northern Ry. Delisle-Elose Branch on north boundary, Sec. 1, Tp. 28, Range 9, west 3rd meridian.

27503. July 31.—Relieving Canadian Northern Ry. from providing further protection at highway 7 poles east of mileboard 291, Hanna Subdivision, near Mecheeche, Alta.

27504. July 30.—Ordering Canadian Northern Ry. to move machinery loading platform at North Battleford, Sask., and to extend freight shed 40 ft. and arrange for general waiting room not less than 20 by 23 ft., ladies' waiting room 16 by 19 ft., and lavatories flushed by city water.

27505. July 30.—Ordering C.P.R. to build 2-pen stock yard at Cairns, Alta.; to be completed by Sept. 1.

27506. July 29.—Ordering Grand Trunk Pacific Ry. to build station at Lydden, Sask., by Oct. 31.

27507. July 29.—Dismissing application of Ribstone, Alta., Board of Trade, for order directing Grand Trunk Pacific Ry. to erect station building there, and ordering G.T.P.R. to appoint station agent at Ribstone by Sept. 1.

27508. Aug. 1.—Approving Montreal & Southern Counties Ry. Standard Maximum Freight Mileage Tariff C.R.C. 33, and Standard Maximum Passenger Tariff C.R.C. 21.

27509. July 31.—Approving proposed Supplement 11 to Canadian Freight Classification 16 as submitted for approval by G. C. Ransom, Chairman, Canadian Freight Association, June 4, containing certain increased, reduced, and additional ratings.

27510. July 29.—Ordering Edmonton, Dunvegan & British Columbia Ry. to appoint caretaker at Bushby station, Alta.

27511. July 31.—Authorizing Moose Jaw rural municipality 161 to build highway over Grand Trunk Pacific Ry. between Sec. 19, Tp. 17, Range 27, and Sec. 24, Tp. 17, Range 28, west 2nd meridian, Sask., and rescinding order 21858, May 22, 1914, in so far as it requires the opening up of this crossing.

27512. July 30.—Dismissing complaint of Canadian Corrugated & Fibreboard Container Association, Toronto, against proposed increase in ratings in supplement 11 to Canadian Freight Classification 16 on bonnets and hats, trimmed and untrimmed, when shipped in fibreboard, pulpboard, or corrugated strawboard containers.

27513. July 29.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to remove station agent at Cardiff, Alta., and open agency at Morinville, Alta., in lieu thereof; Cardiff to be continued as non-agency station and caretaker appointed to keep station clean and when necessary heated and lighted.

27514. July 31.—Relieving Canadian Northern Ry. from providing further protection at first crossing north of Edberg station, Alta.

27515. Aug. 6.—Approving agreement, July 18, between Bell Telephone Co. and Scottish Canadian Magnesite Co., Argenteuil County, Que.

27516. Aug. 6.—Authorizing Canadian Northern Ry. to build siding for N. T. Turgeon & Co. in Portneuf Parish, Que.

27517. Aug. 1.—Approving Hamilton Radial Electric Ry. standard maximum freight mileage tariff C.R.C. 5, and standard maximum passenger tariff C.R.C. 4, subject to compliance with Secs. 327 and 333 of Railway Act.

27518. July 31.—Amending Order No. 27228, May 14, re G.T.R. siding facilities for Dominion Steel Foundry Co., Hamilton, Ont.

27519. Aug. 2.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Bainbridge Lumber Co., Alberni District, B.C.

27520. Aug. 1.—Authorizing G.T.R. to build siding from Oxford St. southwesterly into Block B, Brantford, Ont.

27521. Aug. 1.—Authorizing G.T.R. to build siding for R. McDougall Co., Galt, Ont.



27522. Aug. 2.—Authorizing C.P.R. to rebuild bridge 27.3, Minnedosa Subdivision, Man.

27523. Aug. 7.—Authorizing G.T.R. to build spur for William Harris & Co., Toronto.

27524. Aug. 7.—Authorizing C.P.R. to build spur from yard to elevator 0, Montreal St., Fort William, Ont.

27525. Aug. 7.—Authorizing C.P.R. to open for traffic additional track mileage 0 to 2, and to use 2 concrete viaducts at mileage 0.9 and 1.8, Toronto Terminals, North Toronto Branch.

27526. Aug. 7.—Authorizing Canadian Northern Ry. to rebuild bridge over Little Batiscan River, Lake St. John Division, 107 miles from Quebec.

27527. Aug. 6.—Authorizing C.P.R. to build spur for Imperial Munitions Board and extensions to sidings on Godson Contracting Co.'s premises, Toronto.

27528. Aug. 2.—Amending order 27472, July 19, re C.P.R. siding for Montreal Light, Heat & Power Co., Montreal.

27529. Aug. 8.—Ordering Canadian Northern Ry. not to exceed 10 miles an hour with trains over highway first north of Edberg station, Alta., and rescinding order 27514, July 31.

27530. Aug. 2.—Ordering C.P.R. and Canadian Northern Ry. to hold their trains 454 and 457 respectively at Montfort Just., Que., at least 10 minutes, if not at time more than 10 minutes late, to enable passengers on either of trains to make connection.

27531. Aug. 1.—Extending to Sept. 1 time within which Canadian Northern Ry. under order 27348, June 25, shall provide well and extra yard for pigs at Kuroki, Sask.

27532. Aug. 8.—Amending order 27412, July 8, re Grand Trunk Pacific Ry. and C.P.R. connections at 3 points in Saskatchewan.

27533. Aug. 8.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to build spur for Allen & King Logging Co., Pine Grove, B.C.

27534. Aug. 1.—Authorizing Kettle Valley Ry. to divert public road in Lot 1822 on Copper Mountain Branch, B.C., for eliminating crossings at mileage 11.87 and 12.06; maximum grade on division is fixed at 8%, conditional upon B.C. Government paying not more than \$145 to cover cost.

27535. Aug. 2.—Dismissing application of Canyon City Lumber Co., Creston, B.C., for order disallowing C.P.R. charge of \$3 a car for handling on applicant's spur carload freight other than that consigned to applicants.

27536. Aug. 2.—Ordering that shipments of fruit and vegetables by Similkameen Farmers' Institute, Keremeos, B.C., to points in Alberta and Saskatchewan be moved via Sweet Grass on Great Northern Ry., and Coultis on C.P.R.; C.P.R. and G.N.R. to file tariffs showing rates from Similkameen Valley to Alberta and Saskatchewan points as far east as Moose Jaw by suggested routing.

27537. Aug. 8.—Authorizing Grand Trunk Pacific Saskatchewan Ry. to operate over C.P.R. crossings at Weyburn, Sask., until Jan. 1, 1919, pending installation of interlocking plant as required by order 18064; crossings to be protected by flagmen appointed by C.P.R., at expense of G.T.P.S.R.

27538. Aug. 9.—Approving clearances at Grand Trunk Pacific Branch Lines Co.'s tracks at freight shed, Calgary, Alta.

27539. Aug. 1.—Amending order 8942, Nov. 30, 1909, re Michigan Central Rd. and Pere Marquette Ry. crossings at Highgate and Muirkirk stations, Ont.

27540. Aug. 2.—Amending order 26798, Dec. 4, 1917, re G.T.R. and Pere Marquette Ry. crossing of Devonshire Road, Walkerville, Ont.

27541. Aug. 9.—Ordering G.T.R. not to exceed 10 miles an hour with trains over crossing at Grant St., St. Johns, Que.

27542. Aug. 10.—Authorizing Edmonton, Dunvegan & British Columbia Ry. by special tariff to vary terms of its livestock contract form limiting its liability as follows:—"No head of cattle, except calves exceeds \$40 in value; no head of sheep exceeds \$5, and that the said contents of no car exceeds \$600."

27543. Aug. 10.—Dismissing application of Brotherhood of Locomotive Engineers for order directing that switch and transfer locomotives be equipped with wedge tanks low enough for locomotive men to see over and with headlight on rear.

27544. Aug. 10.—Ordering Canadian Northern Ry. to erect 4th class station at Ashern, Man., by October 1.

27545. July 31.—Ordering that crossing of Niagara, St. Catharines & Toronto Ry., by G.T.R. at Port Colborne, Ont., be protected by derails on N. St. C. & T. R. and home signals on G.T.R., G.T.R. tracks to be bonded for 1,400 ft. to east and 2,600 ft. to west; signals on G.T.R. to be left normally clear and levers operated by N. St. C. & T. R. conductors; work to be done by N. St. C. & T. R. and completed by Dec. 31.

When the Quebec & Saguenay Ry. is opened for traffic between St. Joachim and Baie St. Paul, Que., early in September, the passenger traffic at Quebec will be handled in and out of the St. Andrew St. station, and the freight traffic will be handled in and out of the Limoilou station of the Quebec & Lake St. John Ry.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Aug. 9, 1918.	Wheat. Bushels.	Oats. Bushels.	Barley. Bushels.	Flax. Bushels.	Totals. Bushels.
<b>Fort Arthur—</b>					
C.P.R. ....	73,553	114,592	26,124	6,230	220,499
Consolidated Elevator Co. ....	6,749	91,742	11,825	32,305	142,621
Empire Elevator Co. ....	19,293	107,317	17,982	28,157	144,163
Ogilvie Flour Mills Co. ....	51,532	126,001	32,491	.....	210,024
Western Terminal Elevator Co. ....	133,340	81,877	12,827	48,423	109,787
G.T. Pacific ....	16,878	306,322	40,469	14,657	378,326
Grain Growers' Grain Co. ....	12,420	724,185	67,968	.....	789,733
Fort William Elevator Co. ....	142,784	310,087	17,019	7,186	291,508
Eastern Terminal Elevator Co. ....	17,875	47,509	11,314	.....	50,943
Northwestern Elevator Co. ....	26,198	139,817	12,669	.....	178,684
<b>Port Arthur—</b>					
Port Arthur Elevator Co. ....	16,004	601,208	114,844	19,364	729,412
D. Horn & Co. ....	.....	.....	.....	.....	.....
Canadian Government Elevator ....	136,358	265,269	14,122	43,391	286,424
Thunder Bay ....	19,825	531,663	42,032	14,254	607,774
Davidson & Smith ....	6,688	98,416	75,248	.....	180,352
Saskatchewan Co-op. Elevator Co. ....	6,423	183,153	19,690	24,154	233,420
<b>Total Terminal Elevators</b> .....	<b>69,771</b>	<b>3,729,159</b>	<b>516,624</b>	<b>238,121</b>	<b>4,553,675</b>
<b>Saskatoon Can. Govt. Elevator</b> .....	<b>25,352</b>	<b>187,283</b>	<b>5,911</b>	<b>754</b>	<b>219,300</b>
<b>Moose Jaw Can. Govt. Elevator</b> .....	<b>6,109</b>	<b>175,445</b>	<b>70</b>	<b>103</b>	<b>181,728</b>
<b>Calgary Can. Govt. Elevator</b> .....	<b>3,429</b>	<b>230,896</b>	<b>19,883</b>	<b>1,921</b>	<b>256,129</b>
<b>Vancouver Can. Govt. Elevator</b> .....	<b>48,762</b>	<b>19,761</b>	<b>.....</b>	<b>.....</b>	<b>68,523</b>
<b>Total interior terminal elevators..</b> .....	<b>83,652</b>	<b>613,385</b>	<b>25,864</b>	<b>2,779</b>	<b>725,680</b>
<b>Depot Harbor</b> .....	<b>.....</b>	<b>.....</b>	<b>.....</b>	<b>.....</b>	<b>.....</b>
<b>Midland—</b>					
Aberdeen Elevator Co. ....	29,839	14,507	.....	.....	44,346
Midland Elevator Co. ....	1,100	22,044	438	.....	23,582
Tiffin, G.T.P. ....	37,323	8,633	.....	.....	45,956
Port McNicol ....	85,301	137,801	28,035	.....	251,137
Collingwood .....	.....	.....	.....	.....	.....
<b>Goderich—</b>					
Elevator & Transit Co. ....	35,362	353,586	3,750	.....	392,698
Western Canada Flour Mills Co., Ltd. ....	.....	.....	.....	.....	.....
<b>Kingston—</b>					
Commercial Elevator Co. ....	30,392	25,138	491	.....	56,021
Port Colborne Dom. Govt. Elevator ....	.....	312,821	.....	.....	312,821
Port Colborne Maple Leaf Milling Co. ....	17,296	.....	.....	.....	17,296
Prescott .....	.....	.....	.....	.....	.....
<b>Montreal—</b>					
Harbor Commissioners no. 1 .....	902,656	381,078	484,260	.....	1,767,994
Harbor Commissioners no. 2 .....	63,940	387,955	104,318	.....	556,213
Montreal Warehousing Co. ....	363,517	251,243	111,334	.....	726,294
Quebec Harbor Commissioners .....	122,817	504,795	48,556	*39,010	715,178
West St. John, N.B. ....	123,390	12,445	50,752	.....	186,587
Halifax, N.S. ....	126,192	23,500	.....	.....	149,692
<b>Total public elevators</b> .....	<b>1,939,125</b>	<b>2,435,546</b>	<b>832,134</b>	<b>*39,010</b>	<b>5,245,815</b>
<b>Total quantity in store</b> .....	<b>2,092,548</b>	<b>6,778,090</b>	<b>1,374,622</b>	<b>240,900</b>	<b>10,525,180</b>
*Corn. †Wheat overshipped.					

## Canadian Northern Railway Construction, Betterments, Etc.

**Quebec Union Station.**—A press report states that plans have been prepared for the erection of a new station to replace the old Quebec & Lake St. John Ry. St. Andrew St. station. The intention is said to be to build a union station for all lines owned or operated by the Dominion Government, entering Quebec.

**Regina Siding.**—The company is applying to the Board of Railway Commissioners for permission to construct a spur track through blocks 80, 81 and 82, and the T. Eaton warehouse site in Regina, Sask.

**New Westminster-Steveston Line.**—It was reported in New Westminster, B.C., Aug. 17, that it is not likely that any work will be done for some time towards the rebuilding of the half mile trestle on the branch line to Steveston, which was burned in June.

**Vancouver Island Lines.**—The company's line on Vancouver Island is graded from Victoria to Nitinat River, over 100 miles, and on this about 10 miles of track has been laid from the south end. About 40 miles beyond the present end of track is the Sooke River, where there is some bridge work to be done. The B.C. Government has been advocating the laying of track from the north end, so as to connect with the Esquimalt & Nanaimo Ry., to get out spruce for aeroplane manufacture, the rails to be supplied by the B.C. Government. Referring to the matter on Aug. 10, the B.C. Premier is reported to have said that however desirable it would be to have an additional 22 miles to con-

nect Sooke and Cowichan Lakes, he did not see that the government could reopen the question with the Dominion Government.

It would appear from statements reported to have been made by the B.C. Premier and others, that the arrangement is that rails for laying some 70 miles of track on C.N.R. lines on Vancouver Island are to be supplied by the B.C. Government from Pacific Great Eastern Ry. orders.

M. H. MacLeod, General Manager and Chief Engineer, Western Lines, C.N.R., was in Victoria recently in consultation with the government upon the matter.

The question of the purchase of additional land on the Songhees Reserve at Victoria for terminal purposes has been settled, 40 acres additional having been granted to the company, at a price agreed upon. (Aug., pg. 335.)

**Reid Newfoundland Co.'s Department of Resources.**—A department for the development of the natural resources of Newfoundland, is reported to have been started by the Reid Newfoundland Co., under the charge of J. W. Forbes. According to a press report, the department will make a thorough survey and exploration of all the lands in the colony owned by the company along its railway lines and ascertain its mineral, timber, agricultural and water resources, and take steps to have them developed. It is expected that as a result new industries will be brought into the colony, and a larger population attracted. The R.N. Co. is preparing to operate a coal mine on block 7 of its land area.



## Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

**Canadian Railway Troops' Work.**—The Roman Catholic Bishop of London, Ont. (M. F. Fallon), who has been visiting the British western front, is reported to have said in an interview in London, Eng.:—"In the matter of transportation Canada has secured a decided triumph. This is particularly the case with regard to her railways and her system of tramways. In rapid and effective construction, our railway troops are unequalled, and to them is due very much of the credit for the rapid and constant provision of all the supplies needed by the men in the trenches."

**Track Making at the Front.**—The Toronto Globe says:—"The Canadian railway men have done great work at the front, but it is the Germans who are making tracks just now."

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association had contributed \$89,436.86 to the Canadian Red Cross and Canadian Patriotic Fund, up to Apr. 30.

ver Pilotage Authority, is on leave in Vancouver, having been in the Royal Navy since the outbreak of war.

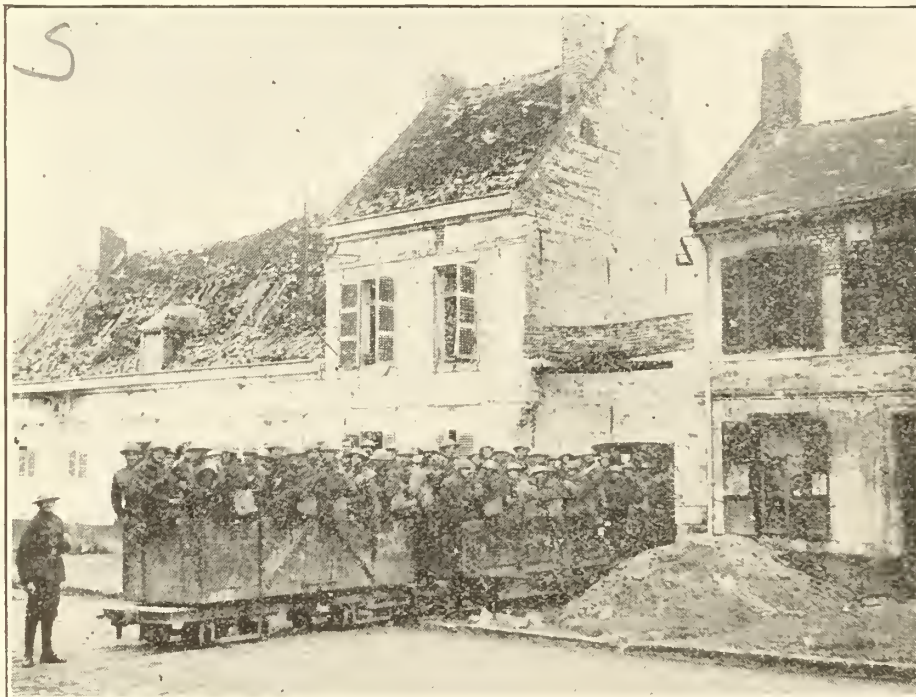
Brigadier-General A. C. Joly de Lotbiniere, C.I.E., has been gazetted Chief Engineer in the Imperial Army. He was born at Quebec, Que., and educated at Lennoxville, Que., and at the Royal Mil-

hydro electric power installation on the River Shelum in Kashmir, which supplied power for the operation of the Abbottabad Srinagar Ry., for dredging the River Shelum in Kashmir and for industrial purposes in Kashmir and the Punjab.

Capt. C. S. L. Hertzberg, A.M.E.I.C., who was invalided from the front some



In a locomotive yard on the British Western Front in France. British official photograph. Crown copyright reserved. Photograph loaned by C.P.R.



A short cut to the front line on the British Western Front in France. A light railway running through a house. British official photograph. Crown copyright reserved. Photograph loaned by C.P.R.

### PERSONAL NOTES.

Lieut.-Col. T. V. Anderson, D.S.O., who has been gazetted commandant of the Engineers' Training Corps, Seaforth, Eng., with the title of Assistant Director of Signals, is a son of Col. W. P. Anderson, C.M.G., Chief Engineer, Dominion Marine Department.

Capt. F. W. Evans, R.N.R., a former commander of one of the Canadian Pacific Ocean Services' steamships on the Pacific Ocean, and also a member of the Vancou-

tary College, Kingston, Ont., graduating in 1883, and receiving a commission in the Royal Engineers in 1886. Prior to the present war, his service has been chiefly in India, where he proposed and carried out the first large hydro electric transmission power scheme in the East, viz., the Cauvery Falls transmission to the Kolar goldfields in Mysore, which was, for some time, the longest power transmission line in the world. He was also engaged on the construction of the large

months ago, and has since held positions at the Spadina Military Hospital and the District Depot, Toronto, and has been transferred to the Canadian Engineers' office at Toronto Military headquarters, is a son of A. L. Hertzberg, M.E.I.C., Engineer, Ontario District, C.P.R., Toronto.

Lieut. W. L. Lanigan, Royal Air Force, whose death in an airplane accident in England was announced in our last issue, was son of W. B. Lanigan, Assistant Freight Traffic Manager, C.P.R., Winnipeg. The funeral took place July 16, and was attended by A. V. Clark, Secretary to European Manager, C.P.R., London, Eng.

Lieut. Robt. Luxton, Canadian Railway Troops, has been awarded the Military Cross. While on a battery being subjected to heavy enemy fire, he observed an enemy shell hit one of the dugouts near the battery. He and two sappers thereupon volunteered their services and went out and dressed the wounds of one man, whom this officer got away to the dressing station on a lorry. After working tirelessly for half an hour, he succeeded in extricating two noncommissioned officers and two men belonging to the battery, who had been buried beneath the debris. Though this splendid and gallant work of rescue was carried out under a heavy and harassing fire, the rescuers acted throughout with an utter disregard of their personal safety, and their conduct was worthy of the highest praise.

Capt. Malcolm A. McKechnie, No. 6 Field Ambulance, reported killed in action, Aug. 8, was formerly a physician for the Canadian Northern Ry., and went overseas from Winnipeg with the Cameron Highlanders.

Lieut. T. C. Martin, R.A.F., who was reported missing on Aug. 10, is son of G. C. Martin, General Traffic Manager, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont.



Capt. E. G. T. Penny, reported killed in action, Aug. 8, was a son of E. Goff Penny, of Montreal, Manager of the Memphramagog Navigation Co., Georgeville, Que., and brother of A. G. Penny, formerly Advertising Agent, Canadian Northern Ry., Toronto, now editor of the Quebec Chronicle, and a member of a party of Canadian editors who recently visited the front.

Temporary Colonel C. W. P. Ramsey, C.M.G., Canadian Railway Services, has been seconded for duty with the War

Office. He went overseas early in 1915, in command of the Canadian Overseas Railway Construction Corps, with the rank of Lieutenant-Colonel, and was created a Companion of the Order of St. Michael and St. George, for service in the field, in June, 1916. Prior to entering military service, he was Engineer of Construction, Eastern Lines, C.P.R., and was granted extended leave of absence.

Lieut. F. W. Rous, who has been reported as in a hospital in London, Eng., with gunshot wound in the shoulder, was

formerly Secretary-Treasurer, Canada & Gulf Terminal Ry.

Lieutenant A. T. Shaw, Royal Warwick Regiment, who died of wounds received in action in Italy, in June, was, prior to enlistment, in the Traffic Department, Canadian Northern Ry., Birmingham, Eng. He enlisted as a private in 1915 and was wounded in that year. He went to Italy in Dec., 1917, having been granted a commission, and his commanding officer reported that his conduct under fire was magnificent.

## Organization of Board of Adjustment for Railway Employees' Wages.

The illustration on the first page of this issue shows the railway officials, and the railway employees organizations' officials, who attended a meeting in Montreal Aug. 7, when the following agreement was entered into:

Memorandum of agreement made between the Canadian Railway War Board, acting for the railways of Canada, members thereof, of the one part; and the Brotherhood of Locomotive Engineers; the Brotherhood of Locomotive Firemen and Enginemen; the Order of Railway Conductors; the Brotherhood of Railroad Trainmen; the Order of Railway Telegraphers and the International Brotherhood of Maintenance of Way Employees, acting for the said classes of employees on the said railways, of the other part.

Whereas the parties hereto, in united desire to avoid disputes or misunderstandings which would tend to lessen the efficiency of transportation service in Canada during the war, have resolved upon the appointment of a board composed of members to be selected as hereinafter prescribed, which shall have full power and authority to determine all differences which may arise between any of the said railways and any of the classes of its employees above mentioned, and which shall not be promptly adjusted between the officers and employees of the railway concerned; including the interpretation or application of wage schedules or agreements, and the application to the railways of Canada of General Order 27 of the Director General of the United States Railroad Administration; with authority to make such amendments or additions in line with such amendments or additions as may be made thereto for the railways in the U.S. as may be necessary, having due regard to the rights of the several classes of employees and of the railways respectively. Now therefore it is agreed by and between the parties as follows:

1. There shall be at once created a board, to be known as Canadian Board of Adjustment No. 1, to consist of 12 members, 6 to be selected by the Canadian Railway War Board, and compensated by the railways, and 6 by the executive officers of the organizations of employees hereinbefore named, and compensated by such organizations.

2. The Canadian Board of Adjustment No. 1 shall meet in Montreal within 15 days after the selection of its members and select a chairman and a vice chairman, who shall be members of the board. The chairman or vice chairman will preside at meetings of the board, and both will be required to vote upon the adoption of all decisions by the board.

3. The board shall meet regularly, at stated times each month, and continue in session until all matters before it are considered.

4. Unless otherwise mutually agreed, all meetings of the board shall be held in Montreal; provided, that the board shall

have authority to empower two or more of its members to conduct hearings and pass upon controversies when properly submitted at any place designated by the board; provided further, that such division of the board will not be authorized to make final decision. All decisions shall be made, approved or ratified by the board as herein provided.

5. Should a vacancy occur in the board for any cause, such vacancy shall be immediately filled by the same appointive authority which made the original selection.

6. The Canadian Board of Adjustment No. 1 shall render decisions on all matters of controversy arising from interpretations of wage agreements and other matters in dispute, as provided in the preamble hereof, and when properly submitted to the board.

7. Wages and hours established by General Order 27 of the Director General of the U.S. Railroad Administration, and amendments thereto, shall be incorporated into existing agreements on the several railways, and should differences arise between the management and the employees on any of the railways as to such incorporation, such questions of difference shall be decided by Canadian Board of Adjustment No. 1, when properly presented thereto.

8. Personal grievances or controversies arising under interpretation of wage agreements, and all other disputes arising or now properly pending between officials of a railway and its employees covered by this understanding, will be handled in their usual manner by general committees of the employees up to and including the chief operating officer of the railway (or some one officially designated by him), when, if an agreement is not reached, the chairman of the general committee of employees may refer the matter to the executive officer of the organization concerned, and if the contention of the employees' committee is approved by such executive officer, then the chief operating officer of the railway and the executive officer of the organization concerned shall refer the matter, with all supporting papers, to Canadian Board of Adjustment No. 1, which board shall promptly hear and decide the case, giving due notice to the chief operating officer of the railway interested and to the executive officer of the organization concerned of the time set for hearing.

9. No matter will be considered by Canadian Board of Adjustment No. 1 unless officially referred to it in the manner herein prescribed, provided, however, that no case having origin in circumstances occurring prior to the date hereof shall be referred to the board, except those arising out of the application of the said General Order 27, or arising out of disputes properly pending at the date of this agreement, as mentioned in clause 8.

10. In hearings before Canadian Board

of Adjustment No. 1 in matter properly submitted for its consideration, the railway shall be represented by such person or persons as may be designated by the chief operating officer, and the employees shall be represented by such person or persons as may be designated by the executive officer of the organization concerned.

11. All clerical and office expenses will be borne equally by the Canadian Railway War Board and the organizations above mentioned. The railway directly concerned and the organization involved in a hearing will, respectively, assume any expense incurred in presenting a case.

12. In each case an effort should be made to present a joint concrete statement of facts as to any controversies, but the board is fully authorized to require information in addition to the concrete statement of facts, and may call upon the chief operating officer of the railway or the executive officer of the organization concerned for additional evidence, either oral or written.

13. All decisions of Canadian Board of Adjustment No. 1 shall be approved by a majority vote of all members of the board.

14. After a matter has been considered by the board, and in the event a majority vote cannot be obtained, then any 6 members of the board may elect to refer the matter upon which no decision has been reached to a referee to be unanimously agreed upon by the board, and in failure to agree, application shall be made to the Governor General in council for appointment of a referee, whose decision shall be final.

15. Canadian Board of Adjustment No. 1 shall keep a complete and accurate record of all matters submitted for its consideration and of all decisions made by the board.

16. A report of all cases decided, including the decisions, will be filed with the Canadian Railway War Board, and with the chief operating officer of the railway affected, and with the executive officer of the organization concerned.

17. The Canadian Railway War Board further agrees that Canadian Board of Adjustment No. 1 shall have like authority to determine differences between any of the railways represented herein and any other classes of employees of such railway who may request and consent to submitting differences to Canadian Board of Adjustment No. 1, and to agree that the decision of the said board of adjustment shall be final.

18. This agreement shall remain in full force and effect during the period of the present war, and thereafter unless the Canadian Railway War Board, on the one hand, as representing the railways, or a majority of the executive officers of the organizations, on the other hand, as representing the employees, shall desire to terminate the same, which can, in these circumstances, be done on 30 days notice.



This agreement was signed on Aug. 7 for the Canadian Railway War Board by U. E. Gillen, Chairman, and W. M. Neal, General Secretary, and for the railway employees' organizations as follows:—Brotherhood of Locomotive Engineers, by Ash Kennedy, A.G.C.E.; Brotherhood of Locomotive Firemen and Enginemen, by G. K. Wark, Vice President; Order of Railway Conductors, by S. N. Berry, Vice President; Brotherhood of Railroad Trainmen, by Jas. Murdock, Vice President; Order of Railway Telegraphers, by J. M. Mein, Deputy President; International Brotherhood of Maintenance of Way Employees, by W. V. Turnbull, Vice President. Personnel, Etc., of Board of Adjustment.

In conformity with the above agreement, the Canadian Railway War Board

appointed its 6 representatives as follows: F. P. Brady, General Manager, Western Lines, Canadian Government Railways; S. J. Hungerford, General Manager, Eastern Lines, and A. J. Hills, Executive Assistant, Canadian Northern Ry.; A. D. MacTier, General Manager, Eastern Lines, and G. Hodge, Assistant to General Manager, Eastern Lines, Canadian Pacific Ry.; U. E. Gillen, Vice President, Grand Trunk Ry.

The railway employees organizations' representatives were appointed as follows: Ash Kennedy, A.G.C.E., Brotherhood of Locomotive Engineers; G. K. Wark, Vice President, Brotherhood of Locomotive Firemen and Enginemen; S. N. Berry, Vice President, Order of Railway Conductors; Jas. Murdock, Vice

President, Brotherhood of Railroad Trainmen; J. M. Mein, Deputy President, Order of Railway Telegraphers; Wm. Dorey, Vice President, International Brotherhood of Maintenance of Way Employees.

The Board of Adjustment held its first meeting at Montreal, Aug. 19, and elected U. E. Gillen, Vice President, G.T.R., as chairman; S. N. Berry, Vice President, Order of Railway Conductors, as vice chairman, and W. M. Neal, General Secretary, Canadian Railway War Board, as General Secretary.

It was decided to hold regular monthly meetings during the remaining portion of 1918, as follows: Sept. 10, Oct. 8, Nov. 12, Dec. 10. All decisions of the board will be issued over the chairman and vice chairman's signatures.

## Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—E. E. STEVENS, heretofore Claims Agent, Moncton, N.B., has been appointed Safety Engineer, Eastern Lines, vice J. E. Long, appointed Superintendent of Safety, Delaware & Hudson Ry. Office, Moncton, N.B.

T. THORNING, heretofore hostler, Cochrane, Ont., has been appointed acting Locomotive Foreman, Hearst, Ont., vice C. W. Wilson, Locomotive Foreman, on leave of absence for military service.

H. MITCHINSON has been appointed Safety Engineer, Western Lines, vice J. E. Long, appointed Superintendent of Safety, Delaware & Hudson Ry. Office, Winnipeg.

**Canadian Northern Ry.**—W. ADAMS has been appointed Signal Inspector, Port Arthur, Ont., vice H. E. McDonald, transferred to Duluth, Winnipeg & Pacific Ry. service, as reported in our last issue.

J. J. CROWE has been appointed acting Signal Inspector, Edmonton, Alta., as reported in our last issue.

**Canadian Pacific Ry.**—W. R. MACINNES, heretofore Freight Traffic Manager, has been appointed Vice President in charge of Traffic (Freight and Passenger), vice G. M. Bosworth, who has retired, but who retains his other position, viz., Chairman, Canadian Pacific Ocean Services, Ltd., to which he was appointed Jan. 1, 1916. The President, Lord Shaughnessy, issued the following circular in this connection, Aug. 14:—"Geo. M. Bosworth, Vice President of the company, will retire Sept. 1, proximo, to become Chairman of Canadian Pacific Ocean Services, Ltd., and the directors have appointed Wm. R. MacInnes, Vice President, to succeed him. Mr. MacInnes will have charge of all matters connected with the company's Traffic Department, and will perform such other duties as may be assigned to him."

W. B. LANIGAN, heretofore Assistant Freight Traffic Manager, Western Lines, Winnipeg, has been appointed Freight Traffic Manager, vice W. R. MacInnes, promoted. Office, Montreal.

W. B. BROWN, heretofore Car Service Agent, New Brunswick District, St. John, N.B., is temporarily engaged on special duty.

W. COULTER has resumed as Freight Agent, Ottawa, vice E. A. Campbell, transferred.

**Canadian Pacific Ocean Services, Ltd.**—E. Alexander, Secretary, issued the following circular, Aug. 14:—"Pursuant to

a resolution of the directors, GEO. M. BOSWORTH, Chairman, will, on and after Sept. 1, devote all his time to the affairs of the company as chief executive. Officers of the company will report to him and be governed by his instructions." Office, Montreal.



Wm. R. MacInnes  
Vice President, Canadian Pacific Railway.

**Central Vermont Ry.**—The following appointments have been made by J. W. Wardlaw, General Manager, under the U.S. Railroad Administration, all with offices at St. Albans, Vt.:—

E. DESCHENES, heretofore Auditor, has been appointed General Auditor.

J. W. REDMOND, heretofore Counsel, has been appointed General Solicitor.

P. D. FITZPATRICK, heretofore Valuation Engineer and General Roadmaster, has been appointed Chief Engineer.

W. H. CHAFFEE, heretofore Treasurer, has been appointed Local Treasurer.

H. L. BLACK has been appointed Superintendent of Signals. Office, Portland, Me.

**Delaware & Hudson Ry.**—J. E. LONG, heretofore Safety Engineer, Canadian Government Railways, Moncton, N.B.,

has been appointed Superintendent of Safety, D. & H.R. Office, Albany, N.Y.

**Duluth, South Shore & Atlantic Ry.**—E. R. LEWIS, heretofore Assistant to General Manager, has been appointed Chief Engineer. Office, Duluth, Minn.

**Grand Trunk Ry.**—E. L. DYSON has been appointed Division Signal Foreman, Montreal Division, vice H. L. Black, transferred. Office, Richmond, Que.

F. E. LITTLE has been appointed Water Service Foreman, Montreal Division, vice J. C. Gokey, transferred. Office, Richmond, Que.

G. MURGATROYD has been appointed Assistant Engineer, Montreal Division, vice C. B. Weiss, transferred. Office, Montreal.

B. J. FARR, Master Mechanic (Road), Battle Creek, Mich., has had his jurisdiction extended to include the locomotive shops there; J. C. GARDEN having been transferred to Stratford, Ont., as announced in our last issue.

C. J. PIERCE, heretofore Manager, National-Despatch Great Eastern Line, Boston, Mass., has been appointed General Agent, Freight Department, G.T.R. Lines in Canada, in charge of traffic to and from points in the New England States. He continues to act as Manager, National Despatch-Great Eastern Line, in respect to business which that line handled prior to June 1. Office, Boston, Mass.

ROY BULLEN, General Agent, Freight Department, Minneapolis, Minn., and T. C. BURGESS, Commercial Agent there, having been assigned to other duties, JAMES WAUGH, heretofore Commercial Agent, San Francisco, Cal., has been appointed Commercial Agent, G.T.R. Lines in Canada, Minneapolis, Minn. Office, 713 Metropolitan Life Bldg.

The following appointments have been made for G.T.R. Lines in New England, under the U.S. Railroad Administration:

G. L. NELSON, heretofore Division Freight Agent, Portland, Me., has been appointed Traffic Manager. Office, Portland, Me.

J. H. EDWARD, heretofore agent, Portland, Me., has been appointed Local Treasurer and Paymaster. Office, Portland, Me.

A. E. PLANT, heretofore chief clerk, Montreal, has been appointed General Auditor and Freight Claims Agent. Office, Portland, Me.

H. P. SWEETSER, heretofore Solicitor, has been appointed General Solicitor. Office, Portland, Me.

M. W. STEVENS, heretofore Storekeeper, Portland, Me., has been appointed Purchasing Agent and Storekeeper, Portland, Me.



J. W. FARRELL, heretofore Trainmaster, Island Pond, Vt., has been appointed Superintendent. Office, Portland, Me.

J. HAY, heretofore Foreman, Sarnia, Ont., has been appointed Master Mechanic. Office, Portland, Me.

E. W. WILLIAMS, heretofore Traveling Inspector, Western Lines, Chicago, Ill., has been appointed chief clerk and Superintendent Car and Time Service, Portland, Me.

C. B. WEISS, heretofore Assistant Engineer, Montreal Division and Montreal Terminals, has been appointed Chief Engineer. Office, Portland, Me.

J. M. GIBSON, heretofore General Foreman, District 1, has been appointed Supervisor of Bridges and Buildings. Office, Portland, Me.

J. J. FOLEY has been appointed Supervisor of Track, east of Shelburne, N.H.

M. CORCORAN, heretofore Supervisor of Track, Gorham, N.H., has been appointed Supervisor of Track, west of Shelburne, N.H.

W. M. COOPER, heretofore Road Foreman of Locomotives, has been appointed Trainmaster and Road Foreman of Locomotives. Office, Portland, Me.

Great Northern Ry.—J. M. GRUBER, heretofore Vice President and General Manager, has been appointed Federal General Manager. Office, St. Paul, Minn.

E. J. HEALY, District Traffic Agent, Tacoma, Wash., is reported to have been appointed District Traffic Agent, Vancouver, B.C., K. J. Burns, Assistant General Freight and Passenger Agent there, having resigned to enter other service.

Michigan Central Rd.—E. A. WIGREN, heretofore Assistant Auditor, has been appointed Auditor, M.C.R., Toronto, Hamilton & Buffalo Ry., Toronto, Hamilton & Buffalo Navigation Co., and Chicago, Kalamazoo & Saginaw Ry., vice F. O. Waldo, resigned. Office, Detroit, Mich.

Northern Pacific Ry.—E. E. DILDINE, heretofore Assistant Superintendent of Telegraph, Tacoma, Wash., has been appointed Superintendent of Telegraph, St. Paul, Minn.

Pacific Great Eastern Ry.—G. L. COURTNEY has been appointed General Manager, the former General Manager, A. H. Sperry, having resigned. Office, Vancouver, B.C.

Pere Marquette Ry.—F. H. ALFRED, Federal Manager, Detroit, Mich., has had his jurisdiction extended to cover the car ferry lines on Lake Michigan, formerly operated by the Ann Arbor, Pere Marquette and Grand Trunk Rys.

Temiscouata Ry.—A. NADEAU has been appointed General Freight and Passenger Agent, vice F. X. Belanger, who has resigned on his appointment in charge of traffic department, Fraser Companies, Ltd., Edmundston, N.B. Office, Riviere du Loup, Que.

T. N. WALSH has been appointed Freight Claim Agent, Riviere du Loup, Que.

Toronto, Hamilton & Buffalo Ry.—G. C. MARTIN, heretofore General Freight and Passenger Agent, has been appointed General Traffic Manager. Office, Hamilton, Ont.

R. F. HILL, heretofore Assistant General Freight and Passenger Agent, has been appointed General Freight and Passenger Agent, vice G. C. Martin, promoted. Office, Hamilton, Ont.

A. I. COOMBES, heretofore General Manager's chief clerk, has been appointed Assistant to General Manager. Office, Hamilton, Ont.

C. M. DENT, accountant, is reported to have been appointed General Manager's chief clerk, Hamilton, Ont., vice A. I. Coombes, promoted.

## White Pass and Yukon Railway Reorganization.

Meetings of the holders of the company's 5% consolidated first mortgage debenture stock, and of the 6% debentures, of income debenture stock, and of ordinary shares of the White Pass & Yukon Ry. Co., were called to be held in London, Eng., Aug. 2, by order of the court, to approve a scheme for the reorganization of the capital. The proposals are outlined as follows:—

Under the abnormal condition produced by the continuance of the war, it is essential that the White Pass enterprise should be provided with a further £95,000, to be applied, £52,000 for working capital, £15,000 in paying off the advance from Glyn, Mills, Currie and Co., about £23,000 in paying off the loan of \$110,000 to the Pacific and Arctic Ry. and Navigation Co. from the Mortgage and Debenture Co., which became due Jan. 1, and £5,000 in paying commission and the expenses of carrying through this scheme. It is accordingly proposed to create £100,000 7% prior lien debenture stock, repayable Dec. 31, 1935, and constituting a first charge on the whole of the assets and undertaking, to be secured by a trust deed which will provide, among other things, that further prior lien debenture stock up to £200,000 ranking *pari passu* with the £100,000 prior lien stock may hereafter be issued from time to time as to £100,000 if the necessity is decided by the directors and approved by Close Bros., who have agreed to be a financing syndicate, and as to a further £100,000 if the holders of the prior lien stock approve. The company may redeem all or any part of the stock at any time on 6 months notice at a premium of 5%. It is proposed to issue the stock at 95 and to offer it in the first instance to the existing shareholders. It is further proposed to give to each subscriber for £25 prior lien debenture stock one A share.

It is also proposed to create £5 consolidated mortgage debenture stock for £315,163, constituting a second charge on the assets and undertaking, the stock to be issued and transferable in multiples of 1s, repayable Dec. 31, 1950. Interest during 5 years to be reckoned from June 30 next following after the end of the war will be payable in each year only out of the net profits for that year after payment of all outgoings and expenses, and after provision has been made for a sinking fund for the redemption of the prior lien debenture stock and for depreciation and reserve, and will not be cumulative during that period.

It is further proposed to reduce the existing amount of income debenture stock by two-thirds, and to create by way of substitution 6% income debenture stock up to £589,465 4s., issuable and transferable in multiples of 1s. The stock will constitute a third charge by way of floating security, will be repayable Dec. 31, 1950, and interest will be payable only if and so far as in any financial year there may be net profits available for that purpose, after paying all outgoings and expenses, including interest on the prior lien stock and the consolidated stock, and after the directors have made such provision as they may think proper for depreciation, reserve fund, and contingencies.

The £211,932 existing debentures, the £23,308 10s. income debenture stocks, and the £67,000 branch line bonds of the British Yukon Ry. Co. in the hands of the sinking fund trustees will be cancelled. The holders of existing debenture stock,

debentures, and income debenture stock respectively will surrender their present securities to the company and accept for each £100 of debenture stock £40 of consolidated stock and £60 of 6% income stock; for each £100 of debentures £30 of consolidated stock and £70 of 6% income stock; for each £100 of existing income stock 33 1/3% of new 6% income stock.

W. B. Close will put at the disposal of the company 1,000 fully paid £10 shares, which will be sub-divided into £1 A shares, these shares having the right to 80% of the profits available for dividend in each year; if the company be wound up to 80% of the assets available for distribution among the members; to 40 votes in respect of each A share; and to nominate two directors. Each subscriber for prior lien debenture stock will receive one A share in respect of each £25 of that stock allotted to him, and the remainder of the 6,000 A shares will be transferred to the financing syndicate as a commission for undertaking the financial arrangements. In addition to £2,000 payable in cash for their services in connection with this scheme, a commission of 5% in cash on all prior lien debenture stock subscribed and paid for in cash by security holders or shareholders of the company, and a commission of 10% payable in prior lien debenture stock taken at 95 on an amount representing the difference, if any, between £100,000 and the face value of the prior lien debenture stock actually subscribed and paid for by the security holders and shareholders of the company, this difference being the amount which the syndicate will have to find if the whole of the prior lien debenture stock is not subscribed for. Close Brothers and Co. will, if and so far as sufficient prior lien stock shall not be subscribed to enable the company to make the payments and provide the working capital necessary, arrange that the debt due to the Mortgage and Debenture Co. shall be discharged by their accepting the amount in prior lien debenture stock at par and relevant A shares and provide until Dec. 31, 1920, a working capital of £50,000. All advances made by them or on account of the company will be secured by prior lien debenture stock of a face value greater by 25% than the amount of the money advanced, and will carry interest at 1% above the current rate for the time being on the Pacific Coast of America. Any advance by them for working capital will be repaid in each year out of the available earnings of the local companies. The capital of the company is to be reduced from £1,700,000 in 170,000 £10 ordinary shares to £283,000 in 10,000 £1 A shares and 136,500 £2 ordinary shares, the reduction to be effected by reducing the amount of each ordinary share from £10 to £2 and by cancelling the unissued shares; each reduced ordinary share will have one vote.

**Vessel Control in Canadian Territorial Waters.**—An order in council has been passed, subsequent to a conference between representatives of the Canadian, British and U.S. Navies, when it was agreed that the U.S. should control all coast patrols, sea patrols, protection of traffic and offensive action against enemy submarines as far east as the 65th meridian (Lockport, N.S.), including the outer part of the Bay of Fundy, providing that U.S. naval officers be authorized to visit and search all vessels within Canadian waters west of the 65th meridian.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alaska Railways.**—Announcement was made in Washington, D.C., Aug. 2, that only 3,000 men would be employed by the government upon construction of the railway in Alaska during this year, against 6,000 in 1917. Several sections of the coast lines will be linked up by the end of the year, and it is expected to have about 40 miles of additional grading on the inland section completed this year. Of the 560 miles of main and branch lines projected, 296 miles have been completed, of which 215 miles are main line.

**Canadian Pacific Ry.**—We are officially advised that the work being done by the company at St. John, N.B., under the Board of Railway Commissioners order 27431 of July 12, is the construction of a second track, alongside the existing main line between Fairville and Bay Shore stations, 1.3 miles. It consists of linking up existing side tracks by the construction of half a mile of new track and the conversion of eight-tenths of a mile of siding into main line. The existing gradients and curves are not to be changed. Five streets are crossed at grade, and a second crossing of the St. John Ry. is to be made at Main St., Fairville, within the protection of the present half interlocking plant. The work is being done by the company's own forces, and is expected to be completed by Oct. 1.

A half mile timber trestle over the valley near Elbow, Sask., built in 1909 on the Moose Jaw-Kerrobert line, settled some 8 ft. during the filling in process on Aug. 9. The trestle was strengthened temporarily and traffic was resumed in a few days. It will be some little time, a press report says, before the permanent strengthening of the structure is completed. (Aug., pg. 344.)

**Central Canada Ry.**—Good progress is reported to have been made to date with the erection of the superstructure of the bridge across the Peace River, and it is expected to have it ready for running trains early in 1919. A description was given in Canadian Railway and Marine World for June, 1917, pg. 224. (July, pg. 285.)

**Dominion Atlantic Ry.**—The station at Round Hill, N.S., was destroyed by fire, July 24, after being struck by lightning. (Jan., 1917, pg. 24.)

**Edmonton and Southwestern Ry.**—The Edmonton, Alta., City Council has declined to grant the Hydro-Electro Co.'s request for an extension of time to carry out its construction programme, which included the building of a railway from Edmonton to the Blue Falls on the Saskatchewan River. (Aug., pg. 337.)

**Essex Terminal Ry.**—The Board of Railway Commissioners has authorized the opening for traffic of the extension from Ojibway to Quarries, Ont., where the Brunner, Mond Co. is erecting a large Solway process plant. The contract for building the extension was let to the Chick Construction Co., Windsor, Ont.

We are officially advised that nothing has been done in the way of work or survey on the proposed extension to Pelton, Ont. (Jan., pg. 12.)

**Grand Trunk Ry.**—The freight sheds at the central station, Ottawa, were destroyed by fire started by an explosion of a tank of gasoline, Aug. 16. The loss is placed at: freight shed, \$15,000; twenty-eight freight cars, \$20,000; contents of freight shed and cars, \$50,000. The freight sheds were 800 x 40 ft.

The station at Mitchell, Ont., was de-

stroyed by fire, Aug. 14. The building, which was 100 ft. x 30 ft., was a frame structure erected about 45 years ago to replace the original station, which also was burned. It was shown that the fire originated through H. Daoust, a former employe, lighting a match over a little pool of alcohol which had leaked from a barrel. It was reported Aug. 21 that criminal proceedings were likely to be taken against him.

The new freight shed on Sandwich St., Windsor, Ont., is reported completed and in use. (Aug., pg. 337.)

**Grand Trunk Pacific Ry.**—H. G. Kelley, President, G.T.R. and G.T.P.R., returned to Montreal July 30, after completing an inspection of the system. The physical condition of the G.T.P.R., he is reported to have said, is excellent, and traffic is increasing satisfactorily. It is not proposed to extend any of the company's branch lines at present, but certain improvements, calculated to increase the efficiency of the lines, are in progress at various points. These included the filling in of some of the large trestle bridges, the construction of buildings, etc. (June, pg. 240.)

**Medicine Hat, Alta.**—Some years ago a short spur line was built connecting the Ansley coal mine with Medicine Hat, Alta. We are officially advised that J. B. Swan and his associate, J. Smith, who are developing the Swan mine, are building an additional 3.50 miles of line, to connect the Swan mine with the Ansley spur line, and so to give it connection with the C.P.R. at or near Medicine Hat. The country through which the spur is being constructed is of an unpromising character, being made up of side hills, coulees and saw tooth pinnacles. The distance from the mouth of the mine to the prairie is 1.50 miles, and there is a rise of 150 ft.; but the route has been so located that the steepest gradient is 2% and the sharpest curve 4 degrees. From the prairie to the old Ansley spur, the route is practically level. Construction was started by M. Higdon, June 25, and it is expected that grading will be completed about Sept. 15. We were advised Aug. 2, that grading had been half completed, 47,000 cubic yards of material having been shifted during July. A newspaper account of the work states that one cut is 53 ft. deep, and another 38 ft., the material from which is being utilized in two fills, one of which requires 23,142 cu. yd. of material, and the other 17,600 cu. yd. The yards have been laid out about 500 ft. from the mouth of the mine. Grading has been completed for 4 tracks and provision is made so that 2 more can be laid when required. The track is expected to be laid and the spur to be ready for operation by Oct. 1. C. Le B. Miles is engineer in charge of the work. Arrangements have been made, we are advised, for leasing a locomotive from the C.P.R., but nothing definite had been done, up to Aug. 12, with respect to cars.

The distance of the Swan mine from Medicine Hat is about 7 miles. The machinery, including the electric cutting plant, is being installed. The seam of lignite to be worked is 7 ft. thick, and is said to be of superior quality. It is expected to be able to begin shipping at the rate of 350 tons a day, and to increase the output in a short time to 500 tons a day.

**Kettle Valley Ry.**—A press report states that grading on the 14 mile branch to the Copper Mountain mining area, is about 50% completed, and that the lower

end of the line, on which is the lightest part of the work, will be completed early in November. The upper end of the line, upon which location surveys are being completed, will have some heavy cuts and rockwork. W. P. Tierney is the contractor, and he is reported to have over 300 men employed. (July, pg. 285.)

**Michigan Central Rd.**—The new reinforced concrete bridge over the M.C.R. at Wyandotte St., Windsor, Ont., was opened for traffic recently. The first application for the erection of the bridge was made in 1908, but it took several years to settle the plans as between the company and the city, and it was not until 1917 that the contract for the work was let. The bridge was erected by the John W. Gray Construction Co., Toronto. It is 66 ft. wide, 32 ft. long in the clear, with approaches of 200 ft. each side. The tracks have been lowered 6 ft. (Feb., pg. 57.)

**Pacific Great Eastern Ry.**—On July 15, the Lieut.-Governor of British Columbia issued a proclamation bringing into force sec. 2 of the P.G.E. Settlement Act, under which the B.C. Government takes over the P.G.E. Development Co.'s lands and property.

A. F. Proctor, Chief Engineer, B.C. Railways Department, completed a trip of inspection over the line recently, and is reported to have said in an interview, the line from Squamish to the end of steel beyond Clinton, 181 miles, has been ballasted and surfaced, and is in first class condition. At 61-mile house, a station, warehouse and cattle pens are under construction. The end of track is near 100-mile house, and it is hoped to get it carried to Soda Creek early in 1919. There is water navigation from Soda Creek to Prince George.

Tenders were received to Aug. 2, for the completion of 42 miles of uncompleted line beyond the present end of track on a unit price basis or in the alternative, on a cost plus percentage basis. We have been officially advised that there are about 6 miles of light grading to be done, and there are about 1,000,000 ft. of timber work and some other work to be done to get ready for tracklaying. Tenders are reported to have been received among others from: The Foundation Co. of B.C., Ltd., Grant Smith & Co., Northern Construction Co., the Cotton Co., McKinnon & Co., Palmer Bros., Robinson & Co., Sullivan & Co., H. A. Stewart, J. W. Lund. A press dispatch, Aug. 16, reported the B.C. Premier as stating that the contract would likely be let to the Cotton Co. (Ltd.), Vancouver.

A Victoria press dispatch of Aug. 25 says:—"The Northern Construction Co. has secured the contract for the 42-mile extension of the Pacific Great Eastern Ry. The tender was \$419,000 on the unit basis, 5%  $\frac{1}{2}$  commission. There will be no commission on excess of estimate of cost. The contractors are to furnish steam shovels, rolling stock, and construction equipment free, and will get 25% on the saving of the unit prices."

Negotiations are reported to be practically completed in Seattle, Wash., for the purchase of a tug and a barge, to replace those now rented for the transfer of freight cars from Vancouver to Squamish. The tug formerly in use was destroyed by fire at the end of July. (Aug., pg. 337.)

**Quebec & Saguenay Ry.**—We are officially advised that the tenders received recently for station buildings on the line



were considered to be too high, and none were accepted. The question of erecting stations is in abeyance for the present. The line will be opened for traffic between St. Joachim and Baie St. Paul early in September. (Aug., pg. 337.)

**Quebec Bridge.**—A press dispatch of Aug. 13 stated that the contractors had completed all their work on the bridge, and that it was ready to be taken over by the government in its entirety. (June, pg. 241.)

The final official test of the bridge was made Aug. 21, in the presence of representatives of the Railways Department, the Quebec Bridge Commission, the Canadian Government Railways and the St. Lawrence Bridge Co., the builders. The bridge was tested by the operation over it of trains of the heaviest capacity operated, and by bringing them to a standstill on the central span. The test is reported to have been satisfactory in every particular. The results of the observation of the engineers were to be reported to the Railways Department, which would then formally take over the structure from the contractors.

**St. John & Quebec Ry.**—A press report states that as a result of the speeding up notice served by the New Brunswick Government on the Nova Scotia Construction Co., an additional number of men have been put on the construction of the extension of the line from Gagetown to the C.P.R. near Westfield, 37.8 miles. (Aug., pg. 337.)

### Railway Rolling Stock Orders and Deliveries.

The British Columbia Government is reported to have bought 30 freight cars in Chicago, Ill., for the Pacific Great Eastern Ry.

Canadian Government Railways have received 6 switching locomotives from Canadian Locomotive Co., for the western lines, and 106 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co., on account of orders placed in March.

The C.P.R., between July 16 and Aug. 14, received the following additions to rolling stock:—2 steel mail cars, 15 express refrigerator cars, 160 steel under-frame box cars, and 1 decapod locomotive, from its Angus shops, and 7 vans from its Winnipeg shops.

The U.S. Government has ordered an additional 500 consolidation locomotives from the Baldwin Locomotive Works; 15 additional light mikado locomotives from the Lima Locomotive Corporation, and 10,000 box, gondola and tank cars, distributed amongst 8 car building companies, for use of the U.S. Army in France.

The Dominion Government has bought 2 Marion ditchers for Eastern Lines, Canadian Government Railways, \$11,125 each, from F. H. Hopkins & Co.; 15 steel tank cars, 40 tons capacity, \$3,500 each, from American Railway Equipment Co.; 3 switching locomotives, \$43,095 each, from Toronto, Hamilton & Buffalo Ry., and 10 locomotives, \$10,000 each, from G.T.R., for Canadian Northern Ry.

The Canadian Government Railways are having a number of freight cars repaired and overhauled. Approximately 200 standard wooden box cars are to be repaired at Canadian Car & Foundry Co.'s Amherst, N.S., plant. These are of from 30 to 40 tons capacity, and some of them, where the roofs are defective, will be remodelled as roofless pulp cars. About

100 similar cars and some steel frame cars of 40 tons capacity, will also be repaired at the company's Montreal plant. A number of 40 ton box cars, and also some Hart-Otis cars, will be overhauled by the Eastern Car Co.

Following are chief details of the rotary snow plough, without tender, which the Dominion Government has ordered from the Montreal Locomotive Works, for the Canadian Northern Ry., as mentioned in a previous issue:—

Cylinders.....	17 x 24 in.
Plough truck wheels.....	33 in.
Boiler.....	60 in. diam.
Boiler pressure.....	190 lb.
Fire box.....	92 x 50 in.
Tubes, no., diam. and length.....	202—2 in. x 9 ft. 8 in.
Truck wheel base.....	4 ft. 6 in.
Wheel base, total.....	19 ft. 8½ in.
Weight in working order, front truck.....	82,500 lb.
back truck.....	73,500 lb.
Total.....	156,000 lb.
Fuel.....	soft coal
Heating surface, tubes.....	1,022 sq. ft.
Heating surface, firebox.....	130 sq. ft.
Heating surface, total.....	1,152 sq. ft.
Grate area.....	31.9 sq. ft.
Width of cut.....	15 ft.
Rotary wheel diam.....	9 ft. 8½ in.
Weight per axle.....	40,000 lb.
Length over all.....	38 ft. 3 in.
Height above rail, smoke stack.....	15 ft.

### Freight and Passenger Traffic Notes.

The Edmonton, Dunvegan & British Columbia Ry. has put in operation specially low rates for cattle and sheep going into the north country, and for feed going out.

A Quebec press report states that the traffic through Quebec on the National Transcontinental Ry. at present is about double what it was at the same time last year.

Protests are being made at various western points regarding the use of private cars, and the suggestion is made that regulations restricting their use for strictly official purposes only be put in force.

The Grand Trunk Pacific Ry. announces that it has completed arrangements for the issue of through tickets from points on its lines to any point on the Edmonton, Dunvegan & British Columbia Ry., the Central Canada Ry., and the Alberta & Great Waterways Ry.

The Quebec & Saguenay Ry. was opened for traffic from St. Joachim to Baie St. Paul, Aug. 20, one train a day being run in either direction, Tuesdays, Thursdays and Saturdays. This service is being given by the contractors, O'Brien & Doheny, and connection to and from Quebec is made via the Quebec Ry., Light & Power Co.'s line.

The C.P.R. has discontinued the serving of night lunch free to Alaska passengers on local steamships between Vancouver, Victoria and Seattle. The service is, however, continued between Vancouver and Skagway. The night lunch on local vessels, for which a charge of 50c is made, includes meat or fish, while the free night lunch on other vessels is plain.

A new government regulation requires all aliens to produce their certificates of parole, with notice of permission to travel from one point to another when purchasing railway and steamship tickets in Canada. The order as to the registration of enemy aliens also requires all persons, 16 years old and upwards, to be registered. Heretofore only adults were required to be registered.

A Moncton, N.B., press dispatch, Aug. 19, states that it has been decided for

the present to keep the steamer Northumberland on the Summerside-Point du Chene route, and to put off until further notice the resumption of the car ferry service between Cape Tormentine, N.B., and Borden, P.E.I. It had previously been announced that this latter service was to be resumed Aug. 20.

The divisional point at Graham, Ont., on the National Transcontinental Ry., has been renamed Sioux Look Out. This is the name of the village and post office, which existed prior to the building of the railway, when the station was named Graham, after the then Minister of Railways. The station heretofore known as Knowlton, on the line between Superior Jet. and Fort William, has been renamed Graham.

A. H. Brittain, Montreal, in addressing the Canadian Fishermen's Association at Halifax, N.S., Aug. 10, dealt with the equipment necessary for the transportation of fish to inland points. He advocated the building of special express cars, similar to those used on western lines, to be run on passenger trains. The success of the business, he said, depends upon the provision of suitable cars, and their being run on passenger and not freight trains.

### Railway Finance, Meetings, Etc.

The Grand Trunk Ry. is reported to have paid off, on Aug. 1, out of earnings, \$2,000,000 two-year 5% collateral gold notes issued in 1916, and offered by Blair & Co. at 98½ and interest.

Canadian Pacific Ry.—Dividends of 2% for the half year ended June 30, and of 2½% on the common stock, for the quarter ended the same date, being at the rate of 7% per annum from revenue and 3% per annum from special income account, have been declared payable Oct. 1 to shareholders of record Aug. 31.

Timiskaming & Northern Ontario Ry.—Passenger earnings for June, \$54,449.64; freight earnings, \$150,056.74; total earnings, \$204,506.38, against \$56,820.46 passenger earnings; \$120,419.57 freight earnings; \$177,240.03 total earnings for June, 1917.

### Grain Inspection at Western Points.

The following figures, compiled by the Trade and Commerce Department's inspection branch, show the number of cars of grain inspected on railways at Winnipeg and other points in the Western Division, for July, and for 11 months ended July 31, compared with the number for the same period in 1917:—

	July, 1918	11 months to July 31, 1918	11 months to July 31, 1917
C.P.R. ....	1,248	91,328	128,307
C.N.R. ....	829	54,876	71,296
G.N.R., Duluth 4		714	3,511
G.T.P.R. ....	183	23,369	22,697
Totals .....	2,264	170,287	225,811

Two C.P.R. sleeping car conductors were committed for trial at Winnipeg, Aug. 1, charged with carrying passengers in sleeping cars who had not secured passenger tickets, and with not turning in the sleeping car fares collected. It is reported that similar charges have been preferred against sleeping car conductors at Montreal, Vancouver, and other places. The company's allegation is that passengers are handed over from one conductor to another from coast to coast, and that the cash received from such non ticketed passengers is divided between the conductors in the ring.



## Mainly About Railway People Throughout Canada.

G. A. Mountain, M.E.I.C., Chief Engineer, Board of Railway Commissioners, Ottawa, has resumed his duties after a long absence due to illness.

Hon. F. Cochrane, M.P., ex-Minister of Railways and Canals, returned to Ottawa early in August from St. Andrews, N.B., where his family are spending the summer.

P. J. Dooley, who has been appointed dispatcher, Canadian Northern Ry., Dauphin, Man., was, for 8 years, operator, C.P.R., White River, Ont., and dispatcher, C.P.R., Schreiber, Ont.

S. L. Schoonmaker, Chairman of the Board, American Locomotive Co., and also of the Montreal Locomotive Works, shot himself while suffering from melancholia, at his home at Rosebank, N.Y., Aug. 17.

George Ham, of the C.P.R. headquarters staff, was entertained to dinner at Montreal, Aug. 23, by a number of C.P.R. officials, on the occasion of his 71st birthday, when he was presented with an oil painting of himself.

G. J. Harris, formerly Lake and Rail Agent, G.T.R., Chicago, Ill., and who, as announced in our last issue, was assigned to other duties on account of ill health, died at Chicago recently, of myocarditis, aged 62.

C. S. Mellen, formerly President, New York, New Haven & Hartford Rd., is suing for a divorce, on account of alleged desertion by his wife, who has already figured as defendant in another case, and who has entered a counter suit.

H. R. Safford, heretofore Chief Engineer, G.T.R., Montreal, has, according to a press report, been appointed Engineering Assistant to the Regional Director of the Central Western District, U.S. Railroad Administration.

Mrs. R. L. Smith, widow of Mr. Justice Smith, of the Manitoba bench, and mother of R. Home Smith, Toronto, President, Algoma Central & Hudson Bay Ry., died at Niagara on the Lake, Ont., Aug. 26, after a short illness.

Miss Doris Bury, younger daughter of Sir George Bury, Vice President, C.P.R., was married at St. George's Church, Montreal, to Capt. J. S. Allen of Vancouver, B.C., Aug. 26. After the ceremony they left for North Carolina, where they will reside.

D. J. Murphy, Roadmaster, Dominion Atlantic Ry., Kentville, N.S., was seriously injured at Bridgewater, N.S., at the end of July, when the trolley car on which he was riding on the track, was run into at a crossing by an automobile. He was conveyed to his home at Yarmouth.

Jos. H. Edwards, who has been appointed Local Treasurer and Paymaster, G.T.R. Lines in New England, Portland, Me., was born Dec. 1, 1872, and entered G.T.R. service Dec. 1, 1894, since when he has been, to June 1, 1897, clerk; June 1, 1897, to July 1, 1918, agent at various points.

R. E. Marks, whose appointment as passenger Trainmaster, Eastern Lines, G.T.R., Montreal, was announced in our last issue, was born at Brockville, Ont., Aug. 11, 1875, and entered G.T.R. service May 27, 1897, since when he has been, to May 15, 1906, brakeman; May 15, 1906 to July 9, 1918, conductor, all at Montreal.

J. G. Sullivan, M.E.I.C., M.Am.Soc.C.E., who resigned his position as Chief Engineer, Western Lines, C.P.R., recently, has opened a consulting engineer's office at 703 McIntyre Block, Winnipeg, making a

specialty of all kinds of railway work, mining, foundations, tunnelling, elevators, etc.

W. C. Riddell, whose appointment as Advertising Agent, Grand Trunk Pacific Ry., Winnipeg, was announced in our last issue, was presented with a leather travelling bag by his associates at Montreal, prior to leaving there at the end of July, after having been chief clerk, General Advertising Agent, G.T.R., for 16 years.

Harry P. Sweetser, who has been appointed General Solicitor, G.T.R. Lines in New England, Portland, Me., under the U.S. Railroad Administration, was born July 20, 1873, and entered G.T.R. legal department in Oct., 1898, and for about 8 years acted as Assistant Solicitor, and from Jan. 1, 1917, as Solicitor, G.T.R., Portland, Me.

Alfred Edward Plant, who has been appointed General Auditor and Freight Claims Agent, G.T.R. Lines in New England, Portland, Me., was born Apr. 8, 1878, and entered G.T.R. service Jan. 1, 1908, since when he has been, to July 1, 1912, clerk; July 1, 1912, to Aug. 1, 1914, bookkeeper; Aug. 1, 1914, to July 1, 1918, chief clerk, all at Montreal.

Michael Corcoran, who has been appointed Supervisor of Track, west of Shelburne, N.H., G.T.R. Lines in New England, was born at Valcartier, Que., Sept. 4, 1863, and entered G.T.R. service May 10, 1888, since when he has been, to June, 1891, trackman, North Stratford, Ont.; June, 1891, to Feb. 8, 1911, track foreman, North Stratford, Ont.; Feb. 8, 1911, to July 1, 1918, Supervisor of Track, Gorham, N.H.

James M. Gibson, who has been appointed Supervisor of Track, east of Shelburne, N.H., G.T.R. Lines in New England, was born June 17, 1856, and entered G.T.R. service May 1, 1872, as apprentice in the engineering department. He was appointed first assistant foreman, in 1886, Foreman, Bridge and Building Department, Portland, Me., in 1896, General Foreman, District 1, in Jan., 1902, holding the last position at the time of his present appointment.

Gardner Ludwig Nelson, who has been appointed Traffic Manager, G.T.R. Lines in New England, Portland, Me., under the U.S. Railroad Administration, was born June 28, 1862, and entered G.T.R. service Nov. 23, 1879, since when he has been, to Mar. 15, 1893, clerk in Transportation Department, Portland, Me.; Mar. 15, 1893, to Jan. 1, 1903, agent, National Despatch-Great Eastern Line, Portland, Me.; Oct. 1, 1905, to July 1, 1918, Division Freight Agent, G.T.R., Portland, Me.

James W. Farrell, who has been appointed Superintendent, G.T.R. Lines in New England, Portland, Me., was born Aug. 1, 1863, and entered G.T.R. service Aug. 1, 1881, since when he has been, to May 1, 1883, telegraph operator; May 1, 1883, to May 24, 1898, dispatcher, Island Pond, Vt.; May 24 to Nov. 1, 1898, instructor of standard rules at various points; Nov. 1, 1898, to Oct. 1, 1907, Chief Dispatcher, Island Pond, Vt.; Oct. 1, 1907, to July 1, 1918, Trainmaster, Island Pond, Vt.

William Morley Cooper, who has been appointed Trainmaster and Road Foreman of Locomotives, G.T.R. Lines in New England, Portland, Me., under the U.S. Railroad Administration, was born July 25, 1875, and entered G.T.R. service July 8, 1894, since when he has been, to Aug.

10, 1895, road house foreman; Aug. 10, 1895, to Sept. 12, 1898, locomotive fireman; Sept. 12, 1898, to Nov. 1, 1904, locomotive man; Nov. 1, 1904, to July 1, 1918, Road Foreman of Locomotives at various points.

Joseph Hay, who has been appointed Master Mechanic, G.T.R. Lines in New England, Portland, Me., under the U.S. Railroad Administration, was born July 4, 1876, and entered G.T.R. service Feb. 24, 1893, since when he has been, to May 1, 1893, call boy, Belleville, Ont.; May 1, 1893, to Nov. 19, 1898, apprentice; Nov. 19, 1898, to Aug. 1, 1900, fitter; Aug. 1, 1900, to Apr. 1, 1907, foreman, Palmerston, Ont.; Apr. 1, 1907, to Feb. 1, 1911, foreman, London, Ont.; Feb. 1, 1911, to July 1, 1918, foreman Sarnia, Ont.

Maynard W. Stevens, who has been appointed Purchasing Agent and Storekeeper, G.T.R. Lines in New England, Portland, Me., was born July 8, 1888, and entered G.T.R. service Sept. 1, 1906, since when he has been, to Feb. 1, 1910, bonding clerk, Island Pond, Vt.; Feb. 1, 1910, to Sept., 1914, chief clerk, Water Power Department, Island Pond, Vt.; Sept., 1914, to Feb., 1915, in charge of stores; Feb., 1915, to Aug. 1, 1917, in charge of general inventory work on the road; Aug. 1, 1917, to July 1, 1918, storekeeper, Portland, Me.

John Martin Gilmour, whose appointment as Yardmaster, Edmonton and Stratheona Terminals, C.P.R., Edmonton, Alta., was announced in our last issue, was born at Ottawa, Ont., Aug. 21, 1885, and entered C.P.R. service in 1902, since when he has been, to 1906, stenographer, consecutively, at Ottawa, Ont.; Regina, Sask.; Fort William, Ont.; Winnipeg, Man.; and Calgary, Alta.; 1906 to June, 1910, rodman and clerk, Engineering Department, Calgary, Alta.; June, 1910, to Jan., 1912, assistant chief clerk, Superintendent's office at Calgary, Lethbridge and Edmonton, Alta., consecutively.

E. E. Dildine, who has been appointed Superintendent of Telegraph, Northern Pacific Ry., St. Paul, Minn., was born at Hawtrey, Ont., Sept. 1, 1866, and entered railway service Sept. 15, 1883, since when he has been, to 1884, with the Flint & Pere Marquette Rd., now the Pere Marquette Ry.; 1884 to 1886, with Canada Southern Ry., part of the Michigan Central Rd.; from 1886 to date, his service has been with the Northern Pacific Ry., except for a period in 1892, which he served with the C.P.R. Telegraphs at Toronto, and the Western Union Telegraph Co., Chicago, Ill.

L. R. Pyle, Fuel Supervisor, Minneapolis, St. Paul & Sault Ste. Marie Ry., Minneapolis, Minn., has been appointed Supervisor of the fuel conservation section of the Central Western Region, under the U.S. Railroad Administration, with office at Chicago, Ill., and gives special attention to the conservation of fuel used on locomotives, in shops, at terminals, at water stations and for all miscellaneous purposes, and to the preparation of fuel received, and to its quality, and will make investigations and recommendations in regard to its transportation and handling at fuel stations.

Chas. H. Tillet, whose appointment as Electrical Engineer, G.T.R., Montreal, was announced in our last issue, was born at Peru, Ind., Dec. 8, 1884, and entered railway service in Aug., 1907, since when he has been, to Nov., 1907, signal repair man, Pennsylvania Rd., Fort Wayne, Ind.; Apr., 1908, to Feb., 1910, signal re-



pair man, Great Northern Ry., Seattle, Wash.; Feb., 1910, to July, 1913, Signal Inspector, Chicago & Eastern Illinois Rd., Chicago, Ill.; July to Oct., 1913, Signal Inspector, G.T.R., Montreal; Oct., 1913, to July, 1918, Supervisor of Signals, G.T.R., Montreal.

Edgar E. Stevens, who has been appointed Safety Engineer, Eastern Lines, Canadian Government Railways, Moncton, N.B., was born there Oct. 19, 1887, and entered Canadian Government Railways service, Sept. 17, 1903, since when he has been, to Feb. 1, 1917, in various positions from messenger to chief loss and damage claim investigator in the Freight Claims Department; Feb. 1 to May 24, 1917, chief clerk to General Solicitor; May 24 to July 10, 1917, Travelling Freight Claim Adjustor, Freight Claims Department; July 10, 1917, to Aug. 1, 1918, Claims Agent, all at Moncton.

James J. Ginty, whose appointment as Supervisor of Signals, Eastern Lines, G.T.R., Montreal, was announced in our last issue, was born at Lockport, N.Y., Nov. 3, 1884, and entered transportation service in 1906, since when he has been, to 1907, construction hand, Western Lines, New York Central Rd.; 1907 to 1908, assistant construction foreman, General Railway Signal Co., Rochester, N.Y.; 1908 to 1913, general construction foreman, Union Switch & Signal Co., New York, N.Y.; 1913 to 1916, General Signal Foreman, G.T.R., Montreal; 1916 to July, 1918, Chief Signal Inspector, G.T.R., Montreal.

W. Sutherland Taylor, formerly Treasurer, C.P.R., died at his home at Montreal, Aug. 22, after a short illness. He was born at Dornoch, Scotland, Oct. 18, 1839, and entered railway service in Canada as Secretary, during construction, of the Toronto, Grey & Bruce Ry., now part of the C.P.R., and was from 1873 to Jan. 1, 1884, Secretary and Treasurer, Toronto, Grey & Bruce Ry.; and from Jan. 1, 1884, to June, 1908, Treasurer, C.P.R., Montreal, at which latter date, he retired from active service. The funeral at Montreal, Aug. 24, was attended by a large number of C.P.R. and other transportation officials.

Rowland F. Hill, who has been appointed Assistant General Freight and Passenger Agent, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., was born there, Dec. 14, 1889, and entered T.H. & B.R. service in July, 1906, since when he has been, to Sept., 1906, stenographer in Master Mechanic's office; Sept., 1906, to Sept., 1909, stenographer in General Freight and Passenger Agent's office; Sept., 1909, to Nov., 1911, Soliciting Freight Agent; Nov., 1911, to May, 1915, rate clerk; May to Sept., 1915, chief clerk, General Traffic Manager's office; Sept., 1915, to Aug. 9, 1918, Assistant General Freight and Passenger Agent, all at Hamilton, Ont.

George L. Courtney, who has been appointed General Manager, Pacific Great Eastern Ry., Vancouver, B.C., was born at Chatham, Ont., Oct. 7, 1868, and entered railway service in 1885, since when he has been, to Aug., 1890, clerk, G.T.R.; Aug., 1890, to Aug., 1898, with C.P.R. consecutively as clerk, travelling passenger agent, contracting freight agent and agent at Victoria, B.C.; Aug., 1898, to 1908, Traffic Manager, Esquimalt & Nanaimo Ry., and during the latter portion of that period, General Agent, C.P.R., Victoria, B.C. He resigned from the service in 1908, and was subsequently engaged in the tugboat business as a partner in the firm of Greer, Courtney & Skene, Ltd., Victoria, B.C.

Chester Barrett Weiss, who has been appointed Assistant Engineer, G.T.R.

Lines in New England, Portland, Me., under the U.S. Railroad Administration, was born Dec. 27, 1889, and entered railway service in 1909, since when he has been, to 1910, on reconnaissance surveys, Louisville & Nashville Rd.; 1910 to 1911, tunnel inspector, Lexington & Eastern Rd.; 1911 to 1912, Masonry Inspector, Tuscaloosa Mineral Rd.; 1912, in private business as masonry engineer, Detroit, Mich.; Sept. 15, 1912, to Feb. 1, 1916, Grade Separation Engineer, G.T.R., Detroit, Mich.; Feb. 1, 1916, to July 1, 1918, Assistant Engineer, Montreal Division and Montreal Terminals, G.T.R., Montreal.

W. W. Walker, Federal Manager, Duluth, South Shore & Atlantic Ry., Duluth, Minn., who died recently following an operation, was born at St. Catharines, Ont., June 3, 1868, and entered railway service in 1883, as office boy with the G.T.R. In 1884 he entered the Queen and Crescent Route service, as clerk in



Morley Donaldson, M.E.I.C.  
Formerly Vice President and General Manager,  
Grand Trunk Pacific Railway, who died at  
Ottawa Aug. 27, 1918.

the traffic department, and in 1887 transferred to Chicago & North Western Ry. service in the claims department, and from Oct., 1833, to Feb., 1890, was rate clerk and chief clerk in the Great Northern Ry. general freight department, and in 1890 was appointed Travelling Freight Agent, Duluth, South Shore & Atlantic Ry.; 1897, Assistant General Freight Agent; July, 1901, General Freight Agent; Dec. 1, 1911, to the passing of the railway under the U.S. Railroad Administration, Vice President and General Manager.

W. B. Lanigan, who has been appointed Freight Traffic Manager, C.P.R., Montreal, was born at Three Rivers, Que., Oct. 12, 1861, and entered railway service in 1879, on the North Shore Rd., between Montreal and Quebec. He took service with the G.T.R. in Jan., 1881, remaining there until he went to the C.P.R. in Aug., 1884, since when he has been, to Oct., 1886, operator and relieving agent, Sharbot Lake, Ont.; Oct., 1886, agent, Claremont, Ont.; Nov., 1886, to April, 1887, agent, Myrtle, Ont.; April, 1887, to July, 1888, agent, Dundalk, Ont.; July, 1888, to

July, 1891, agent, Galt, Ont.; July, 1891, to April, 1900, Travelling Freight Agent, Ontario Division; April, 1900, to July, 1901, Assistant General Freight Agent, Ontario Division; July, 1901, to Feb., 1908, General Freight Agent, Western Division, Winnipeg; Feb., 1908, to Aug., 1918, Assistant Freight Traffic Manager, Western Lines, Winnipeg.

Morley Donaldson, M.E.I.C., who died at his home in Ottawa, Ont., Aug. 27, resigned the position of Vice President and General Manager, Grand Trunk Pacific Ry., Winnipeg, in Aug., 1917, on account of ill health. He was born near Edinburgh, Scotland, May 1, 1851, and was educated in France and Canada. After spending some time in E. Gilbert & Co.'s engine works at Montreal, he entered W. & F. Shanly's service, and was with them during the construction of the Hoosac tunnel in Massachusetts. He entered railway service in 1881, as chief draftsman, Canada Atlantic Ry., and subsequently was Superintendent, Mechanical Department; Superintendent of Traffic and Mechanical Department, and to Apr. 11, 1898, Superintendent, same road, Ottawa, and on the absorption of the Canada Atlantic Ry. by the G.T.R., and its operation as the Ottawa Division, he was appointed Superintendent, retaining that position until June 17, 1912, when he was appointed Vice President and General Manager, Grand Trunk Pacific Ry., and Grand Trunk Pacific Coast Steamship Co., Winnipeg.

James B. Lambkin, who died at the Royal Victoria Hospital, Montreal, Aug. 1, from diabetes and tuberculosis, was connected with transportation service for many years. He was born at Quebec, Que., Apr. 5, 1858, in barracks, his father being a sergeant-major, attached to the 17th Leicestershire Regiment, then stationed there. As a boy he entered the Ottawa River Navigation Co.'s service as a messenger, and later entered Pullman Co.'s employ. From 1881 to 1898, he was in C.P.R. service, and in 1898 was appointed District Passenger Agent, Intercolonial Ry., Montreal, and was subsequently appointed Assistant General Passenger Agent, I.R.C., Halifax, N.S., remaining there until 1912, when he left railway service. Though young, he served as a trumpeter with the Ottawa Field Battery during the Fenian raids in 1870, and was for several years connected with the Princess Louise Dragoons at Ottawa, and acted as state herald to H.R.H. Princess Louise, wife of the then Governor General. During the present war he served as conducting officer for the Invalid Soldiers' Commission, with the rank of captain.

G. M. Bosworth, who has retired from the position of Vice President, Traffic Department, C.P.R., and will devote his whole time to his duties as Chairman, Canadian Pacific Ocean Services, Ltd., both of which positions he has held since the organization of the latter company, was born at Ogdensburg, N.Y., Jan. 27, 1858, and entered transportation service May 1, 1875, since when he has been, to Feb. 21, 1881, office boy, clerk in Local Freight Department, in Audit Department, and in General Freight Department, Ogdensburg & Lake Champlain Ry., Ogdensburg, N.Y.; Feb. 21 to Aug. 1, 1881, General Freight Agent, same road; Aug. 1, 1881, to May 1, 1882, Travelling Freight Agent, National Despatch Line, Chicago, Ill.; May 1, 1882, to Jan. 1, 1884, Assistant General Freight Agent, Ontario and Quebec Lines, C.P.R.; Apr. 15, 1885, to Jan. 1, 1896, Assistant Freight Traffic Manager, lines east of Fort William, C.P.R.; Jan. 1, 1896, to Dec. 1, 1901,



Freight Traffic Manager, C.P.R.; Dec. 1, 1901, to Aug. 15, 1918, Vice President, Traffic Department, and from Jan. 1, 1916, also Chairman, Canadian Pacific Ocean Services, Ltd., Montreal.

**Earl Washington Williams**, who has been appointed chief clerk and Superintendent Car and Time Service, G.T.R. Lines in New England, Portland, Me., was born Aug. 8, 1879, and entered railway service May 1, 1898, since when he has been, to Mar. 2, 1899, clerk, Baltimore & Ohio Rd., Cumberland, Md.; Mar. 2, 1899, to Nov. 11, 1900, clerk to Trainmaster, same road, Cumberland, Md.; Nov. 11, 1900, to Nov. 29, 1903, clerk to Superintendent same road, Grafton, West Virginia; Nov. 29, 1903, to Apr. 1, 1909, chief clerk to General Yardmaster, same road, Grafton, W.V.; Apr. 1 to Nov. 21, 1909, extra Yardmaster, same road, Grafton, W.V.; Nov. 21, 1909, to July 6, 1911, chief clerk to Trainmaster, Missouri Pacific Rd., Wichita, Kan.; July 8 to 14, 1911, assistant chief clerk to General Superintendent, same road, St. Louis, Mo.; July 20 to Nov. 7, 1911, chief clerk to Trainmaster, G.T.R., London, Ont.; Nov. 7, 1911, to Feb. 8, 1912, assistant chief clerk to General Superintendent, same road, Toronto; Feb. 8, 1912, to Feb. 7, 1918, chief clerk to Superintendent, same road, London, Ont.; Feb. 7 to July 1, 1918, Travelling Inspector, Western Lines, same road, Chicago, Ill.

**G. C. Martin**, who has been appointed General Traffic Manager, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., was born at Creemore, Ont., Jan. 2, 1866, and commenced his railway career as assistant to agents, Northern and North Western Ry., at Creemore, New Lowell and Thornbury, Ont. He was engaged as an operator on construction, C.P.R., near Calgary, Alta., and at Hawk Lake, Ont., in 1883, and was appointed agent and operator, Northern and North Western Ry., Colwell Jct., Ont., in 1884, was moved to Caledon East, Ont., in 1886, to Cardwell Jct., Ont., in 1888, and to the city ticket office, London, Ont., in 1889. He entered C.P.R. service in 1891 as relieving agent, and after doing station work, station auditing, dispatching, etc., for several years, he left railway service for one year, returning to the service as clerk in the G.T.R. ticket office, union station, Toronto and in 1897 entered Toronto, Hamilton & Buffalo Ry. service, since when he has been, to Oct., 1909, chief clerk, General Freight and Passenger Agent's office; Oct., 1909, to July 22, 1912, Assistant General Freight and Passenger Agent; July 22, 1912, to Aug. 9, 1918, General Freight and Passenger Agent, all at Hamilton, Ont.

**Wm. R. MacInnes**, who has been appointed Vice President, Traffic Department, C.P.R., Montreal, was born at Hamilton, Ont., June 7, 1867, and educated at Marlboro College, England. He is a son of the late Senator MacInnes, a former director of the C.P.R., and a grandson of the late Sir John Beverley Robinson, Bart. He entered C.P.R. service July, 1884, since when he has been, to Nov., 1885, clerk in Purchasing Department; Nov., 1885, to Sept., 1886, clerk in Solicitor's office; Sept., 1886, to May, 1887, clerk in General Traffic Manager's office; May, 1887, to Mar., 1896, chief clerk, same office, all at Montreal; Mar., 1896, to June, 1899, General Agent, Freight Department, C.P.R., and Agent, Canadian Pacific Despatch, Chicago, Ill.; also representative of Duluth, South Shore & Atlantic Ry. and Minneapolis, St. Paul & Sault Ste. Marie Ry. there; July, 1899, to June, 1901, General Freight Agent, Lines west of Lake Superior; June, 1901, to

Jan., 1903, Assistant Freight Traffic Manager, Western Lines, Winnipeg; Jan., 1903, to Aug. 15, 1918, Freight Traffic Manager, Montreal. He is a member of the Bank of British North America's Canadian advisory board.

**C. W. Van Buren**, General Master Car Builder, C.P.R., Montreal, was killed in an automobile accident near Albany, N.Y., Aug. 24. The car in which he was travelling swerved over an embankment and fell about 15 ft., in front of an eastbound New York Central express train. He was born in Rensselaer county, N.Y., Oct. 15, 1867, and entered railway service in Mar., 1889, since when he was, to Nov., 1891, carpenter, New York Central Shops, West Albany, N.Y.; Nov., 1891, to Sept. 1, 1893, assistant foreman; Sept. 1, 1893, to Sept. 1, 1896, in charge of Car Department work, Adirondack Division, same road, Herkimer, N.Y.; Sept. 1, 1896, to July 16, 1905, Car Foreman, Adirondack Division, and Mohawk Division, New York Central and West Shore Rds.; July 16, 1905, to July 1, 1906, General Car Inspector, Eastern Lines, C.P.R., Montreal; July 1, 1906, to July 1, 1909, Divisional Car Foreman, Eastern Division, C.P.R., Montreal; July 1, 1909, to May 31, 1911, Master Car Builder, Eastern Lines, C.P.R., Montreal; July 1, 1911, to Jan. 1, 1915, Assistant to General Manager, Union Stock Yard and Transit Co., Chicago, Ill.; Jan. 1 to April 1915, General Foreman, Car Shops, Milwaukee Refrigerator Transit & Car Co., Milwaukee, Wis.; and from Apr., 1915, General Master Car Builder, C.P.R., Montreal.

### Canadian Railway War Board's Work.

**Aisle Strips in Passenger Cars.**—In the interest of sanitation and economy in materials, a majority of member lines having voted in favor of a proposal to discontinue the use of aisle strips, either carpet or linoleum, in day passenger cars on all railways operating in Canada, commencing not later than Oct. 1, all railways have been asked to place this arrangement in effect on their lines, if it does not already govern.

**Anthracite Coal Consumption.**—In view of the increasing difficulty in obtaining necessary supplies of anthracite coal, and the possibility of further reduction in the allotment to Canada during this year, railways have been called upon to effect a heavy reduction in their requirements. In order to permit of accomplishment of the necessary reduction, therefore, it has been arranged that the railways will discontinue the use of anthracite coal, except to the extent required for consumption in heaters in passenger equipment. In all other circumstances where hard coal has been used in previous seasons, it is necessary to arrange for the burning of coke or other suitable substitute.

The Fuel Administration has stated that for every ton of hard coal which was used in Canada last year, in excess of the amount allotted for the coming season, 1½ tons of bituminous coal will be allowed.

**J. E. Quick**, who retired recently from the position of General Baggage Agent, G.T.R., in writing to have his address changed from Toronto to R.F.D. 2, Port Huron, Mich., said: "I have been a constant subscriber since Canadian Railway and Marine World was started and have found it very interesting, and undoubtedly will continue to do so now that I have retired from active service."

### Canadian Government Railways, Construction, Betterments, Etc.

**Prince Edward Island Ry.**—C. A. Hayes, General Manager, Eastern Lines, Canadian Government Railways, made a trip of inspection over this railway Aug. 16. A press report states that he informed the Charlottetown Board of Trade that there was a possibility of a third rail being laid between Borden and Summerside and Charlottetown at an early date to enable standard gauge cars to be operated between these points. A large quantity of standard gauge ties have been delivered, and it is reported that special switches to suit both narrow and standard gauges are being manufactured. (June, pg. 241.)

**Sydney Yard Extension.**—A press report of Aug. 9, stated that in preparation for extending the yards at Sydney, N.S., an area of 1,000 x 400 ft. near Ferry St. was being filled in, and that four steam shovels were at work on a nearby hill getting out material.

**Halifax Ocean Terminals.**—According to a press report of Aug. 17, it is expected to have the temporary station at the new ocean terminals ready for occupation early in October. The new structure is of frame and faces Pleasant St., and is 180 ft. long by 80 ft. wide, and 30 ft. high. The waiting rooms are on the north side, the general waiting room being 100 x 40 ft. Adjoining this is an L section, 240 x 150 ft. wide, on the ground floor of which are the baggage room offices, 3 express rooms, milk store and commissariat store, while upstairs are the conductors' rooms, the commissariat and other offices. Along the east side of this building are doors for loading and unloading produce, etc. The platform is sheltered by an overhang of the roof. The train sheds are permanent structures of reinforced concrete and extend back to the waterfront. The contract for the train sheds was let to the Bate, McMahon Co., and that for the station building to Morrison & Downey.

**Yard Improvements at Moncton.**—A press report states that a number of improvements have been made at the yards at Moncton, N.B. (See Intercolonial Ry., Aug., pg. 337.)

**C.P.R. Irrigation Developments.**—Tenders are under consideration by the C.P.R. Natural Resources Department for the Magrath, Alta., diversion works, comprising the construction of a spillway, sluice gates and headgates in the N.W. ¼ of Sec. 23, Tp. 5, R. 22, West of 4th Meridian, approximately 1½ miles directly south of Magrath station, in the Lethbridge irrigation system. The structure will contain approximately 1,600 cubic yards of concrete and 97,000 lb. of reinforcing steel. A. S. Dawson, Calgary, Alta., is Chief Engineer.

**Railway Lands Patented.**—Letters patent were issued during July in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

Alberta & Great Waterways Ry.....	6.00
Calgary & Edmonton Ry.....	9,564.00
Central Canada Ry.....	203.28
Canadian Northern Ry.....	640.18
Canadian Pacific Ry.....	16.82
Grand Trunk Pacific Ry.....	12.24
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.....	5,785.17
Total .....	16,227.69

By arrangements made by the Alberta Government, farm laborers were enabled to travel anywhere within that province during August at 1 a mile, going to and from farm work.



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TORONTO, CANADA, SEPTEMBER, 1918.

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## Signals for Railway Grade Cross- ings.

The Board of Railway Commissioners passed general order 247, Aug. 6, as follows:—By circular 156, dated Jan. 15th, 1918, railway companies were directed to consider the adoption of a metal disc to be used as a standard at railway grade crossings protected by watchmen, and to file their comments with the board within 30 days therefrom.

Upon reading the replies filed by the companies affected, and upon the recommendation of the board's Chief Operating Officer, it is ordered that railway companies be directed to adopt and put into use at all grade crossing protected by watchmen during the daytime, a metal disc, 16 in. in diameter, with a short handle having a white background, with the word "Stop" in large black letters and a black border. That rule 33 of General Train and Interlocking Rules, which provides that "watchmen stationed at public crossings must use a green signal to prevent persons and vehicles from crossing the track when trains are approaching," be amended to conform with the standard hereby directed to be adopted.

## Wedge Tanks for Switching and Transfer Locomotives Refused.

D'Arcy Scott, Assistant Chief Commissioner, Board of Railway Commissioners, gave the following judgment July 31 re the application of the Brotherhood of Locomotive Engineers, for an order directing that all switch and transfer locomotives be equipped with wedge tanks, low enough for locomotive men to see over, and with a headlight on the rear; the case having been heard at Ottawa, May 7:

A number of railway companies have switching locomotives equipped with a sloping tender so that the locomotive man when backing the locomotive can see a man whose duty it would be to couple the locomotive to a car. This would, doubtless, lead to the prevention of an accident where the tender is being coupled to a car, but in many cases of shunting, the car which is being attached or separated from the train, is not next the locomotive, but some distance away from it. In such a case, where there is a box car between the man on the ground and the locomotive man, the box car obstructs the view and the sloping tender is of no avail. Some railway officials object to sloping tenders, because the capacity of the tender for carrying coal and water must be curtailed.

The board's operating department reports that in so far as equipping the rear of tenders with headlights is concerned, that as a matter of fact nearly all the switchers now in use are so equipped. A headlight on the rear end of a tender would, of course, be obstructed by a box car attached to the tender, as the view of the locomotive man would be obstructed by a box car as I have already mentioned.

It is apparent that the changes asked for would have some advantages and some disadvantages, but it does not appear to me that the sloping tender, or the rear headlight, would be sufficiently important in the lessening of the occurrence of accidents to warrant the board in putting the railway companies to the expense of equipping their shunting and switching locomotives accordingly. The present time is quite inopportune, when

the resources of railway companies are being taxed to the utmost by war necessities, and material and labor are so difficult and expensive to obtain, to place any such burden upon railway companies.

As I have already pointed out, some of the railway companies have already many shunting locomotives equipped in the way the applicants desire. The companies are, of course, free to continue arranging for such equipment if they so desire. I do not think the board should order them to do so. The application should be dismissed.

Deputy Chief Commissioner Nantel and Commissioner Boyce concurred in the judgment. Commissioner McLean said:—"Independently of the question of expense, a case for the order asked for has not been made out."

## Canadian Northern Railway Con- struction, Betterments, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
Dec.	3,273,200	3,207,900	65,300	758,500
Jan.	2,715,300	3,290,300	x575,000	1,057,100
Feb.	2,691,000	3,171,400	x480,400	588,600
Mar.	3,436,300	3,225,900	210,400	407,700
Apr.	3,958,100	3,416,800	541,300	216,600
May	3,762,000	3,381,100	380,900	673,500
June	4,031,100	3,516,900	514,200	573,400
	\$42,450,600	\$38,524,100	\$3,926,500	\$6,477,900
Inc.	.....	\$ 5,272,000	.....	.....
Dec.	\$ 1,205,900	.....	\$6,477,900	.....

Approximate earnings for July, \$3,739,400, and for three weeks ended Aug. 21, \$2,591,600, against \$3,844,900, and \$2,270,000 for same periods in 1917.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, compared with those of 1917, from Jan. 1, 1918:

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	\$10,789,818	\$9,621,824	\$1,167,993	\$1,263,485
Feb.	9,574,302	8,983,404	590,898	1,396,151
Mar.	12,427,915	9,435,134	2,992,781	944,536
Apr.	13,328,849	9,873,459	3,455,390	719,588
May	13,314,117	9,626,341	3,687,776	863,944
June	12,577,286	9,765,139	2,812,147	1,103,759
	\$72,012,289	\$57,305,302	\$14,706,985	\$6,290,464
Inc.	\$ 655,510	\$ 6,945,974	.....	.....
Dec.	.....	.....	\$ 6,290,464	.....

Approximate earnings for July, \$11,920,000, and for three weeks ended Aug. 21, \$8,583,000, against \$12,925,000, and \$8,005,000 for same periods in 1917.

## Grand Trunk Railway Earnings.

Aggregate from Jan. 1 to July 31:—

	1918	1917	Increase	Decrease
G.T.R.	\$31,951,008	\$29,042,498	\$2,908,510	.....
G.T.W.R.	5,934,536	5,545,031	389,505	.....
D.G.H. & M.R.	1,748,861	1,940,817	.....	\$191,956
Totals	\$39,640,405	\$36,528,346	\$3,106,059	.....

## Grand Trunk Pacific Ry. Earnings.

Aggregate earnings from Jan. 1 to June 30, \$2,861,179, against \$2,509,457 for same period in 1917. Earnings for three weeks ended Aug. 21, \$304,969, against \$338,139 for same period 1917.

E. E. Stevens, Safety Engineer, Canadian Government Railways, Moncton, N. B., writes: "I have always found Canadian Railway and Marine World to be of great interest and value."



## Traffic Orders by Board of Railway Commissioners.

### Increases in Electric Railway Freight and Passenger Rates.

Orders passed by the board, authorizing increases in freight and passenger rates on certain electric railways, are given in the electric railway department of this issue on page 397.

### Wood Pulp Rates for Bromptonville.

The Assistant Chief Railways Commissioner, D'Arcy Scott, gave the following judgment, Aug. 2, on the Fort Frances Pulp & Paper Company's application for an order compelling the Grand Trunk and Canadian Northern Railways to re-establish joint commodity rates on wood pulp from Bromptonville, Que., to Fort Frances, Ont.:

The applicant has large pulp and paper mills at Fort Frances. It manufactures its own ground wood, one of the ingredients in newsprint, but owing to the increased demand for newsprint for newspapers published in Western Canada and to a lessening in its supply of pulpwood, on account of low water in Rainy River, the company was compelled to buy wood pulp from some eastern mills. Effective Dec. 19, 1917, a special joint commodity rate from Bromptonville to Fort Frances of 22c per 100 lb., was arranged between the railways interested. (See G.T.R. Tariff, Supplement 7 to C.R.C. no. E-3483.) This rate was taken out on May 8, and there being no special rate available, the wood pulp moved under the 10th class of 49c.

The distance from Bromptonville to Fort Frances is 1,393 miles. At the hearing the Canadian Northern Ry. undertook to endeavor to secure the establishment of a 28c rate, which would give the railways a gross revenue of four-tenths of a cent a ton a mile from Bromptonville to Fort Frances. After allowing this matter to remain in abeyance, with the expectation that some agreement would be arrived at, we have now been advised that the 28c rate is not agreeable to the G.T.R., but that that company would be agreeable to the establishment of a joint rate of 35c per 100 lb.; that is, the company wants an increase of 25% on the 28c rate suggested. In view of the general increase in freight rates granted by the Governor in council, by order dated July 27, which would, of course, automatically have increased the 28c rate had it been made effective, it seems to me to be not unreasonable to increase this rate in accordance with the order in council. Wet wood pulp is 10th class freight, and the present 10th class rate from Bromptonville to Fort Frances is 49c. Taking the east and west factors of this rate and applying the increase of the order in council in the same ratio to the 28c rate, the result would give a through commodity rate of 33½c, which rate should be established and made effective not later than Aug. 15.

### Minimum Carload Weight of Flour.

General order 245. Aug. 8. Re complaints of Dominion Millers' Association and Toronto Board of Trade against increased carload minimum weights on grain and grain products for domestic consumption, published by railway companies to take effect April 2, 1917; and re application of Canadian Railway War Board for permission to increase minimum carload weight of flour as fixed by general order 186, April 4, 1917: Upon the consent of the Dominion Millers' Association and the Toronto and Montreal Boards of Trade, on file with the board, it is ordered that clause 4 of general order

186 be amended so as to provide that, until further order, the minimum carload weight of flour shall be 50,000 lb. when loaded in cars of the capacity of 60,000 or 70,000 lb.

### Eastbound Transcontinental Freight Rates.

General order 246. Aug. 12. Re eastbound transcontinental freight rates, and the powers conferred upon the board under sec. 323 of the Railway Act; and re application of W. C. Campbell, Secretary, Canadian Freight Association, Winnipeg, on behalf of railway companies engaged in transcontinental transportation from Pacific coast terminals in British Columbia to eastern Canada, for permission to increase their so called commodity rates on not less than 5 days notice. Whereas the eastbound transcontinental freight rates on specific commodities from points in British Columbia, recognized as Pacific coast terminals, to destinations in eastern Canada, have been in the past and are now lower than the regular scale of rates under the Canadian Freight Classification, and are related to the rates on like commodities when shipped from the corresponding terminals in the contiguous State of Washington to eastern destinations; and whereas by order of the Director General of the U.S. Railroad Administration, U.S. carriers increased their freight rates, including their said transcontinental rates, from June 25, 1918, by 25%, subject to certain modifications with respect to specific commodities, and because of the competitive character of the traffic it is expedient to continue at least the said relationship—it is ordered that the railway companies in Canada engaged in eastbound transcontinental traffic be permitted to increase their present commodity rates from the said Pacific coast terminals in British Columbia to destinations in eastern Canada, subject, however, as a maximum, to the lowest rates now in effect from the corresponding terminals in the State of Washington on like commodities to corresponding eastern destinations, and that the rates so increased be permitted to become effective not earlier than Sept. 9, 1918, upon not less than 5 days notice to the board and to the shipping public, by filing and posting in the manner prescribed in the Railway Act.

### Commutation Tickets, Montreal to Points in Soulanges County, Que.

27488. Re application of G. Boyer, M.P., the municipal councils of Cedars, Coteau du Lac, Coteau Station, and St. Zotique parishes, and the villages of Coteau du Lac and Coteau Landing, for an order directing the G.T.R. to sell commutation tickets between Montreal and stations in Soulanges County, Que.: Upon hearing the application at Ottawa, July 9, Mr. Boyer appearing for himself and on behalf of the municipal councils named; no discrimination in violation of the provisions of the Railway Act being established, the board is without jurisdiction to make the order applied for. It is therefore ordered that the application be dismissed.

### Supplement to Canadian Freight Classification.

27509. July 31. Re application of Canadian Freight Association, on behalf of railway companies, under sec. 321 of the Railway Act, for approval of proposed Supplement 11 to Canadian Freight Classification 16, containing certain increased, reduced, and additional ratings. Notice having been

given in The Canada Gazette by the railway companies, as required by sec. 321 of the Railway Act, and the proposed changes having been fixed by consent of the parties or by orders of the board, or reserved for order of the board; upon the consideration of what has been filed, and upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the proposed supplement, as finally revised and submitted for approval by the Chairman of the Canadian Freight Association, by letter dated June 4, be approved.

### Rates on Bonnets and Hats.

27512. Re complaint of Canadian Corrugated & Fibreboard Container Association, Toronto, against proposed increase in ratings published in Supplement 11 to Canadian Freight Classification 16, on bonnets and hats, trimmed and untrimmed, when shipped in fibreboard, pulpboard, or corrugated strawboard containers: Upon hearing the complaint at Toronto, June 24, the complainants, the Canadian Freight Association, the Toronto Board of Trade, and the Canadian Manufacturers Association being represented, and upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the complaint be dismissed.

### Spur Carload Freight.

27535. Aug. 2. Re application of Canyon City Lumber Co., of Creston, B.C., for an order disallowing charge of \$3 a car made by C.P.R. for handling on the applicant company's spur, carload freight other than that consigned to or shipped by the applicant company: Upon hearing the application at Calgary, June 10, in the presence of counsel for the applicant company and the railway company, and what was alleged, and upon reading the further submissions filed, it is ordered that the application be dismissed.

### Fruit and Vegetable Routing from Similkameen District.

27536. Aug. 2. Re application of Similkameen Farmers' Institute, of Keremeos, for better connections and joint freight rates on fruit and vegetables over the Great Northern and Canadian Pacific Railways, in the Similkameen District, to points in Alberta and Saskatchewan: Upon hearing the application at Winnipeg, June 15, in the presence of counsel for the railway companies, no one appearing for the applicant, and what was alleged; and upon reading the further submissions filed, it is ordered that the applicant's shipments of fruit and vegetables to points in Alberta and Saskatchewan, to and including Moose Jaw, be moved via Sweet Grass, on the G.N.R., and Coutts, on the C.P.R.; the C.P.R. and G.N.R. forthwith to file tariffs showing rates from the Similkameen Valley to Alberta and Saskatchewan points as far east as Moose Jaw via the routing suggested.

### Beverley Coal Co. Running Rights.

27557. Aug. 14. Re application of Beverley Coal Co. for running rights over a portion of the spur line between the Grand Trunk Pacific Ry. main line and the Humberstone Coal Co.'s line to the point of the proposed spur into the Beverley mine, and for an order fixing the terms of the user. Upon hearing the application at Edmonton, June 11, the applicant company, the Grand Trunk Pacific Ry., and the Humberstone Coal Co. being represented, and what was alleged, and upon reading the further written submissions filed, it is ordered that the application be, and it is hereby, dismissed.



# Electric Railway Department

## Increases in Electric Railway Freight and Passenger Rates.

The Board of Railway Commissioners has passed the following orders, in addition to those given in Canadian Railway and Marine World for May to August, both inclusive:—

**Montreal & Southern Counties Ry.**—27456, July 27. Re application of Montreal & Southern Counties Ry. for an order permitting it to file tariffs providing for a general advance in tolls for carriage of passengers and freight over its line in the same manner and to the same extent as permitted by the board in the case of steam railways: Upon hearing the application at Montreal, June 10, in the presence of counsel for the company and the municipalities of Greenfield, Longueuil, Montreal South, and St. Lambert, and what was alleged, and upon reading the further submissions filed, it is ordered that the company be authorized to publish and file tariffs increasing its existing freight rates, except on coal and coke, by 15%, and its rates on coal and coke by 15c a ton; also to increase its standard maximum passenger rate so as not to exceed 2.875c a mile. The increased rates herein authorized shall not become effective until the company has complied with the requirements of sec. 327 and 331 of the Railway Act.

27508, Aug. 1. Re application of Montreal & Southern Counties Ry., under sec. 327 and 331 of the Railway Act, for approval of its Standard Maximum Freight Mileage Tariff C.R.C. 33, and its Standard Maximum Passenger Tariff C.R.C. 21: The said tariffs having been filed on the basis permitted by the board in order 27456, July 27, it is ordered that they be approved, subject to compliance with the requirements of secs. 327 and 331 of the Railway Act before being made effective.

### OTHER APPLICATIONS AND INCREASES.

**British Columbia Electric Ry.**—We were advised Aug. 14 that the fares then in force on this company's system of city lines were as follows:—

**Vancouver City:** Fare, 6c with transfer privilege, or 6 tickets for 35c. This fare replaced the 5c fare, or 6 tickets for 25c, both of which carried transfer privilege.

**South Vancouver and Point Grey municipalities:** The fare within the confines of these individual municipalities is 6c, with transfer privilege, from any one point to any other point within the municipality. Settlers' tickets are 10 rides for 70c, with transfer privilege from the municipality to Vancouver City cars. This replaced the previous settlers' rate of 10 rides for 50c, which carried transfer privilege to Vancouver City lines.

**New Westminster City:** The fare is 6c, with transfer privilege, or 6 tickets for 35c, also with transfer privilege. This rate of fare replaced a straight 5c fare which carried transfer privilege.

**North Vancouver City:** The fare is 6c, with transfer privilege, or 6 tickets for 35c, also with transfer privilege. This fare replaced a straight 5c fare, which carried transfer privilege. The company has also granted North Vancouver City and district a special ticket of 10 rides for 70c, with privilege of a transfer from North Vancouver cars to Vancouver City cars.

**North Vancouver district:** The fares

are the same as those within North Vancouver City.

**Victoria City:** The fare is a straight 5c one, without transfer privilege. This fare replaces a 5c fare, with transfer privilege, or 6 tickets for 25c with transfer privilege.

No changes have been made in the interurban fares, but the company has applied to the Board of Railway Commissioners for permission to increase commutation fares for the carrying of passengers on the Vancouver & Fraser Valley Ry., covered by tariff B.C.E.R. 11, C.R.C. 5, on the basis as outlined in tariff B.C.E.R. 19, C.R.C. 7.

The following information is gathered from unconfirmed press reports:—

The Mayor of Vancouver informed the city council Aug. 11, that he would not sign the bylaw and agreement authorizing the company temporarily to charge a 6c fare on its city lines. He demanded that the rates for domestic lighting be reduced immediately, which the company declined to do, whereupon he stated that unless the company reduced the rate for lighting, he would not sign the agreement as authorized by the council, to permit the company to increase its street railway fare to 6c. He wrote the Attorney General, asking him if he would use his good offices to the fullest extent to the end that a director or receiver be appointed under the B.C. Minister of Railways, in case the company took its cars back to the barns, so that the public might be assured of a car service until such time as a public utilities commission should be appointed by the government to control this and other similar situations. Following the mayor's announcement of his intention, citizens using the street cars began on the evening of Aug. 12 to refuse to pay more than 5c. The Attorney General is reported to have said, Aug. 15, that he would take all the necessary proceedings to enforce the rights of the citizens should the B.C.E.R. fail to operate its lines in Vancouver. The company has announced that it cannot grant any reduction in the rates for light under present conditions; that it insists on the 6c fare, and that it has no intention to cease operating its cars.

**North Vancouver City Council and North Vancouver District Council,** have approved of bylaws authorizing the B.C.E.R. to increase its fares to 6c within their respective limits. The bylaws are to be submitted to a vote of the electors on an early date.

**Burnaby Tp. Council** has under consideration a bylaw authorizing an increase of fares on the electric line in Burnaby to 6c, and on the Burnaby-Vancouver line to 7c.

**Cape Breton Electric Co.**—The enquiry by the Nova Scotia Public Utilities Commission into the proposed increase of fares on this company's lines, particulars of which were given in Canadian Railway and Marine World for August, was resumed Aug. 13, and was concluded Aug. 16, judgment being reversed.

**Hamilton Radial Electric Ry.**—Following the Board of Railway Commissioners order published in Canadian Railway and Marine World for August, pg. 346a, authorizing the company to increase its passenger rates from 2c to 2½c a mile,

subject to the limitations created by its franchise bylaws of Saltfleet and Nelson townships, Burlington village and Oakville town, General Manager Coleman sent the following communication on Aug. 17 to all the municipalities interested:—

"The attention of your council is called to the following statement of facts and notification:—The Hamilton Radial Electric Ry. has throughout its history been a losing concern. Scarcely a year since its inauguration has it anything to show as the result of operations but loss. The rates of fare insisted on by municipalities in their bylaws are quite too low for a well equipped and well managed system to avoid constantly recurring returns of actual loss. The present cost of materials and wages and other necessary outlays has greatly aggravated this loss, which has become intolerable. Electric railways all over the continent have been allowed to increase their fares, and the Board of Railway Commissioners has expressed the opinion that the present rates of fare are unreasonably low. The company is therefore compelled, with a view to reducing its loss as far as possible, to reduce its scale of operations to the simple requirements of the franchise bylaws. The municipal councils, in a sense representing the public, have the responsibility cast on them of avoiding or removing any inconvenience that may be suffered, but from any reasonable view of the situation, it cannot be expected that the company must voluntarily continue to lose more and more as the traffic increases. The company has been and is willing to leave the fixing of the rates of fare to the adjudication of the Board of Railway Commissioners, the municipal bylaws to be amended accordingly; but notice is hereby given that under the present rates of fare, the service must, and will, on and after Sept. 15, 1918, be reduced to the number of cars each way required by the bylaws."

The company's action means that the service will be reduced to 6 trains a day, in each direction, instead of 19, as during the last winter season.

**The Moncton Tramways, Electricity & Gas Co., Moncton, N.B.,** will, according to a press report, put in force shortly a straight 5c fare on its street railway.

**Montreal Tramways Co.**—The hearing of the appeal of the Montreal Tramways Co. and of the municipalities within which it operates, against the schedule of fares ordered by the Montreal Tramways Commission, and published in Canadian Railway and Marine World for August, was begun before the Quebec Public Utilities Commission July 31. After sitting for three days, the commission adjourned to Aug. 8, and concluded its hearing of the case Aug. 10, after three additional days sittings, when judgment was reserved.

Soon after the commission started hearing the appeal, it was informed that judgment had been given in a Quebec court by Justice Mercier dismissing the petition of Dr. L. Dubois and H. Robert for an interlocutory order restraining the commission from hearing the appeals. An effort had been made to postpone the hearing of the appeals by the commission until this matter had been disposed of, but the commission decided that it had plenary powers in its own field, and was



not a court of inferior jurisdiction to the superior court.

The matter of the writs before the superior courts did not end with the dismissal of the petition for an interlocutory writ by Justice Mercier on July 31. On the original writ applied for by Dr. Dubois and H. Robert, Justice Monet issued an order in the practice court, which the commission held did not bind it. Further proceedings were taken in the superior courts, where application was made for an interlocutory writ, the object being to ascertain whether the issue of the first order did not actually restrain the commission from hearing the appeals until judgment had been given on the merits of the application. This application Justice Mercier dismissed with costs. On Aug. 5, J. L. Perron, K.C., filed an inscription in law in the practice court, in connection with the original petition, with the object of having such petition quashed. On the hearing of the matter Aug. 6, Justice Ducloux maintained the inscription and dismissed the writ of prohibition. Proceedings were initiated by Dr. Dubois and H. A. Robert, Aug. 14, to carry the matter to the Court of Appeal, with a view of obtaining a reversal of Justice Ducloux' decision.

The case for the Montreal Tramways Co. was presented before the Public Utilities Commission by J. L. Perron, K.C., Chief Counsel, and evidence was given by E. A. Robert, President; J. E. Hutcheson, General Manager; H. E. Smith, Comptroller; W. F. Graves, Chief Engineer; D. E. Blair, Superintendent of Rolling Stock, and A. S. Byrd, Superintendent Power Plants, and other company officials, who were cross examined by A. W. Atwater, K.C., representing Montreal; Senator Beaubien, representing Outremont; J. W. Wilson, representing Westmount, and J. F. Hackett, representing Montreal West. These counsel, and also counsel for Montreal North, Pointe aux Trembles, and Lachine, presented brief arguments in support of the appeals made by the municipalities. Mr. Perron replied on the whole case, and the commission adjourned to consider the evidence.

The company, through Mr. Perron, asked that for a 7c cash fare, with 4 tickets for 25c; and free transfers within the uniform fare territory. No appeal was made against the proposed schedule of fares for the territory outside the uniform fare territory. On the basis of the present traffic in the uniform fare territory, the 7c fare asked for would, it is estimated, give the company, including miscellaneous earnings, an income of \$10,681,120.

**Quebec Railway, Light & Power Co.**—In reference to the use of workmen's tickets by females, which was mentioned in Canadian Railway and Marine World for August, pg. 346c, we are advised that in the revised tariff agreed on between the company and the city council recently, the company agreed to sell workmen's tickets for use by bona fide workmen between 6 and 8 a.m., and 5 and 7 p.m. Considerable opposition was, however, made on account of there being a large number of females engaged in shoe factories and other munition factories in the city and district who heretofore travelled on workmen's tickets, and at the request of a number of organizations acting on behalf of the working women, and at the request of the city council, the company agreed to extend the sale of workmen's tickets to working women. Literally speaking, it is workmen only who are entitled to use these tickets, and while the company has not as yet put into force an identification card or badge system, it may de-

cide on this action should it find that the privilege is being abused. From information received from the conductors, it is stated that, so far as they can judge, only bona fide working men and women are using the tickets. Article 2013a of the Civil Code, as amended by 7 George V. chap. 52, with reference to privileges of workmen, builders and other persons, says: "the work 'workmen' includes the artisan the laborer and generally everyone who make his living by manual labor." The privilege given to the working women may be cancelled at any time, it being an act of courtesy only on the company's part to honor these tickets from working women.

**Regina Municipal Ry.**—At a meeting of the Regina, Sask., City Council's street railway committee, Aug. 4, the question of increasing fares on the municipal railway was discussed at length and it was decided to make no alteration in the present rates.

**Toronto & York Radial Ry.**—The Ontario Railway and Municipal Board issued the following order July 9:—Re application of Toronto & York Radial Ry. for permission to increase its freight rates by 15%, in line with advances granted to other electric railways operating in Ontario: Upon reading what has been submitted by the railway in support of its application, and upon the report and recommendation of the board's Traffic Expert, it is ordered that the T. & Y.R. Ry. be authorized to increase its standard freight rates by 15%; provided that in the disposition of fractions of 1c the following rule shall be observed:—0.24 and under to be dropped; 0.25 to 0.74 to be counted as  $\frac{1}{2}$ c; 0.75 and over to be counted as 1c.

The Ontario Railway and Municipal Board, on Aug. 7, approved the T. & Y.R. Ry.'s standard freight tariff of maximum mileage tolls filed with the board, the said tariff with reference to the order to be published in two consecutive issues of the Ontario Gazette.

**Winnipeg Electric Ry.**—A Winnipeg press dispatch stated recently that the company was considering the question of applying to the city for authority to increase its fares from 5c to 6c each, with 1c for transfers. Up to the time of writing (Aug. 24), no action had been taken.

### Electric Railway Fares, Etc. in Great Britain.

The recent report of the select committee on tramways appointed by the House of Commons, recommends that the Board of Trade should be empowered by legislation, to permit, until two years after the war, the modification of statutory requirements with regard to the charges for the conveyance of traffic on tramways and railways constructed wholly or mainly on public roads, in the case of undertakings the financial circumstances of which are proved to have been injuriously affected by the war. Evidence was given that wages had risen from 60 to 100%, and the cost of materials from 100 to over 200% since the war. In addition, there is the increased cost of fuel, and consequently of power, coupled with restrictions on supply. Statistics were supplied showing that out of 80 municipal undertakings, only 28 were charging maximum fares to ordinary passengers, and 44 maximum workmen's fares. The committee was satisfied that some relief should be afforded to those undertakings that cannot increase their revenues, to compensate them for the abnormal working expenses occasioned by war conditions.

### The Toronto Railway Overcrowding and the Order for Additional Cars.

In response to questions by the Mayor of Toronto, as to the cause of the delay in the Toronto Ry. not complying with the Ontario Railway and Municipal Board's order to have 100 additional cars in service by Jan. 1, 1918, and another 100 by Jan. 1, 1919, who authorized the delay, and why the company's car shops are not in full operation, the following information was supplied recently:—

"The delay in obtaining results from the board's order arises from the times fixed for the sittings of the court, which cannot be expedited by any known process. The dates of the sittings of the court are fixed by the judges of the Supreme Court each year for the following year and provide dates and appointments for each of the judges throughout the whole year. It will readily be understood that these cannot be re-arranged to suit the convenience of litigants. The company's General Manager, while under oath before the board, stated that it was impossible to obtain men to conduct a factory in Toronto, the material for the cars or power to run the cars. The Legislature, at its last session, with the consent of the civic authorities, waived the provision in the agreement requiring the company to manufacture all its cars at a factory within the city. This was done for the purpose of widening the field upon which the cars might be obtained."

The Toronto Ry.'s appeal against a fine of \$24,000 inflicted by the Ontario Railway and Municipal Board for failure to comply with the order to provide additional cars, is due to come before the courts shortly, on a question of jurisdiction, and in the meantime nothing is being done regarding the cars, the company claiming that, on account of the general conditions, it is not possible to obtain the necessary materials and labor.

The mayor, however, with his customary misdirected energy, insists on obtaining more indictments for overcrowding of cars, and states that the board and the courts are trifling with the matter, and that if there is not more progress, he will seek advice outside the city's legal department.

### Alberta Motor Vehicles Act Amended.

The Alberta Government has, by order in council, repealed section 49 of the Motor Vehicles Act, and replaced it by a new section which deals with automobiles passing street cars.

The old section provided that: "In approaching or passing a car of a street railway which has stopped or is about to stop to allow passengers to get on or off, the operator of every motor vehicle shall bring said motor vehicle to a stop and not proceed until the car has started and all passengers who have alighted shall have gotten safely clear of the motor vehicle."

The new section reads as follows: "In approaching or passing a car of a street railway which has stopped to receive or discharge passengers, the person operating a motor vehicle shall bring such motor vehicle to a full stop in the rear of the said car and shall not proceed until all passengers getting on or off the said car shall have gotten safely clear of the motor vehicle."



## Zone Fares for Increased Revenues.

The following has been received from a correspondent in connection with the more or less general applications for increased fares on electric railways. While in no way committing itself as to the best methods to obtain increased revenue from street railway patrons, Canadian Railway and Marine World would be pleased to receive the views of those chiefly concerned, with the object of publishing them for general enlightenment.

"While increases in passenger and freight rates are the order of the day for steam railways, and to a limited extent for electric railways, the regular street railway systems seem to be expected to preserve the status quo ante bellum. Apart from those operated by municipalities, most street railways appear to be bound by agreement with the municipalities in which they operate, to provide transportation under any and every condition at a fixed maximum rate, with special privilege tickets at reduced prices. It is remarkable that greater elasticity in revenue is experienced on those systems which are not municipally operated, but even there there is a limit, and this seems to have been reached. On the present basis of rate fixing, there appears to be only one means of meeting the situation, viz., by increasing the 5c limit. This has been done in several cases in the United States, but in others, the proposal to raise the limit is not favored, counter proposals being made, for the adoption of a zone system of fares. This seems to me to be, not only a proper method to adopt in the present emergency, but the correct thing to do all the time. The main principle to be followed, is that each passenger should pay for the service rendered, and the short haul passenger should not be penalized for the benefit of the long haul passenger. The arrangement of zones could not possibly be made on a fixed basis to apply to all systems, but could, without doubt, be so mapped out in each locality as to meet the demands of the particular district concerned, having regard to the general trend and density of traffic, but such arrangement should not be made arbitrarily with a pair of compasses from a central point on a map. I am of the opinion that the general adoption of zone systems of fares based on a fare in accordance with the service rendered, would relieve the present situation by producing increased revenue, and would tend toward a better, and perhaps more economical operation of the system.

"In connection with the Rhode Island Co.'s street railway system at Providence, R.I., the Rhode Island House of Representatives has adopted the zone system in preference to raising the fare limit to 6c, but action by the Senate is yet to be taken. The legislative committee of the house rather favored the higher unit fare, and in the course of the hearing of the application, it transpired that the estimated increased revenue from a 6c fare was from \$440,000 to \$500,000, and from the zone system of fares it was from \$400,000 to \$550,000. Reasons given in favor of the higher unit fare as against the zone system, were: that it was the mode of relief already granted elsewhere; that the zone system as proposed had not been applied to another community of the size of Providence; that it was simpler of operation and easier as a measure of temporary relief; that it would not result in any disturbance of community life or of property and rental values; and that the increased fare is a burden which

should be shared by all patrons of the system.

"In my opinion, the fact that the zone system has not been applied to any system of considerable size, is no reason why it should not be, and I think it may fairly be said that the other points are debatable. The success of the modified zone systems used on practically all the street railway systems in Great Britain, is evidence that such a system can be operated efficiently as well as successfully, and I think that the statistics of the larger systems there will compare favorably with those of like systems on this side of the Atlantic."

## Lever and Street Car Pull Sheet Piles.

Improvised methods of pulling sheet piles were used at the Macomb St. bridge in Mt. Clemens, Mich. The circular cofferdam for the pivot pier had two rows of 9 in. T-girder rails. Those of the outer row were placed in radial position and alternated with heavy planks driven between the webs. Those of the inner row had their webs in a circumferential line, the heads and flanges being connected by lugs and clamps.

To pull the outer rails, a heavy timber was rigged as a lever, with its short end hooked to a hole in the rail web while four to six men on the long end kept the lever "teetering" until the pile came loose. At the same time a man with a sledge hammer struck the rail to help to jar it free. When it was loosened, it was pulled out by means of a chain hoist hitched to the bridge.

For pulling the inner ring a work car of the electric interurban railway was used. A rope hitched to the car on the bridge was led through a snatchblock hooked to the handrail, then down through an open panel in the cement sidewalk to a snatchblock at the water's edge and then back to the cofferdam. This rope was attached to a ring fitted to a hole in the web of the rail. By moving the car forward the rail was pulled sideways and torn away from its next neighbor. When thus loosened it was pulled up by means of the chain hoist and lowered upon a raft. Men with rail tongs carried it on a working platform to the shore.—Engineering News Record.

## The International Railways and Canadian Money.

A Niagara Falls, Ont., press dispatch stated recently that the International Ry. of Buffalo, N.Y., was absolutely refusing to take Canadian bank notes. Enquiry of the company by Canadian Railway and Marine World has elicited the following reply:—

"This company, being international, operates part of its railway in the U.S. and part in Canada. Naturally revenue derived on the Canadian side is deposited in Canadian banks. Canadian visitors to Niagara Falls, N.Y., spend money shopping and sight seeing, using Canadian currency, which in the early stages of the war was accepted at par by U.S. merchants, as well as banks. Lately, however, the banks refused to take deposits of Canadian money without charging us a discount, which has ranged nearly as high as 3%. To overcome this difficulty, we then deposited the Canadian money we received with our banks in Canada. To further complicate the situation, the banks are now charging exchange or discount on funds we withdraw from Cana-

dian banks, so no matter how we handle Canadian currency we are compelled to stand a discount. We are not as fortunate as merchants, who can always charge more for their wares to offset discount rate, while we are compelled to do business at a fixed rate. We instructed our agents lately to accept Canadian currency, provided those tendering it are willing to pay the discount. So long as the banks compel us to pay exchange and will not accept deposits from us except at a discount, it seems to us that our position in the matter is fair and just, otherwise we would lose from 2 to 3% on all Canadian currency handled. The whole trouble rests with the banks, in charging us exchange, thus compelling us to charge a discount to protect ourselves from loss. You can readily understand that we do not wish to do anything to cause our patrons inconvenience, and it is only due to circumstances beyond our control that makes it necessary for us to charge a discount on Canadian currency tendered to us in the U.S. From the above it is obvious that we do accept Canadian money."

## Montreal Tramways Mutual Benefit Association Report.

The 15th annual report for the year ended April 30, 1918, gives the following summary of relief work done during the past year:—

Members disabled through sickness or injury . . . . .	1,529
Visits made by physicians to disabled members . . . . .	607
Consultations given by physicians to disabled members . . . . .	8,653
Prescriptions issued . . . . .	6,594
Paid for sickness and injury . . . . .	\$13,825.80
Paid for medicine . . . . .	2,294.73
Paid for pensions . . . . .	1,714.00
Paid for withdrawals . . . . .	932.22
Paid for death and burial insurance . . . . .	6,830.80

The following benefits have been paid since the formation of the Association to April 30, 1918:—

Death and burials . . . . .	\$113,992.88
Sickness and injury . . . . .	144,677.60
Pensions . . . . .	7,563.50
Withdrawals . . . . .	4,312.85

There has also been paid \$62,264.81 for medical attendance and medicine. The expenses of management amounted to \$81,156.80. The amount received from members for fees and dues for the same period was \$208,539.50.

The committee gratefully acknowledges receipt from the Montreal Tramways Co. of \$14,659.67, which amount, added to the fees and dues received from members, viz: \$16,483.50, and the interest received on investments and bank deposits, amounting to \$10,404.89, makes the total revenue for the year \$41,548.06, and expenses being \$35,590.47, leaves a surplus of \$5,957.59, which has been transferred to the reserve fund.

The officers for the current year are:—President, J. E. Hutcheson; Secretary-Treasurer, Patrick Dubee; Assistant to Secretary-Treasurer, S. A. Caron; committee of management, E. A. Robert, A. Gaboury, Hon. J. L. Perron, K.C., D. E. Blair, A. S. Byrd, R. M. Hannaford, J. C. Brossard, E. Renaud, R. Lavigne, M. Paiement, D. Mathieu, O. Marleau, A. Bessette.

Calgary Municipal Ry.—The Calgary, Alta., City Comptroller's department has issued its report on the civic finances for the half year ended June 30. The three public utilities operated by the city show increased revenues of approximately \$20,000 as compared with the corresponding period of 1917; the increase in revenue of the municipal railway being approximately \$6,000.



# Electric Railway Municipal Franchises and Limitations of Passenger Fares.

Canadian Railway and Marine World for August contained two orders passed by the Board of Railway Commissioners, one authorizing the Hamilton Radial Electric Ry. to increase its passenger fares from 2c to 2½c a mile, subject, however, to the limitations created by certain of its franchise bylaws; the other the Montreal & Southern Counties Ry. to increase its freight and passenger rates to the same extent as permitted by the board in the case of steam railways, notwithstanding the provisions of its franchise from the town of St. Lambert. These judgments are of such great importance that the following extracts from them are given:—

## Hamilton Radial Electric Ry.

The Chief Commissioner, Sir Henry Drayton, after dealing with the company's capital, earnings, etc., said:—It has a line of 25 miles, and has also 8.69 miles of second track. The company is not one which can well be compared with the trunk line railways, as claimed by the city of Hamilton. It can be much more reasonably compared with the London & Port Stanley Ry., which has a mileage of some 29 miles. The board has only recently considered the L. & P.S. Ry.'s application for an increase of rates and found that increase to be justified. Comparisons may be much more fairly instituted between these two radials than between any radial and a steam railway. Here again comparisons cannot be exactly made. The London & Port Stanley's business is much more remunerative than the Hamilton Radial's, and no reasonable rate increase of the Hamilton Radial tariffs could put the net earnings of the systems on a parity. While the Hamilton Radial earns on its freight traffic but \$12,368.72, the London & Port Stanley earns \$147,826.72.

The passenger traffic returns, however, may be compared. The London & Port Stanley's standard passenger rate before its rates were increased was 2½c a mile, subject, of course, to the usual minimum of 5c. Its standard rate as increased is 2.875c a mile. The Hamilton Radial's standard passenger tariff is 2c a mile. The London & Port Stanley's standard passenger rate is therefore 43.75% higher than the Hamilton Radial's.

Much traffic, of course, does not move on the standard rate, but moves under special tariffs. The statistics for 1917 show that the Hamilton Radial carried 1,322,615 passengers, with a resulting gross earning of \$148,175.56, which gives an average rate per passenger carried of 11.20c. In the same year the London & Port Stanley carried 726,799 passengers, with a resultant income of \$147,470.44, an average rate per passenger of 20.29c. The Hamilton Radial, therefore, had a passenger traffic amounting in load to 82% more than the London & Port Stanley, but its remuneration per passenger was 48% less than that received by the London & Port Stanley.

The excess of passenger density on the Hamilton Radial is not as great as the excess figures would show, as reducing the number of passengers to the passenger car mileage basis, the statistics show that the passenger car miles of the Hamilton Radial amounted to 489,658, with passengers, as already noted, of 1,322,615, resulting in an average of 2.72 passengers per car mile. The London & Port Stanley has a passenger car mileage of 440,315, carrying 726,799 passengers, making an average of 1.65 passengers per car mile. The car mile traffic density on the London & Port Stanley is, therefore, but 39.4%

less than that of the Hamilton Radial, indicating that the London & Port Stanley has the benefit of a longer haul, approximating 50%, and which of necessity, apart from rate differences, would increase the passenger returns.

The Hamilton Radial's returns from operating, after deducting taxes, amount to \$24,015.89. Those of the London & Port Stanley for the same year were \$106,162.88. The Hamilton Radial earns \$960.63 a mile of line; the London & Port Stanley \$3,660. The London & Port Stanley is prosperous; the Hamilton Radial is maintained only on advances made by the Dominion Power & Transmission Co.

There can be no question that it is entirely in the public interest to have railways self sustaining and capable of making the expenditures which the constant demands of transportation from time to time entail. The Hamilton Radial pays interest at only 7% on a capitalized value of \$13,723 a mile of line. The property unquestionably is worth much more. In so far as the merits go, there is no question that the company is entitled to a larger revenue and to increase its rates to those enjoyed by the London & Port Stanley. As I see it, however, the case cannot be dealt with on its merits. Certain portions of the company's tracks are laid under municipal bylaws and subject to municipal franchise. The Saltfleet Tp. bylaw, sec. 18 (a), reads as follows:

"The said company may charge and collect from any person on entering any of their cars for riding on any part of their railway the following fares: For any distance less than 3 miles, 5c, and for any greater distance, 2c a mile, and for a return trip from Hamilton to Burlington, or Burlington to Hamilton, the sum of 25c."

The Village of Burlington bylaw reads as follows:

Section 32 (h): "The company shall carry passengers for a rate not exceeding 5c each from any point within the limits of the Village of Burlington to the Burlington Canal, and shall carry passengers from Burlington Canal to any point within the limits of the Village of Burlington for a fare not exceeding 5c each, and children in arms shall be carried free, and the company shall sell tickets to school children residing in the Village of Burlington desiring to use the company's cars for the purpose of going to or coming from a public or private school, in the City of Hamilton, at a price not exceeding 4c tickets for \$1.85, but shall not be required to sell less than 4c tickets to any one or more of such school children, and each of such tickets shall be good for one fare from any point in the Village of Burlington to any point in the City of Hamilton, and from any point in the City of Hamilton to any point in the Village of Burlington, for school purposes only."

Sec. 37: "The company may carry passengers and charge and collect from every person on entering any of their cars or carriages for riding any distance on their railway within the Village of Burlington in the same continuous route, a sum not exceeding 5c, except children under five years of age accompanied by their parents or other persons having them in charge, such children will ride free, provided they do not occupy seats, and the company shall carry children between the ages of 5 and 12 years any distance on their railway within the Village of Burlington in the same continuous route for a cash fare of not more than 3c each; provided also that the payment of the said fares of 5c and 3c respectively hereinbefore mentioned shall entitle the person so paying the same to ride in the cars or carriages of the company from any point within the limits of the Village of Burlington to the Burlington Canal, and all such persons may return in the cars or carriages of the said company from said Burlington Canal to any place within the limits of the Village of Burlington upon payment of the said rates as aforesaid in this clause mentioned; and it is hereby declared and provided that the rate of fare payable by any adult now or hereafter residing in the said Village of Burlington for riding in the company's cars or carriages from any place within the limits of the Village of Burlington to any place within the limits of the City of Hamilton, and returning to any point within the said village on the line of said company shall not exceed the sum of 25c."

Sec. 38: "The said company shall keep tickets for sale upon their cars and shall sell tickets to persons desiring the same at a rate not exceeding 25c for 6 tickets, and each of such tickets shall be good for one fare to any point on their line within the limits of the Village of Burlington to the Burlington Canal and from the Burlington Canal to

any point within the limits of the said Village of Burlington."

The Township of Nelson bylaw, sec. 19 (a), reads as follows:

"The said company may charge and collect from any person on entering any of their cars for riding on any part of their railway, the following fares: For any distance less than 3 miles, 5c, and for any greater distances 2c a mile, and for return trip from Hamilton to Burlington, or Burlington to Hamilton, the sum of 25c, and for return trip from any point on the company's line in the Township of Nelson east of the Village of Burlington to the City of Hamilton and return, the sum of 30c."

The City of Hamilton bylaw also has rate stipulations which, however, are not of moment, as it was shown at the hearing that the company is not permitted to carry passengers in Hamilton, and the stipulations referred merely to Hamilton traffic.

It was urged at the hearing, as well as in written submissions, that the agreements with the municipalities absolutely concluded the matter, and that the rates could not be increased. The Railway Act leaves the whole subject of rate regulation in the board's hands. The matter is not left so that certain shippers or municipalities can obtain unduly low or discriminatory rates, whether by agreements or otherwise. Shippers and passengers cannot be discriminated the one against the other, nor can one locality or municipality obtain any more favorable treatment than the other. In other words, discrimination cannot be practiced either as between localities or individuals. Township regulations, which can cover only a part of the line, of necessity give way to power regulation over the whole and under which high rates on the one hand can be cut down, or unduly low rates on the other hand raised. The board's general jurisdiction under the Railway Act is not, therefore, ousted by any municipal agreement.

The Hamilton Radial, in the first instance, was incorporated and constructed under Ontario legislation. Under its act of incorporation, and under the Ontario law, it was open to municipalities to enter into franchise agreements and pass franchise bylaws, and the company then became bound by these. After the hearing, on looking into the company's statutory position, I find that it was declared to be a work for the general advantage of Canada by the statutes of Canada, 1918, chap. 117. Sec. 10 of that act reads as follows:

"Nothing in this Act contained, or done under or by virtue of the powers hereby granted, shall alter or affect the provisions contained in any bylaw of any municipality heretofore passed relating to the company, or to any portion of the company's railway heretofore or hereafter constructed, or contained in any agreement between any municipality and the company; but all such agreements and bylaws shall continue and remain in full force as between the municipality and the company as continued and incorporated by this act; and in case of any inconsistency between the provisions contained in any such bylaw or agreement and the provisions of The Railway Act, the provisions contained in the bylaw or agreement shall prevail, and all such bylaws and agreements and all rights, franchises, privileges, and exemptions of the company thereunder are hereby confirmed."

In view of this section, and following the opinion adopted by the board, having regard to the provisions of the Crow's Nest Pass Act and agreement, in my opinion the board is bound by the provisions of the municipal bylaws referred to, and ought not to authorize any tariff which would create charges higher than those stipulated in the different bylaws for the services set out in the bylaws. I do not repeat the grounds on which this opinion is based: it will be found in the Increased Rates Case 22, Can. Ry. Cases, 49, at pgs. 57-60. In my view, therefore, the only order that can be made is to



allow the Hamilton Radial rates to be increased to those enjoyed by the London & Port Stanley, subject, however, to the limitations created by the municipal franchise bylaws. It is probably the case that this restriction will largely prevent any relief whatever being granted the applicant company. The point which to my mind determines the issue was not raised at the hearing. In my opinion, it is so plain and clear that nothing would be gained by setting the case down for another hearing so that the matter could be discussed. As the company has not been heard on this question, however, it is entitled to a rehearing on this point if it so desires.

#### Montreal & Southern Counties Railway.

The Chief Commissioner, Sir Henry Drayton, after dealing at length with the company's capitalization, earnings, etc., said:—

Rates must not only be just and reasonable as between the public and the carrier, but they must also be free from discrimination not only as between individual shippers, but also as between localities. The present rates are clearly unremunerative.

I now deal with the question of municipal agreements. Mr. David, K.C., appeared for the St. Lambert and Montreal South municipalities. Mr. Chisholm, K.C., who appeared for the railway company, stated that the application to increase rates did not conflict with his company's agreement with the Montreal & Southern Counties Ry. Company; but there is no doubt whatever that the issue is direct in so far as the agreement with the Town of St. Lambert is concerned. Agreements are also relied on by the Greenfield Park and Longueuil Municipalities. The agreement made with the Town of St. Lambert, as contained in bylaw 44, was adopted by the electors. Sec. 6 provides for the rate of fares, as follows:

"The rate of fare to be charged and collected by the said company for commutation tickets, or for single and round trip tickets; between any point on their line in St. Lambert and their terminus in the City of Montreal, and vice versa, shall not exceed the rate or fare charged by steam railways for similar tickets between the said places at the date of the passing of the present bylaw by the city council."

If increased tariffs as applied for are allowed, these tariffs will not be higher than the existing rates on the steam roads, but will be higher than the steam railway rates in force at the time the bylaw was passed. Mr. David's submission, which is joined in by the other interested municipalities, is that the board has no jurisdiction to change the rates fixed by the agreement. His final submission on the point is:

"I submit that although the board may have a general jurisdiction over all railways, electric or steam, throughout Canada, whenever there is a private agreement between a municipality, in which one of the conditions is that the rate shall never exceed a certain amount, that contract should be accepted."

Mr. David, upon being asked how many other municipalities the line served, stated that it runs all along the south shore of Granby, passing through St. Lambert, Greenfield Park, Montreal South, Longueuil, Chambly, Richelieu,—a very large number altogether, and that the company's mileage in St. Lambert is only 1.4 miles. The Montreal & Southern Counties Ry. Co. was incorporated by an act of the Dominion Parliament declaring its undertaking to be a work for the general advantage of Canada. The company's mileage in all the municipalities having agreements limiting rates constitutes but a comparatively small part of the whole.

Beyond all question the company requires more revenues. There is no room for debate, in so far as municipalities are concerned which are without agreement.

Under the circumstances the company is entitled to increase tolls beyond all question in so far as such municipalities are concerned, but to increase the company's tolls in such municipalities without at the same time increasing the rates in St. Lambert and the other municipalities which have agreements with the railway, would be to produce a different scale of tolls between such municipalities and the municipalities with agreements.

The Railway Act further, does not contemplate rates being fixed by agreement. The board's jurisdiction over rates is not shared by one conferred upon municipalities. On the other hand, agreements between individual shippers and railways and separate municipalities or localities must inevitably tend to defeat the object of the act, which is to secure as far as possible a just and reasonable basis of charge free from discrimination. In the present case the agreements go further than to provide for merely a local rate within the bounds of the municipality and call for rates either into or out of the interested municipalities. The railway company can only recover such tolls as its tariffs filed with the board justify. Under the act, it is for the board, and not for the municipality, to determine whether or not the tariffs filed are unjust or unreasonable. The question as to whether tolls are, or are not, unjust or unreasonable cannot conclusively be determined by municipal agreement, even though fixed by a municipality as a condition of the franchise and so accepted by the carrier. Agreements between the municipalities and the railway company do not oust the jurisdiction of the Dominion Parliament and the board in their administration of the Railway Act. The agreements in question have not been validated by legislation and have not been submitted to or approved by the board.

After citing a number of cases previously decided, the Chief Commissioner said:—Similar action has been taken by rate regulating commissions in the United States. Indeed, such action is the only logical result of either provincial or Dominion rate regulating laws. Rates cannot well be regulated by two conflicting jurisdictions. I find that the cost of the transportation service afforded by the company has greatly increased and that the increased rates the company desires to make effective are just and reasonable. In my opinion, an order ought to issue as prayed, notwithstanding any municipal agreement to the contrary.

#### London and Port Stanley Railway Report.

The London & Port Stanley Ry.'s report for the year ended June 30, was laid before the London, Ont., City Council, Aug. 21. Following is a table showing the earnings and expenses, the cents in each case being omitted. This table is compiled from press reports and is subject to correction:—

Passenger earnings.....	\$177,598
Freight earnings .....	143,608
Miscellaneous earnings .....	47,706
	\$368,914
Maintenance of way and structures .....	\$18,829
Equipment .....	23,030
Traffic expenses .....	33,109
Miscellaneous expenses .....	66,900
	254,659
Gross income .....	\$114,254
Taxes .....	\$2,251
Interest .....	53,732
Rental .....	20,000
Sinking fund .....	14,766
	90,750
Net earnings .....	\$23,503

#### Electric Railway Finance, Meetings, Etc.

##### British Columbia Electric Ry. and allied companies.—

	June, 1918	June, 1917	12 mths. to June 30, 1918	12 mths. to June 30, 1917
Gross	\$488,873	\$373,029	\$5,986,437	\$5,326,382
Expenses	388,019	351,784	4,630,691	4,263,007
Net	100,854	21,245	1,355,746	1,063,375

Calgary Municipal Ry.—A press report states that for the six months ended June 30, the C.M.R. showed net earnings of \$6,743, against a deficit of \$21,230 in the same period of 1917.

##### Cape Breton Electric Co.—

	June, 1918	June, 1917	12 mths. to June 30, 1918	12 mths. to June 30, 1917
Gross	\$40,097.83	\$37,078.16	\$486,048.17	\$425,543.92
Exp.	29,940.65	26,424.14	339,416.00	253,057.33
Net	10,157.18	10,654.02	146,632.17	172,486.59

##### Edmonton Radial Ry.—

	1918.	1917.
Revenue for June.....	\$40,868.20	\$39,508.68
Operating expenses .....	32,082.20	32,118.42
Net earnings .....	\$ 8,786.00	\$ 7,390.26
Revenue, six months ended June 30 .....	\$264,243.72	\$254,865.24
Operating expenses .....	193,543.15	210,830.40
Net earnings .....	\$ 70,543.15	\$ 44,034.84
Fixed charges .....	124,777.86	127,965.18
Deficit .....	\$ 54,234.71	\$ 83,930.34
Passengers carried .....	5,383,584	5,255,778

Montreal Tramways Co.—The directors have deferred payment of dividend on common stock, ordinarily payable Aug. 1, until the appeal is decided regarding increases in fares.

The Nova Scotia Tramways & Power Co.'s comptroller advised the Halifax City Council, July 30, that on the following day there would be payable to the city \$11,436.51 on percentages account in respect of electric light and power and gas earnings, and that the city owed the company \$12,026.66 for public lighting. The city council proposed to tender a cheque for the amount due, less certain disputed items, on receipt of a cheque from the company for percentages.

Regina Municipal Ry.—A statement of the municipal finances for the six months ended June 30, issued by the city auditors, showed that there was a net deficit on the three public utilities operated by the city of \$37,616.02, of which \$30,223.57 was due to the operation of the R.M. Ry. At the beginning of the financial year provision was made for an estimated deficit of \$46,824.82 for the 12 months.

Toronto Civic Ry.—Traffic receipts for July, \$28,285.97, against \$23,262.63 for July, 1917. Passengers carried in July, 1918, and 1917, 1,691,403 and 1,380,801, respectively.

Toronto Ry.—Under the terms of a mortgage deed of Sept. 1, 1892, 304 4½% currency bonds have been drawn for redemption on Aug. 31, and cease to bear interest after that date.

##### Toronto Ry., Toronto & York Radial Ry. and allied companies.—

	June, 1918	June, 1917	6 mths. to June 30, 1918	6 mths. to June 30, 1917
Gross	\$1,035,932	\$984,529	\$6,356,169	\$5,873,584
Expenses	582,154	509,121	3,455,413	3,054,414
Net	453,778	475,408	2,900,756	2,819,170

##### Winnipeg Electric Ry. and subsidiaries.

	June, 1918	June, 1917	6 mths. to June 30, 1918	6 mths. to June 30, 1917
Gross	\$293,140	\$254,226	\$1,811,338	\$1,673,370
Expenses	218,282	204,562	1,385,293	1,237,473
Net	74,858	49,664	426,045	435,897

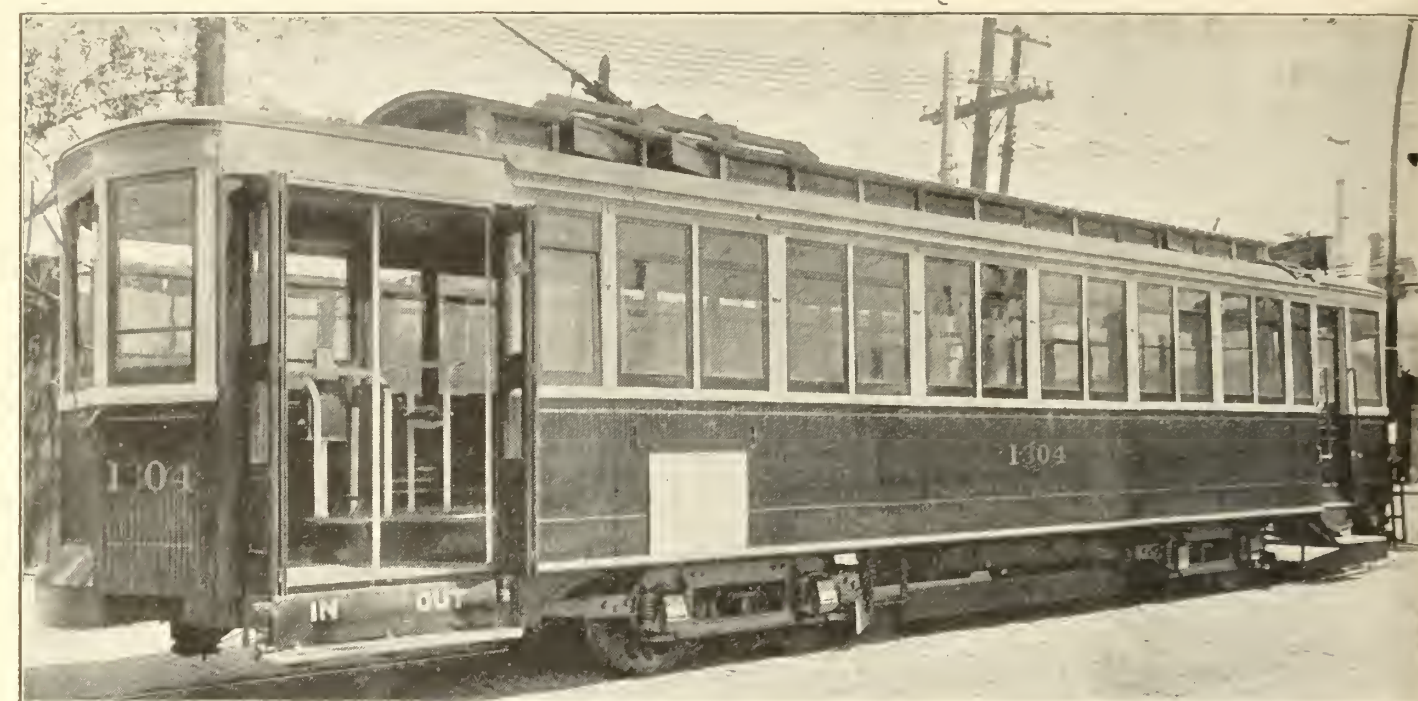
Gross earnings for June, \$293,139.92; net after operation, \$74,858.30; surplus after fixed charges, \$19,316.20.



## The Toronto Railway Prepayment Cars.

The illustrations on this page show a remodelled double truck car on a p.a.y.e. plan, which the Toronto Ry. has com-

pleted recently, and which has been approved by the Ontario Railway and Municipal Board. The company is remodeling 50 cars on this plan, and if it is successful, further cars will be changed as soon as possible, so that the whole system may be operated on this plan.



Toronto Railway Prepayment Car, with doors open and step down.

pleted recently, and which has been approved by the Ontario Railway and Municipal Board. The company is remodeling 50 cars on this plan, and if it is successful, further cars will be changed as soon as possible, so that the whole system may be operated on this plan.

The changes made, are confined to the rear end, where the bulkhead is being removed, and the main floor of the car projected into the vestibule, in order to accommodate a seat for the conductor, and a stationary fare box. By this arrangement the seating capacity of the car is not interfered with, and there is ample room on either side of the conductor for entrance and exit of passengers. The rear vestibule is fitted with folding doors and folding step, and these are operated by a small pneumatic engine located above the door, and connected with a light signal to the motorman, to indicate immediately the doors are closed. The mechanism is supplied by the National Pneumatic Co., New York.

The space occupied by the conductor projects about 3 ft. into the vestibule, and is 2 ft. wide, the vestibule measuring 6½ ft. from the original car floor line. On entering the car, passengers will pass in front and to the right of the conductor,



Toronto Railway Prepayment Car, rear vestibule, showing doors and step up.

case, passing on the conductor's left. When the car is full, the conductor will move the handle in front of him, to start

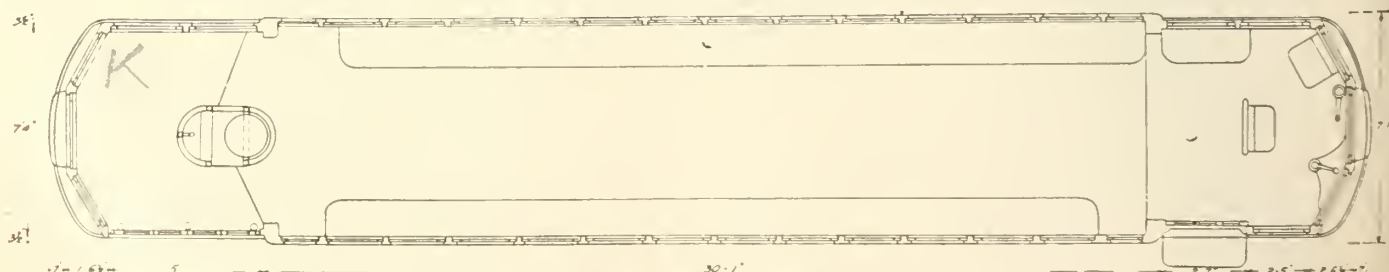
atically giving the light signal to the motorman to start the car.

The door opening is 5 ft. wide, and the

folded step, when down to allow passengers to enter the car, is 15 in. from the street level, the next step is 12½ in. to the vestibule floor, which is 9½ in. below the main car floor.

**Chatham, Wallaceburg & Lake Erie Ry.**—A Chatham, Ont., press dispatch of Aug. 14 says the Ontario Railway and Municipal Board has authorized the C.W. & L.E.R. to use natural gas for fuel until Sept. 1.

**Montreal Tramways Co.'s Franchise.**—An action has been started in a Quebec court in the name of J. P. Lanctot, mayor of Ville , prior to its annexation to Montreal, who was formerly a member of the Montreal City Council, to annul the franchise granted the Montreal Tramways Co. on June 28. The City of Montreal, the Montreal Tramways Commission and the Attorney General of the province are made parties to the action. The plaintiff alleges fraud and false representations, and contends that the franchise, granting that it is a statute, is unconstitutional, because the legislature delegated wits powers without the right to do so. It is further alleged that the M.T. Co. sought to force the city council to grant a new franchise in 1914, and in



Toronto Railway Prepayment Car, floor plan.

place fare in the box and pass into the car. Exit will be made either from the front, or back of the car, in the latter

the door mechanism, thus closing the doors and raising the folding step in one operation, and at the same time, auto-

connection with this allegation the whole of the proceedings in the injunction cases are recited.



## Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**—An agreement was signed Aug. 9, between the company and the North Vancouver City Council, under which the car tracks at the foot of Lonsdale Ave. will be moved to the west side of the street, and several other improvements made at the street car terminal there, which will facilitate both street car and ferry traffic. (Aug., pg. 348.)

**Calgary Municipal Ry.**—The City Engineer reported as to the proposed change of route of the car line from Calgary to Ogden at a recent meeting of the commissioners. He estimates that it would cost \$25,000 to grade the new route, move the rails from the present track, relay them and do the ballasting. The cost of right of way and of any compensation in connection with the carrying out of the work would also have to be provided for. The proposed new route would reduce the length of the line from 9,420 ft. to 7,600 ft., and of the total trackage from 12,020 ft. to 9,950 ft. This does not provide for any change in the route east of the high bridge. The matter was taken under consideration. (Aug., pg. 348.)

**Levis County Ry.**—We are officially advised that the reconstruction of 11.50 miles of the company's lines, by being ballasted with crushed stone, is being gone on with, and that up to Aug. 10, work had been completed upon 1.75 miles. (Aug., pg. 348.)

**London & Port Stanley Ry.**—The London Railway Commission has decided to co-operate with the London City Council in an application to the Board of Railway Commissioners for permission to erect a foot bridge across the Thames River to Beatty Bros. plant in Chelsea Green. In order to reach the proposed bridge, a footway would have to be provided along the railway right of way; and if the work is carried out, the commission proposes to raise its own bridge at that point 2½ ft. in order to improve the location for the provision of siding tracks. The cost of the work to the railway is estimated at \$13,500. May, pg. 211.)

**The Quebec Ry., Light & Power Co.'s** roundhouse and paint shop were destroyed by fire, July 30, together with 1 passenger excursion car, 1 flat car, 1 box car and 1 gondola car. These buildings were on the north side of the track at St. Anne de Beaupre, and the loss, which is covered by insurance, is placed at \$8,419. It has not been decided to rebuild on the same location, but should it be so decided, the building will be approximately 80 ft. square. The operation of the machine shop at Montmorency Falls, as a locomotive house, machine and paint shop, is under consideration. (Aug., pg. 348.)

**Moncton Tramways, Electricity & Gas Co.**—Owing to the taking over of the Moncton & Buctouche Ry. by the Dominion Government, a new arrangement is being made with the M.T.E. & G. Co. respecting the section of the M. & B. Ry. it operates over.

Negotiations are still in progress for the extension of the company's line to Sunny Brae, but up to Aug. 19, nothing had been settled between the company and the Sunny Brae Council. (July, 1917, pg. 286.)

**Ottawa Electric Ry.**—The Ottawa City Council is proposing to rebuild the bridge over the Rideau River on St. Patrick St., at an estimated cost of \$190,000. The O.E.R. was asked to contribute towards the cost, but it was reported Aug. 20, that

the company was not disposed to make any contribution at all, considering that its franchise has so short a term to run.

**Winnipeg Electric Ry.**—On the amended plan for the Sargeant Ave. extension submitted to the Winnipeg City Council, the line is to be carried to Dominion St., approximately 2,800 ft. The original plan

was to build only 2,200 ft.

Application was made to the city board of control, Aug. 1, for an extension on Academy Road to the Midland Ry. of Manitoba tracks, but A. W. McLimont, General Manager, stated that it was out of the question to think of extending the line this year. (Aug., pg. 348.)

## Electric Railway Notes.

The Regina, Sask., Municipal Ry. carried 171,241 passengers during the recent fair week, against 168,413 for the fair week of 1917.

North Vancouver, B.C., City Council is operating a municipal jitney service on the Lynn Valley Road between Center Road and the city limits.

The Moncton Tramways, Electricity & Gas Co. has decided to abandon for the present its car service from Moncton, N.B., to Lewisville and Humphreys Mills.

The Cape Breton Electric Co. has placed in operation, two one-man "safety" cars, received recently from the American Car Co., and which were ordered early in 1917.

The New Westminster, B.C., City Council has decided to wait and see the outcome of the litigation in Vancouver, before it takes steps to further restrict or prohibit the operation of jitneys.

The St. Thomas, Ont., City Council instructed its solicitor, Aug. 1, to take proceedings against the London & Lake Erie Ry. and Transportation Co., to recover \$8,000 for unpaid taxes and rentals.

The Windsor, Ont., City Council, on Aug. 19, refused to accede to the Sandwich, Windsor & Amherstburg Ry.'s request to release it from paying taxes levied on its property for patriotic purposes.

Men employed in Winnipeg railway yards and shops are asking for an increased night service on the Winnipeg Electric Ry., including a half hourly service between 2 and 6 a.m., when, under present arrangements, no cars are run.

Montreal Tramways Co.'s conductors were instructed Aug. 15 that the only persons entitled to free rides on the street cars are policemen and firemen in uniform, out of all the number of city employes who used to travel without payment.

North Vancouver, B.C., city authorities have taken proceedings against motor owners who used their vehicles as jitneys, and charged 25c and 50c fares, during the recent periods when the British Columbia Electric Ry. was not being operated, owing to strikes.

Jos. McGee, conductor, was found guilty in the Brantford, Ont., police court, Aug. 7, of stealing fares from the Brantford Municipal Ry. and was directed to make restitution to the extent of \$50, and to pay the costs, in which case sentence would be suspended.

The Board of Railway Commissioners has refused the town of Greenfield Park's application for changes in the Montreal & Southern Counties Ry. car schedule. The changes asked for included, among other things, the putting on of a special through car.

The Calgary, Alta., street railway department has been advised by the City Solicitor that it may collect a fee of admission to Bowness Park, if it is desired by the authorities, from every person seeking entrance, except persons residing within the Bowness limits.

The British Columbia Electric Ry. is giving a special rate, 5 tickets for 20c, to returned wounded soldiers in uniform, for

local traffic in Vancouver, New Westminster and North Vancouver. These tickets can only be obtained at the Carroll St. and Grenville St. ticket offices.

The Langley, B.C., municipal council has passed a bylaw regulating jitney traffic. The license fee is \$10 for six months; a bond for \$500 has to be carried; the total liability for any one accident is \$2,500, and the penalty for infractions of the bylaw is \$100 or 30 days in jail.

British Columbia Electric Ry. employes went out on a sympathetic strike, Aug. 2, at the call of organized labor. The mayor intervened and the street railway employes went back to work on Aug. 6. The stoppage of the car service nearly brought about a riot, returned soldiers protesting strongly.

The Winnipeg Electric Ry. dropped its belt line service, Aug. 1, and made a number of other changes which it is claimed will greatly expedite the cross city traffic. Protests were made about the change, and the city board of control, on Aug. 7, instructed the city solicitor to investigate the matter.

The Victoria City Council has under consideration a plan for the purchase of the British Columbia Electric Co.'s properties on Vancouver Island. The matter was expected to be discussed between the Council, G. Kidd, General Manager, and A. T. Goward, Local Manager, at Victoria, Aug. 21.

The Toronto Ry. has been granted leave to appeal to the Judicial Committee of the Privy Council, as to the proportion which it is to be called upon to pay the City of Toronto for the construction of the high level bridge carrying Queen St., and the Toronto Ry. tracks over the C.P.R., C.N.R. and the Don River.

As a result of a conference between officials of the New Brunswick Power Co. and the Superintendent of the St. John ferry service, a new schedule has been arranged by which there will be a close connection between the street cars and the ferry service during the greater part of the day across the bridge at the Reversing Falls.

The increased street railway fares in Edmonton, Alta., have necessitated the use of a large number of cents, and as the cent has never had much circulation in the west, the city treasurer has had to import \$1,000 worth, and on Aug. 13 it was reported that the supply was again so short that a further importation would have to be made.

The Hamilton, Ont., St. Ry. started the operation of p.a.y.e. cars on its belt line Aug. 4. This service necessitates the use of 22 cars, each with capacity for 45 passengers. We are officially advised that it is not at all likely that one man cars will be adopted in the city, the management's opinion being that they are not adapted to conditions prevailing in Hamilton.

The action of McKay vs. the City of Vancouver, to suspend the jitney elimination bylaw, a summary of which was given in our August issue, was argued before Justice Gregory, Aug. 5, who decided, Aug. 16, that he could not issue an



injunction to prevent the city prosecuting jitney-men under the prohibitory bylaw, pending the trial of the main suit as to its legality.

A number of residents of Calgary, Alta., contend that the city council should not have withdrawn the 8 for 25c tickets in the evenings on the Calgary Municipal Ry. without having first taken a vote of the people. If every matter affecting the operation of a municipal public utility had to be submitted to a vote of the people, which would be the final outcome if the claim of the residents referred to were admitted, municipal ownership would not have the slightest chance of success anywhere.

The Toronto & York Radial Ry. has bought 2 cars from the Edmonton Radial Ry., Edmonton, Alta., for its Scarboro Division, to replace those lost by fire Feb. 24. These cars were built originally by the Preston Car & Coach Co., and are standard double truck cars with 33 in. rolled steel wheels, and are equipped with electric heaters, 4 G.E. motors with K6 controllers, Westinghouse automatic air compressor, and cross seats. They are 46 ft. 3 3/4 in. long over all, and 33 ft. 3 3/4 in. long over the body.

The Regina, Sask., City Council's chairman of its street railway committee is reported to have said on Aug. 17 that one-man cars and a 7c fare will likely be the ultimate solution of the problem of financing the municipal railway. He is not in favor of one-man cars until all the possibilities of the present system of operation have been tried out. Various suggestions are before the committee, although both the 7c fare and the one-man-car proposals have been defeated for the present.

The two cars which the Brantford Municipal Ry. has ordered from the Preston Car & Coach Co. for operation on the Brantford-Paris line, as mentioned in our last issue, will be 47 ft. long over vestibule, 35 ft. over corner posts, and 48 ft. over bumpers, with a width of 8 ft. 8 ins. over sheathing. The length of the vestibule will be 6 ft. framing of steel, with straight sides, turtle back roof, vestibule sash in one piece to drop, and other sash arranged with the upper sash stationary with art glass, and the lower to drop. The interior will be arranged with a smoking compartment, all seats of the walkover type upholstered in rattan, for 50 persons. The cars will be equipped with AMM Westinghouse airbrakes and Westinghouse 101B motors with K28 controllers.

### Mainly About Electric Railway People.

D. Roche, heretofore chief clerk to General Storekeeper, Winnipeg Electric Ry., has been appointed Storekeeper.

Fred J. Pratt, for 16 years Storekeeper, Winnipeg Electric Ry., has been appointed Purchasing Agent, vice J. S. Mackenzie, appointed Assistant Treasurer.

Lawrence Palk, heretofore Assistant to General Manager, Winnipeg Electric Ry., who has been in the company's service for 14 years, has been appointed Assistant Secretary, and also Secretary of the company's subsidiary, the Winnipeg, Selkirk & Lake Winnipeg Ry. Co.

J. S. Mackenzie, heretofore Purchasing Agent, Winnipeg Electric Ry., has been appointed Assistant Treasurer, vice G. A. Henson, resigned. Mr. Mackenzie was at one time in Toronto Ry. service, going to the Winnipeg General Power Co. in 1902. When that company was amal-

gamated with the Winnipeg Electric Ry. Co. in 1906, he was appointed Purchasing Agent of the latter. Mr. Henson entered street railway service in Winnipeg in the old horse car days, and in 1890 was practically the whole office force of the horse car company there. When the horse cars were superseded by the electric ones, he went into insurance business. In 1900 he was appointed Accountant, Winnipeg Electric Ry., and Assistant Treasurer in 1915.

### Women as Street Railway Conductors.

The question as to whether women should, or should not, be employed as conductors on street cars, is causing some agitation in various communities where such a course has been suggested, but not, as yet, adopted. Arguments have been used from both ethical and eugenic viewpoints, but as a matter of fact, all such arguments fall to the ground in view of the nature of work which women have been engaged in for many years past, and at any rate without any very strong protests on either ethical or eugenic grounds from the sources from which arguments of this nature now emanate. A summary of the points against employing women as conductors, as taken from a resolution passed recently by the Toronto St. Ry. Employees Union, is covered by the statement "that it would be an injustice to women to have them train for two weeks without remuneration, for conductors on street cars, only to realize, after a short period, that, owing to the system of operation, hours of labor and the conditions under which the work is performed, they were unable to stand the strain, and that it would not be conducive to either the health or moral standing of women to have them collect fares in crowded cars, such as are found on the system."

Where this work has been undertaken by women, and it is being carried on to a large extent, in Great Britain and the U.S., as well as other countries, chiefly, it must be admitted, as a war necessity, it is being done successfully, and without any apparent ill effects. Any detrimental moral effect which there may be, is infinitely less than in many occupations in which women are now working as a war necessity, and so far as any evil physical effects are concerned, women have been engaged for generations, in work, supposed to be natural to the sex, with far greater physical dangers than acting as conductors on up to date street cars.

The Toronto Ry., as announced previously, is remodelling a number of its cars for the adoption of a prepayment system, and when these are placed in operation, it is intended to employ women as conductors on them. The work will consist merely in receiving the fares, opening and closing the door, and giving the signals for stopping and starting. While this work is being carried on, the conductor can be seated, and in fact can remain seated the whole time she is on duty, if she wishes. There will be no passing through the car to collect fares, nor can the conductor be crowded in any way, as she will be, at no time, in physical contact with the passengers.

The argument is also used, that it is not required that women be engaged in this capacity as a war necessity, as should there be a real shortage of men for the work, which does not appear to be admitted, and when the company remodels its cars to the proposed prepayment plan, "returned soldiers should be engaged to

fill vacancies as they occur, since men in broken health, or those who have lost a leg, could fill the position." The weakness of this argument is apparent, when it is contended that returned soldiers, broken in health, or minus a leg, would be able to stand the strain involved better than a woman of ordinary physical capacity.

Reports as to the actual effect of the work on women, differ to a great degree in different countries, and even in the same country, and the only way to deal with the effects is by taking individual cases. The matter cannot be dealt with, and either approved or condemned, in general. A recent report after an investigation of one of the U.S. electric railways, was entirely in favor of women engaging in such work, while a report of another system states that they are not fit for the work, that while they can perform the duties as well as men, the strain, both physical and mental, the irregular hours, and the necessity for standing for long periods, are particularly detrimental to women's health.

With the equipment now provided on the latest type of prepayment car, any physical strain on the conductor is entirely eliminated, owing to the easy manipulation of the automatic machinery operating the doors and step; and the mental strain, if it ever existed, also disappears. The irregular hours can easily be dealt with, and as shown, there is no necessity for long periods of standing.

**A Railway Without Rates.**—The Spokane & Inland Empire Rd., operating out of Spokane, Wash., is in the peculiar position of having no authorized rates. The U.S. Government assumed possession of the road Jan., 1918, and established rates entirely different from those previously in force, and after these had been in force for a certain period, the U.S. Railroad Administration turned the railway back to the company. The question has arisen, as to what rates should be charged. If the original rates, approved by the State Commission, were suspended, information is desired as to which provision of the state statutes covers the case. Again it cannot be claimed that the U.S. Railroad Administration's rates are in force, and the new rates which are being applied at present are being protested because they impose a minimum charge of 10c for less than a mile. A report by the State Public Service Commission, on the matter, concludes with the statement that the company is "in a hell of a fix." Two of the commissioners, in concurring with the report, resent the form of words used to describe the position, but the chairman says that no other words fit the occasion.

**A Common Blunder.**—The Canadian Railway War Board's Secretary made the statement recently that gasoline had increased 100% in cost since the commencement of the war. Invoices in his possession show the purchase of gasoline before the war, at 16 1/2c a gallon, and purchases of recent date at 33c a gallon. S. R. Parsons, of the Canadian Manufacturers Association, while not quoting figures, asserted that the price of gasoline had only increased 50%. Many people who ought to know better, consider that an increase such as that shown, is only 50%, because it is half of the increased price.

The Montreal Tramways Commission submitted to the Montreal City Commissioners, on July 11, a plan providing for the rerouting of cars affecting eight lines. At the date of our latest advice the plan had not been accepted either by the city or the company.



# Marine Department

## Cargo Steamship Building for Dominion Government.

### The 3,750 Ton Type of Steel Cargo Steamship.

Canadian Railway and Marine World for August contained a full technical description of the 4,300 ton type of steel cargo steamships for the Dominion Government, which are to be built under the shipbuilding policy of the Minister of Marine, Hon. C. C. Ballantyne, as first detailed in Canadian Railway and Marine World for February. Following is a description of the 3,750 ton type.

The second keel under the new shipbuilding programme was laid by the Collingwood Shipbuilding Co. at Collingwood, Ont., during the first week in June. The vessel will be of the following leading particulars:—

Length . . . . . 251 ft.  
Breadth . . . . . 43½ ft.  
Depth . . . . . 26 ft.  
Draft, loaded . . . . . 22 ft. 2 in.  
Canal draft . . . . . 14 ft.  
Speed, maximum . . . . . 9 knots  
Deadweight on load draft . . . . . 3,750 tons  
Complement officers and men, including gunners. 30

The vessel will be of the single deck type, with poop, bridge and fore-castle, straight stem, elliptical stern and subdivided into 12 water tight compartments. A double bottom 39 in. deep, with solid floors on alternate frames and on every frame forward and under the machinery will be fitted from the collision bulkhead to the after peak bulkhead, connected up in the usual way with the steam suction. The vessel will be built on the ordinary transverse system, the frames being of bulb angle spaced 24 in. apart, ample compensation being provided to the shell plating in lieu of side stringers. Bilge keels will be provided for a suitable length amidships.

The main deck, poop, bridge, and fore-castle decks will be of steel, sheathed with British Columbia fir in way of the accommodation. The cargo hatches will be arranged for the speedy handling of bulk cargoes and will be of the following dimensions:—No. 1 hatch, 20 x 18 ft.; no. 2, 24 x 18 ft.; no. 3, 24 ft. 18 ft.; no. 4, 20 x 18 ft. The usual stanchion arrangement in the holds will be dispensed with, in order to facilitate loading and unloading.

In accordance with what is now recognized practice in modern cargo vessels, the seamen and firemen will be housed under the poop deck aft, in large compartments. Separate mess rooms will be provided for the seamen and firemen, and all other requirements, such as lighting, ventilation, and sanitation, will be in conformity with the Board of Trade regulations governing the survey of masters and crew spaces. The ship's officers, etc., will be berthed in deck houses situated at the fore end of the bridge deck and alongside the engine casing, which will contain one cabin for each officer; wireless office, dining saloon, pantry, baths, water closets and the usual stores. The captain's cabin will be over the forward deck house, which will be surmounted by the navigating bridge. The galley will be placed between the engine and boiler casings. The cold chamber will be fitted on the port side, under the bridge deck aft. All the accommodation throughout will be steam heated.

The vessel will be provided with 4 derrick posts and 1 pole mast, carrying wire-

less aerials. Each derrick post will have 2 derricks fitted, capable of lifting 5 tons each. There will be 7 cargo winches, 7 x 12 in., of the Clarke-Chapman type, manufactured by the Corbet Machine Co., Owen Sound. The windlass, which will be placed on the fore-castle head, will also be of the Clarke-Chapman type, manufactured by the same firm. The steering gear will be placed at the after end of the engine room casing, inside the bridge erection. The engine will be of the ordinary horizontal type, with cylinders 8 in. diameter by 8 in. stroke. It is being manufactured by John Hastie & Co. of Greenock, Scotland. The 10 k.w. electric generating set will be placed in the engine room. The dynamo, by Vickers, Limited, Sheffield, Eng., will be coupled to a single cylinder enclosed forced lubricating engine, manufactured by Goldie & McCulloch Co., Galt, Ont. The vessel will be fitted with a 2 k.w. wireless set supplied by Marconi Wireless Telegraph Co. of Canada.

The life saving appliances will be in accordance with the Canadian Board of Steamship Inspection's requirements, and will comprise 2 lifeboats, 24 ft. x 7½ ft. x 3 ft. 2 in., and 1 dinghy, 18 ft. x 5½ ft. x 2¼ ft. The vessel will be furnished with the usual armament as required by law and provision will be made for defence from floating mines.

The main propelling engine, which will be placed about amidships, will be of the triple expansion, surface condensing type, with cylinders 18 x 30 x 50 x 36 in. stroke, having a working pressure of 180 lb. a square inch, is being built by the Collingwood Shipbuilding Co. under British Corporation survey. The h.p. and i.p. cylinders will be fitted with piston valves and the l.n. with a double ported slide valve. The air pump and bilge pumps will be worked off the main engine. An independent pair of feed pumps by G. J. Weir & Co., of Glasgow, will be provided for boiler feed purposes. The main circulating pump will be of the centrifugal type, driven by an enclosed forced lubrication engine, manufactured by the Storey Pump Co., Toronto. The main condenser will have a cooling surface of 1,350 sq. ft., and an auxiliary condenser having 500 sq. ft. of surface will be provided, for taking the exhaust from the deck winches, etc. The general service pump will be of the vertical duplex type, 10 x 6 x 12 in., and the ballast pump of similar type, 10 x 10 x 12 in. The reversing engine will be of the direct acting type, manufactured by the builders, and a separate engine will be provided for turning the main engine in port. Steam will be generated in 2 single ended boilers, 14 ft. diameter by 10¾ ft. long, designed to work under Howden's system of forced draft, and having a working pressure of 180 lb. a sq. in.

The vessel is being built to British Corporation classification and under government survey. Satisfactory progress is being made with the construction in both the hull and machinery departments, and it is anticipated that the vessel will be placed in service before the close of navigation. The Collingwood Shipbuilding Co. has been given an order for a duplicate vessel of this type, as stated in Canadian Railway and Marine World for August, the same to be completed by the

opening of navigation in 1919.

**Orders for Steamships.**—We are officially advised that the Marine Department has given the following orders for steel cargo steamships, in addition to those mentioned in our August issue:—

British-American Shipbuilding Co., Welland, Ont.—2 of 4,300 tons d.w. capacity each.

Collingwood Shipbuilding Co., Collingwood, Ont.—2 of 3,750 tons d.w. capacity each.

Davie Shipbuilding & Repairing Co., Lauzon, Que.—2 of 5,100 tons d.w. capacity each.

Tidewater Shipbuilders, Ltd., Three Rivers, Que.—2 of 3,750 tons d.w. capacity each.

This makes order for 22 vessels given to date, as follows, the tonnage stated being deadweight in each case:—

	No.	Tons each.	Total tonnage
British-American Shipbuilding Co. . . . .	2	4,300	8,600
Canadian Vickers, Ltd. . . . .	1	4,300	4,300
Canadian Vickers, Ltd. . . . .	1	8,100	8,100
Collingwood Shipbuilding Co. . . . .	4	3,750	15,000
Davie Shipbuilding & Repairing Co. . . . .	2	5,100	10,200
Port Arthur Shipbuilding Co. . . . .	2	3,400	6,800
Tidewater Shipbuilders, Ltd. . . . .	4	3,750	15,000
Wallace Shipyards, Ltd. . . . .	2	4,300	8,600
Wallace Shipyards, Ltd. . . . .	4	5,100	20,400
	22		97,000

In addition to the above, the department has agreed to give Halifax Shipbuilders, Ltd., an order for 3 steel cargo steamships of approximately 10,000 tons d.w. capacity each when its yard at Halifax, N.S., is ready to begin building. Other orders will be placed, as berths may be becoming vacant, with the shipbuilders mentioned in Canadian Railway and Marine World for March and April, and if the St. John Drydock & Shipbuilding Co. goes on with its proposed shipbuilding plant at St. John, N.B., it will also probably be given some orders.

**Wallace Shipyards, Ltd., North Vancouver, B.C.**—A quantity of steel for the vessels to be built for the Dominion Government, arrived at the yard towards the end of July, and work is reported to be approaching completion on the preparation of the additional berths, so that three vessels may be proceeded with at the one time. Railway track has been laid to connect the stores with the berths, and two large oil furnaces have been installed, one for treating angles and the other for plates. An 1,800 ft. twin angle compound compressor for the pneumatic machinery has also been installed, and other machinery includes: 4 1¼ in. punches, an overhead monorail system and a 4,800 ton steel carrier.

**Steam Navigation Co. of Canada, Ltd.,** has been incorporated under the Dominion Companies Act, with \$2,500,000 capital and office at Montreal, to carry on a general transportation business, with power to own and operate steam and other vessels, and other transportation facilities. The incorporators are connected with a legal firm in Montreal, but it is said that the Canadian registry is chiefly for holding purposes, local and U.S. interests being concerned.



# Cargo Steamship Building in Canada for British Government.

**Additional Orders.**—Reference was made in our last issue to persistent rumors that the Imperial Munitions Board was about to place additional orders for steel steamships for the British Government. Wooden steamships should have been mentioned, instead of steel ones, as it was definitely arranged early this year that no further orders would be given in Canada for steel steamships for the British Government, and that as those under order were completed, the berths would be occupied in building steel steamships for the Dominion Government. If any further orders are placed for the British Government, they will be for wooden

Apr. 11, 1918—	War Comox, New Westminster Construction & Engineering Co., New Westminster, B.C. ....	3,080
Apr. 11, 1918—	War Masset, Foundation Co., Victoria, B.C. ....	3,080
Apr. 13, 1918—	War Tyee, Pacific Construction Co., Coquitlam, B.C. ....	3,080
Apr. 25, 1918—	War Haida, Cameron-Genoa Mills, Victoria, B.C. ....	3,080
Apr. 27, 1918—	War Cayuse, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080
May 11, 1918—	War Mohawk, Quinlan & Robertson, Ltd., Quebec, Que. ....	3,080
May 11, 1918—	War Sioux, Port Arthur Dredging Co., Port Arthur, Ont. ....	3,080
May 21, 1918—	War Atlin, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080
May 23, 1918—	War Tatla, Western Canada Shipyards, Ltd., Vancouver, B.C. ....	3,080

July 27, 1918—	War Ottawa, Fraser, Brace & Co., Montreal ....	3,080
Aug. 5, 1918—	War Chilkat, Cameron-Genoa Mills Shipbuilders, Victoria, B.C. ....	3,080

Total, 30 wooden steamships.....92,400  
Total deadweight tonnage of 14 steel and 30 wooden steamships launched, 158,300.

**Vessel Registry.**—A report from Victoria, B.C., July 31, says that all wooden steamships built on the Pacific coast to the Imperial Munitions Board's orders for the British Government will be registered at the port of construction, in the name of the British Minister of Shipping, instead of in London, Eng. We are advised that any registration in Canada, if it takes place, is of a temporary character, the vessels proceeding overseas under special license, and then being registered in England.

**British-American Shipbuilding Co., Welland, Ont.**—The first of the three steel steamships to be built by this company for the British Government, under order from the Imperial Munitions Board, was launched Aug. 21, and christened War Weasel by Mrs. R. W. Leonard of St. Catharines, Ont. She is of steel throughout, 3,500 tons deadweight capacity, and has the following dimensions: length 261 ft., breadth 43½ ft., depth 23 ft.

**Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.**—With the launching of the s.s. War Stikine by this company, July 27, its contract for 4 wooden steamship hulls with the Imperial Munitions Board was completed. To signalize this, the launching was turned over to the employees, and a committee was formed to handle it. The company was formed in 1916, and its first vessel, an auxiliary powered schooner, was launched Aug. 15 of that year, and named Margaret Haney, for Canada West Coast Navigation Co.,



Steel cargo steamship Alaska, for British Government, leaving J. Coughlan & Sons yards at Vancouver for trial trip.

steamships, but so far there is no indication that any such orders will be given.

**Launchings of Steamships.**—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to July 31, giving in each case the date of the launching, the name of the steamship, the name of the builder and the deadweight tonnage:—

June 12, 1918—	War Skeena, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. ....	3,080
June 13, 1918—	War Seneca, Quinlan & Robertson, Quebec, Que. ....	3,080
June 14, 1918—	War Edensaw, New Westminster Construction & Engineering Co., B.C. ....	3,080

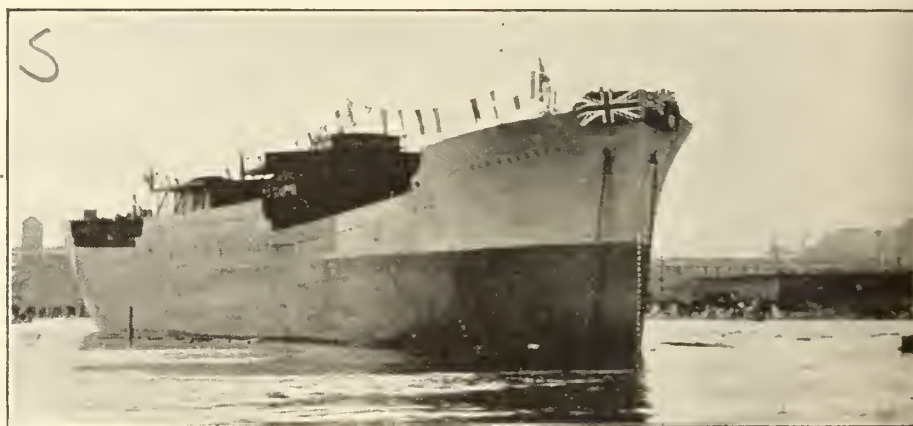
## Steel Steamships.

May 18, 1917—	War Dog, Wallace Shipyards North Vancouver, B.C. ....	4,500
July 9, 1917—	War Wasp, Nova Scotia Steel & Coal Co., New Glasgow, N. S. ....	1,800
Aug. 19, 1917—	War Fish, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	4,300
Nov. 3, 1917—	War Dance, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
Mar. 16, 1918—	War Campi, J. Coughlan & Sons, Vancouver, B.C. ....	8,800
Mar. 23, 1918—	War Power, Wallace Shipyards, North Vancouver, B.C. ....	4,600
Apr. 3, 1918—	War Isis, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
May 8, 1918—	War Wizard, Collingwood Shipbuilding Co., Collingwood, Ont. ....	2,900
May 21, 1918—	War Bee, Nova Scotia Steel & Coal Co., New Glasgow, N.S. ....	2,400
May 27, 1918—	War Osiris, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
June 8, 1918—	War Earl, Canadian Vickers Ltd., Montreal ....	7,000
June 29, 1918—	War Duchess, Canadian Vickers Ltd., Montreal ....	7,000
July 20, 1918—	War Hathor, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
July 29, 1918—	War Charger, J. Coughlan & Sons, Vancouver, B.C. ....	8,800

Total, 14 steel steamships.....65,700

## Wooden Steamships.

Dec. 28, 1917—	War Songhee, Foundation Co., Victoria, B.C. ....	3,080
Jan. 4, 1918—	War Nootka, Western Canada Shipyards, Vancouver, B.C. ....	3,080
Jan. 24, 1918—	War Yukon, Cameron-Genoa Mills, Victoria, B.C. ....	3,080
Feb. 16, 1918—	War Puget, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080
Mar. 6, 1918—	War Selkirk, Western Canada Shipyards, Vancouver, B.C. ....	3,080
Apr. 10, 1918—	War Caribou, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080



Steel cargo steamship War Charger, for British Government, just after launching by J. Coughlan & Sons, Vancouver.

June 15, 1918—	War Babine, Foundation Co., Victoria, B.C. ....	3,080
June 24, 1918—	War Nicola, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080
June 28, 1918—	War Quebec, Quebec Shipbuilding & Repairing Co., Quebec, Que. ....	3,080
June 29, 1918—	War Ontario, Toronto Shipbuilding Co., Toronto ....	3,080
July 5, 1918—	War Huron, Fraser, Brace & Co., Montreal ....	3,080
July 5, 1918—	War Erie, Fraser, Brace & Co., Montreal ....	3,080
July 6, 1918—	War Casco, Western Canada Shipyards, Ltd., Vancouver, B.C. ....	3,080
July 12, 1918—	War Sumas, Pacific Construction Co., Port Coquitlam, B.C. ....	3,080
July 24, 1918—	War Squash, Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	3,080
July 27, 1918—	War Gaspe, Quinlan & Robertson, Quebec, Que. ....	3,080

and subsequently 5 other similar vessels were built for the same interests. The first of the wooden steamships for the Imperial Munitions Board was launched Jan. 24, 1918, and named War Yukon, the total cargo tonnage of all vessels being 26,350 tons. The christening of the s.s. War Stikine was performed by Miss H. E. McLaughlin, one of the stenographers, who was presented with a souvenir. In a speech subsequent to the launching, J. H. Price, President of the company, stated that he was not in a position to state particulars of the company's future, but it could be taken for granted that within a month, the yard would be in full swing again.

Canadian Vickers, Ltd., Montreal,



launched the s.s. Samnanger, Aug. 3, Capt. H. Jonassen, Bergen, Norway, officiating. This is the Canadian Vickers third launching since the opening of the St. Lawrence navigation season. The Samnanger is a sister vessel of the s.s. Porsanger, which was launched from the same yard, Nov. 29, 1917, and handed over to Furness, Withy & Co., early this year, for operation on behalf of the British Government. She has been built to classify 100 A1 at Lloyd's, and also for Det Norske Veritas. Her dimensions are: length over all 394½ ft., breadth extreme 49¼ ft., depth moulded 30 ft.; deadweight tonnage 7,000; gross tonnage 4,670; load draft 24 ft. The hull is fitted with double

are 5 large cargo hatches, 11 steam winches, powerful steam windlass, steam and hand steering gear, 2 steel masts, the top masts being made telescopic to suit bridges across the Manchester (Eng.) ship canal.

**J. Coughlan & Sons, Vancouver, B.C.**—The second steel steamship to be built by this firm, for the British Government, under orders from the Imperial Munitions Board, and the third launched in this yard, was sent down the ways, July 27, and named War Charger, being christened by Miss Grace Coughlan. This launching would have taken place considerably earlier, had it not been for the disastrous fire at the yard a few weeks ago. She is

**Fraser, Brace & Co., Ltd., Montreal.**—The s.s. War Ottawa, the third of the four vessels on order for the Imperial Munitions Board, was launched July 27, the christening being performed by Mrs. C. Fraser. The fourth vessel, which was expected to be launched toward the end of August, is to be named War Niagara.

**New Westminster Construction & Engineering Co., New Westminster, B.C.**—A press report states that the launching of the wooden hulls War Kitimat and War Ewen, for the Imperial Munitions Board, have been postponed, owing to lack of accommodation at the assembling plants. These two vessels will complete the board's order with this company.

**Port Arthur Shipbuilding Co., Port Arthur, Ont.**—The s.s. War Hathor, which was launched July 20, as mentioned in our last issue, was expected to sail from Port Arthur, about the end of August, for delivery at Montreal by Sept. 1. Two other similar vessels are nearing completion for the Imperial Munitions Board, the War Horus, which will be launched about Sept. 20, and the War Karma, to be launched about Oct. 10. These will complete the Imperial Munitions Board's order for 6 steel steamships for the British Government.

**Quinlan & Robertson, Ltd., Limoilou, Que.**—The third of the wooden steamships building at this yard for the Imperial Munitions Board, was launched July 27, and christened War Gaspé. The christening was performed by Mrs. Bilodeau, wife of the yard superintendent. After launching, the vessel was towed to the Louise Basin, where her machinery is to be installed.

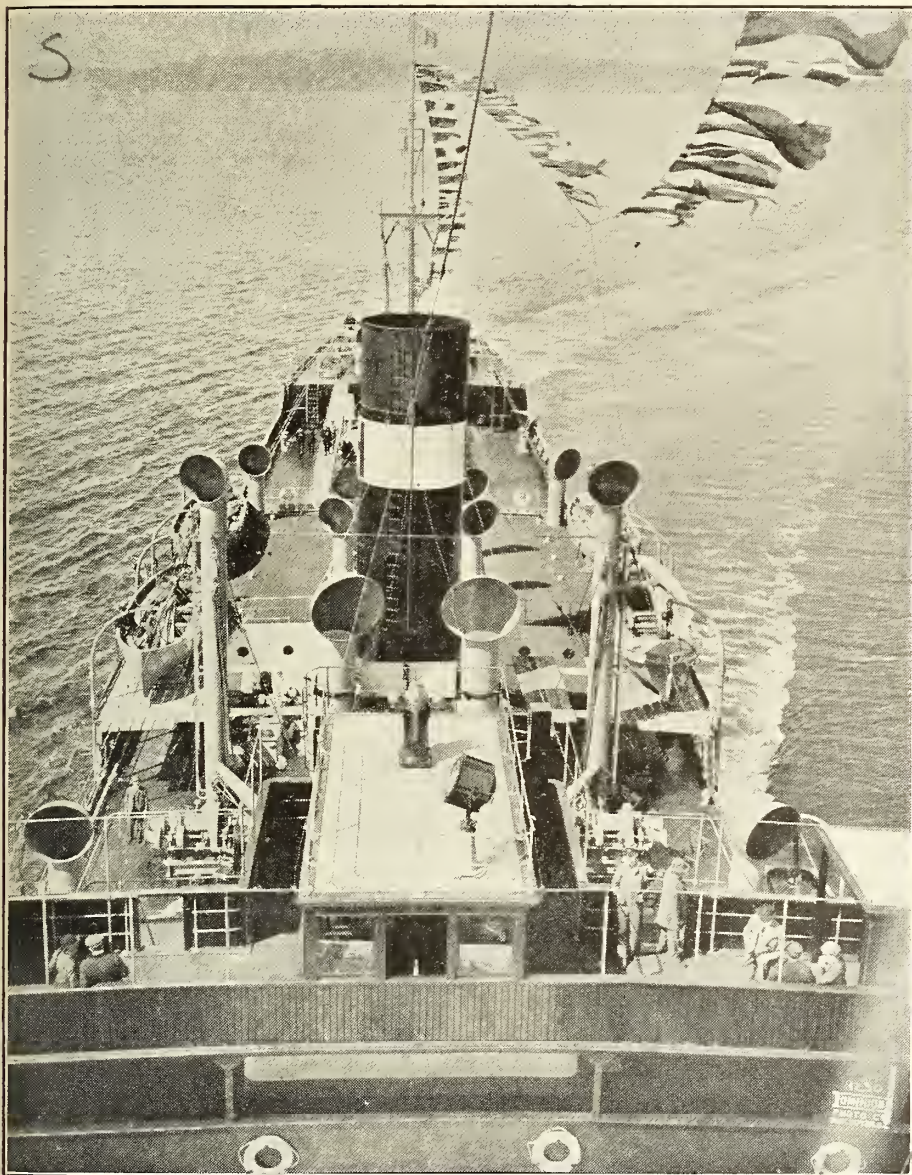
**Western Canada Shipyards, Ltd., Vancouver, B.C.**—The s.s. War Chilkat, the fifth of the 6 vessels ordered for the British Government by the Imperial Munitions Board, was launched Aug. 5, and was christened by Mrs. W. C. Ditmars of Vancouver. The last of these vessels, which is to be named War Tatoosh, was expected to be launched before the end of August.

One of our contemporaries announced in its August issue, that the company will establish a plant shortly. It is to be presumed that the vessels already launched just grew.

**Sarnia Coal & Dock Co., Ltd.,** has been incorporated under the Dominion Companies Act, with \$20,000 capital and office at Sarnia, Ont., to carry on a coal and ice dealing business, and in connection therewith to own and operate steam and other vessels, and other means of transportation by land and water. Peter Paton, who resigned recently as Purchasing Agent, Canada Steamship Lines, Ltd., Montreal, to enter private business in Sarnia, is chiefly interested.

**The Nova Scotia Transportation Co., Ltd.,** has been incorporated under the Dominion Companies Act, with capital of 1,000 shares of no nominal or par value, provided that business be carried on with a capital of \$5,000. The head office is at Toronto, and power is taken to own and operate steam and other vessels and to carry on a general navigation, manufacturing and forwarding business.

**Lavonia Ship Co., Ltd.,** has been incorporated under the New Brunswick Companies Act, with \$24,000 capital stock and office at Memramcook, N.B., to carry on a shipowning and management business. The incorporators are:—R. McManus, Moncton, N.B., contractor; J. W. McManus, Memramcook, civil engineer; and E. E. McManus, Memramcook, merchant.



Steel cargo steamship Alaska, for British Government, built by J. Coughlan & Sons, Vancouver, on trial trip.

bottom fore and aft, subdivided into 14 separate water tight compartments, with total water ballast capacity of 1,630 tons. The officers' accommodation is in deck houses on the bridge, and the crew are berthed in the poop deck in separate two-berthed rooms. All accommodation is large and roomy and well ventilated and lighted. The vessel is provided throughout with Chadburn's ship telegraphs, manufactured by Taylor & Arnold, Ltd., Montreal. The propelling machinery consists of triple expansion engines, 2 main boilers and large donkey boiler. There

of 8,000 tons d.w. and is the second of 9 similar vessels to be built for the British Government under the Imperial Munitions Board orders.

The s.s. War Camp, which was launched Mar. 16, was scheduled for her trials during August.

**Foundation Co., Victoria, B.C.**—The fourth wooden steamship hull, built for the British Government under the Imperial Munitions Board orders, was launched at this year, Aug. 8, and named War Camchin. The company has one more hull to complete before finishing the board's order.



## Atlantic and Pacific Ocean Marine.

The Imperial Oil Co.'s oil tank s.s. Lux Blanca was torpedoed off the Atlantic coast, Aug. 5.

The Japanese s.s. Canada Maru, which ran aground on the rocky ledges near

mitted suicide, because he feared the possible disgrace which might attach to the casualty.

Bowring & Co.'s s.s. El Lobo was dry-docked at Esquimalt recently, for examination, after having struck a submerged reef off the Peruvian coast in July. It is reported that repairs, which will cost ap-

Sicilian collided in Quebec harbor, Aug. 6, with the Canadian Northern Ry. car ferry Canora, which was scheduled to leave Quebec some time during August, for the Pacific coast, and did considerable damage above the water line. An action has been entered in the Admiralty Division of the Exchequer Court, on behalf of the owners, the Canadian Northern Ry., and the builders, the Davie Shipbuilding & Repairing Co., Lauzon, Que., for \$80,000, and a warrant was issued for the vessel's arrest.



Launching of Wooden Cargo Steamship, War Ottawa, for British Government, by Fraser, Brace & Co.

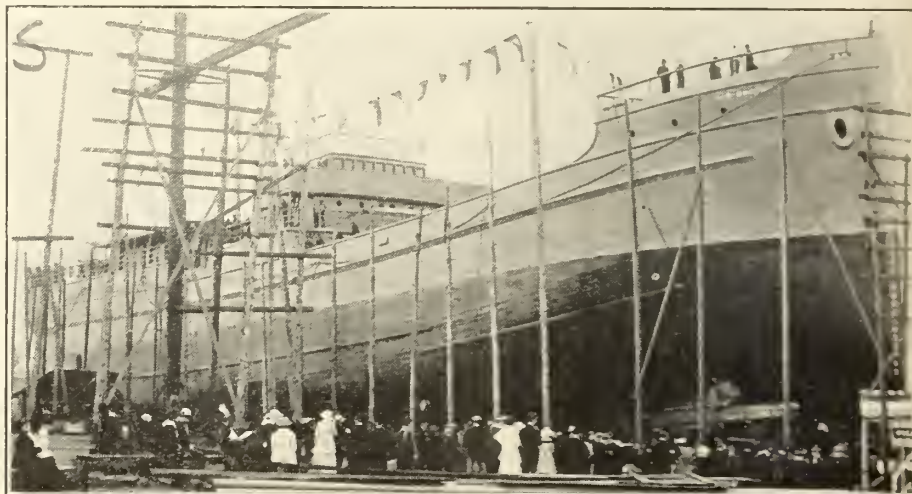
Cape Flattery, was released Aug. 6, and proceeded to Victoria.

The s.s. Key West, under time charter to Canadian Pacific Ocean Services, Ltd., for the Oriental trade, has been repaired at Victoria by Yarrows, Ltd., after having damaged her main air pump gear, when two days out of Vancouver recently.

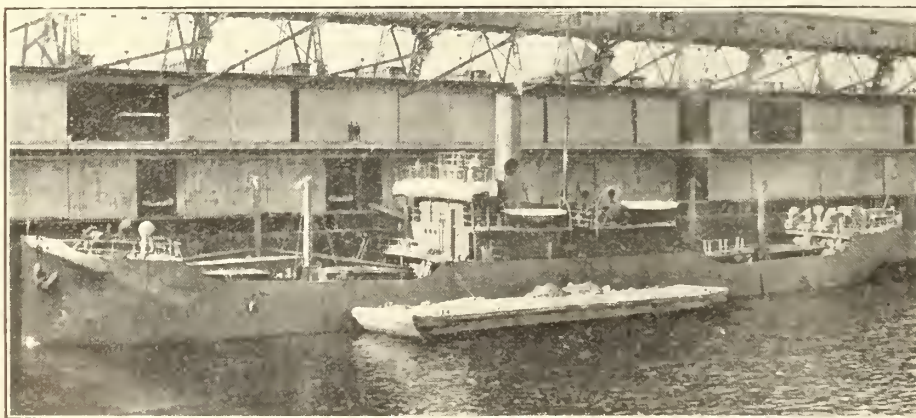
The s.s. Celtic Prince, which ran ashore recently at St. Barnabe Island, St. Lawrence River, was taken to the dry dock at Lauzon, Que., early in August, where she will be repaired by the Davie Shipbuilding & Repair Co.

The British Court of Appeal has dismissed the appeal of the owners of the s.s. Kingsway, from the judgment confirming the report of the Liverpool District Registrar, in assessing the amount payable by them to the Allan Line as owners of the s.s. Grampian, for damages sustained in a collision in the River Mersey, May 14, 1915.

The Japanese steamship Canada Maru,



Wooden cargo steamship War Babine, for British Government, just prior to launching by Foundation Co. of British Columbia, at Victoria.



Steel cargo steamship War Isis, built for British Government by Port Arthur Shipbuilding Co. The photograph, taken at Montreal, shows the steamship loaded with grain and ready for sea.

which ran ashore near Cape Flattery, late in July, was released by the salvage tug Salvor, Aug. 5, and proceeded to Victoria, B.C., under her own steam, for examination. It was announced Aug. 7, that Capt. Y. Yamomuto, master of the vessel, com-

proximately \$70,000, cover the renewal of about 37 plates, the straightening of 70 frames, and the repair of 4 bulkheads. It is expected that the contract will be given to Yarrows, Ltd.

Canadian Pacific Ocean Services' s.s.

## Maritime Provinces and Newfoundland.

The Cape Breton Electric Co.'s ferry, Electronic, grounded near Chapel Island, off Sydney, N.S., Aug. 4. The damage was slight.

The Dominion Public Works Department is receiving tenders to Sept. 4, for the construction of a breakwater, skidway and boat shed at Lower Kingsburg, N.S.

The Dominion Public Works Department has awarded a contract for improvements to the harbor at Inverness, N.S., as outlined in our last issue, to Reid & Archibald, Granville Ferry, N.S.

It is reported that a U.S. syndicate has

laid proposals before the Louisburg, N.S., town council, for the construction of a dry dock there. The site mentioned is to the west of the Dominion Coal Co.'s property on the water front. The proposal will be submitted to the ratepayers.

The French Government has issued a writ against the Belgian s.s. Imo for \$2,000,000, in respect of the explosion of the s.s. Mont Blanc in Halifax harbor, Dec. 6, 1917, and a counter claim has been entered by the owners of the s.s. Imo. The case will be heard by Admiralty Court at Halifax, N.S.

The Strait of Canso Ferry Co. has purchased the s.s. Chignecto to replace the s.s. Arcadia, which it sold recently to Hendrys, Ltd., Halifax, N.S. The Chignecto was built at Port Greville, N.S., in 1908, and is screw driven by engine of 16 n.h.p. Her dimensions are: length 78.6 ft., breadth 17.8 ft., depth 7.2 ft.; tonnage, 86 gross, 36 register.

The Newfoundland schooner Gladys M. Hollett, 159 tons, which was attacked by a German submarine, Aug. 9, when bound from Twillingate, Nfld., for New York, was subsequently towed into port. The bomb placed on board, though having



exploded, failed to sink her. She will easily be righted and repaired.

A German submarine which has been operating off the Atlantic coast, seized the North Atlantic Fishing Co.'s trawler *Triumph*, about Aug. 20, and after equipping her with guns proceeded to harass the fishing fleet off the North Atlantic banks. Several fishing schooners have been torpedoed, as well as the large schooner *Dornfontein*, recently built in New Brunswick, and which had sailed on her maiden voyage to South Africa. It is reported that six submarines are working along the coast, with the avowed in-

ment of hands owing to the scarcity of labor, and the abnormal demands for wages.

There was a considerable decrease in the traffic passing through the Lachine canal during July, as compared with July, 1917. The chief decrease was in grain, of which 1,130,932 bush. passed through in July, 1918, compared with 2,998,051 bush. in July, 1917. The coal carried was 344,559 and 335,039 tons for the same periods respectively.

It was announced recently that the shipping of trans-Atlantic freight was too concentrated at Montreal during the cur-

## Ontario and the Great Lakes.

The U.S. s.s. *Wiley M. Egan*, which sank in the Welland Canal, near the M.C. R. swing bridge south of Welland, July 15, was raised Aug. 6, and towed to Port Colborne.

The Webster Steamship Co.'s s.s. *Muriel W.*, which grounded at Gabriels Point, near Port Colborne, July 30, while bound from Erie to Montreal with coal, was released Aug. 4, after lightering about 2,000 tons of coal.

The s.s. *John Webster*, which was built in the U.S. in 1917, for ferry service between Morristown, N.Y., and Brockville, Ont., is stated to have been requisitioned by the U.S. Government for service on the Erie Canal between Buffalo and Troy, N.Y.

The C.P.R. Great Lakes passenger service will close for the season, by the sailings of the steamships *Assiniboia* and *Keewatin* from both ends of the Port McNicoll route, Sept. 28, and of the s.s. *Manitoba* from Owen Sound, Sept. 30, and *Fort William* and *Port Arthur*, Oct. 3.

The Dominion Marine Department received tenders to Aug. 30, for breaking ice in the harbors of Port Arthur and Fort William, Thunder Bay, Lake Superior. The tenders cover periods of 5 and 10 years, the price for the work to be quoted for each year in either case.

The Marine Department has arranged with the Marconi Wireless Telegraph Co. to have the Great Lakes radiotelegraph stations broadcast weather forecasts from the stations at Toronto, Midland, Kingston, Sarnia, Sault Ste. Marie and Port Arthur, as they are received from the Meteorological Observatory at Toronto.

The Muskoka Lakes Navigation and Hotel Co.'s steamboat *Kenozha* was destroyed by fire while at her dock at Lake Joseph, Aug. 13. She was built at Gravenhurst, Ont., in 1883, and was screw driven by engine of 16 n.h.p. Her dimensions were: length 100.8 ft., breadth 18.2 ft., depth 6.2 ft.; tonnage, 225 gross, 124 register.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for July, as follows:—Lake Superior, 602.26 ft.; Michigan and Huron, 581.92; St. Clair, 575.98; Erie, 572.58; Ontario, 246.85. Compared with the average July levels for the past 10 years, Lake Superior was 9.20 ft. below; Michigan and Huron, 1.05 ft. above; Erie, 0.27 ft. below, and Ontario 0.09 ft. below.

## Manitoba, Saskatchewan and Alberta.

The s.s. *Kenora* is being operated for excursion parties on the Red River between Winnipeg and Lake Winnipeg. She was owned formerly by the Rainy River Navigation Co., Fort William, Ont., and was sold about two years ago to Alex. Mackenzie, Winnipeg, and is now registered in the name of John F. Wallar, Winnipeg. We have been informed recently that negotiations are in progress which may lead to her being sold again for Pacific coast service, which would necessitate her dismantling and being shipped to the coast overland. She was built at Kenora, Ont., in 1897, and is screw driven by engine of 38 n.h.p. Her dimensions are: length 119.9 ft., breadth 28 ft., depth 8.3 ft.; tonnage, 486 gross, 269 register.



Wooden cargo steamship, *War Sumas*, for British Government, just prior to launching by Pacific Construction Co., at Port Coquitlam, B.C.

tention of destroying the fishing fleets. The protection of the coast line is under U.S. Navy jurisdiction, and the proper steps are being taken to deal with the menace.

## Province of Quebec Marine.

The St. Lawrence Shipping & Trading Co.'s s.s. *Guide* sailed from Quebec, Aug. 2, for Lower St. Lawrence ports with a general cargo. It is said that she was compelled to go without a full comple-

ment season. This was regarded as detrimental to the interests of the port of Quebec, and the matter was taken up with the Imperial authorities, with whom the control at present rests. It is now stated that from enquiries which have been instituted at Quebec regarding the labor situation, two vessels a week can be handled, and should additional vessels require to be handled there, other local labor now engaged elsewhere would be recalled. It has since been announced that two steamships a week will be loaded at Quebec until the close of St. Lawrence navigation.



## British Columbia and Pacific Coast.

Canada West Coast Navigation Co.'s auxiliary schooner Malahat has loaded lumber at Victoria, and sailed for Iquique, Chile.

The controlling interest in the British Columbia Marine Railway Co., Vancouver, held by G. G. Bushby, has been sold to I. Hopkins, J. K. McKenzie and associates.

The B.C. Government is reported to have purchased a sea-going steam tug in Seattle, Wash., for the Pacific Great Eastern Ry. service between Vancouver and Squamish.

The Dominion Public Works Department, received tenders, to Aug. 24, for repairs to the wharf at Victoria, and for the construction of a float at Hardy Bay, and also to Aug. 31, for repairs to the wharf at Tofino, Comox-Alberni District.

The C.P.R. discontinued the trips of the s.s. Princess Alice in the B.C. Coast Service, Aug. 10, and this necessitated changes in the sailing dates of the s.s. Princess Sophia, these being fixed for Aug. 17, 27, Sept. 7, 17, 28, Oct. 8, 19, 29, from Vancouver.

The channel in the First Narrows at Vancouver, has been dredged to a little over 900 ft. wide, with an average depth of 32 ft. at low tide. The cut on the north side of the Narrows and Parthia Shoal has been dredged to a depth of 35 ft. at low water. The sweeping of the shoal has been completed and there is a least depth of 22 ft. there at low water, with the exception of a point on the south side, where it is 29 ft.

The C.P.R. s.s. Tees is reported to have been bought by the British Columbia Salvage Co., to replace the s.s. Salvor, sold recently for the trans-Pacific trade. It is stated that she will be overhauled for salvage service, and renamed Salvor. She was built at Thornaby, Eng., in 1893, and is screw driven by engine of 95 n.h.p. Her dimensions are: length 165 ft., breadth 26 ft., depth 10.8 ft.; tonnage, 679 gross, 441 register.

The British Columbia Salvage Co.'s s.s. Salvor is reported to have been sold to Powell Davies, Montreal, for service between Vancouver and Australasian ports. It is said that she is to be overhauled and made suitable for freight service, when her name will be changed. She was built at Govan, Scotland, in 1869, and was formerly known as Danube. She is screw driven by engine of 65 n.h.p., and her dimensions are: length 215.6 ft., breadth 27.7 ft., depth 20.7 ft.; tonnage, 988 gross, 621 register.

The Union Steamship Co. of British Columbia is reported to have sold its s.s. Comox to the Gulf of Georgia Towing Co. She has been operated for several years on the logging camp and cannery routes out of Vancouver, it is now stated that she will be converted for towing purposes. She was built at Vancouver in 1891, the steel plates and frames having been shipped from England. She is screw driven by engine of 24 n.h.p., and her dimensions are: length 101 ft., breadth 18.1 ft., depth 5.2 ft.; tonnage, 101 gross, 60 register.

**Increase in Charges for Elevating Grain.**—The Board of Grain Commissioners has increased the charges for elevating grain from \$4 to \$4.35 per 1,000 bush., following an increase of from \$3 to \$4. The Dominion Marine Association has entered a protest against the latest increase.

## Shipbuilding in Canada During 1918.

"Canada's War Efforts, 1914-1918," issued recently by the Director of Public Information, contains the following, under the head of "Shipbuilding":—

tracts in Canada, on behalf of various governments, for a number of submarines for the Imperial Government, as well as several submarines for the Italian and

Ships Which Have Been Launched Since Jan. 1, 1918, or Will Be Launched Before Dec. 31, 1918.

	Steel vessels.				Deadweight carrying capacity (approx.).	Wooden vessels.				Deadweight carrying capacity (approx.).
	Atlantic Coast shipyards.	Great Lakes shipyards.	Pacific Coast shipyards.	Total.		Atlantic Coast shipyards.	Great Lakes shipyards.	Pacific Coast shipyards.	Total.	
Built to Imperial Munitions Board order .....	5	18	11	34	179,800	14	4	27	45	138,600
Built to Marine Department order .....	4	4	3	11	48,000	..	..	..	..	..
Built under private contract...	8	5	1	14	62,400	..	..	8	8	17,800
Total .....	..	..	..	..	290,200	..	..	..	52	156,400
Grand total: Ships.....										112
Tonnage (approximate deadweight carrying capacity).....										446,600

The above figures do not include a large number of small craft of less than 1,000 tons building at present, such as trawlers, drifters, small schooners, etc.

In connection with the government shipbuilding programme, 20 ships, with a gross tonnage of 55,000, are under construction under contracts entered into by the Marine Department. Seven will be delivered during 1918, the remainder in 1919.

The Naval Service Department, since the outbreak of the war, has placed con-

Russian Governments; about 550 motor submarine chasers for the Imperial Government; about 36 motor submarine chasers for the French Government; a number of steel lighters, shipped in "knock-down" form, for the Imperial Government's use in Mesopotamia, and a large number of trawlers and drifters for the Imperial Government.

## Mainly About Marine People.

**K. J. Burns**, Assistant General Freight and Passenger Agent, Great Northern Ry., Vancouver, B.C., is reported to have resigned to enter Canadian Robert Dollar Co.'s service there.

**Capt. J. R. Grauer**, master of the Gulf of Georgia Towing Co.'s tug Ellison, died at Vancouver, B.C., July 28, aged 54. He came to Canada from Norway in 1892, and had since been engaged on vessels plying out of Vancouver.

**Capt. G. P. Mackay**, Treasurer of the Lake Carriers' Association, Cleveland, Ohio, died there, Aug. 5, aged 80, after a long illness. He was connected with the Lake Superior trade for many years, and was well known throughout the Great Lakes.

**Capt. L. F. Davison**, Assistant Shore Superintendent, Canadian Pacific Ocean Services, Ltd., Vancouver, B.C., is reported to have been appointed master of the company's s.s. Monteagle, vice Capt. A. J. Hailey, who has been given extended leave of absence on account of ill health.

**Hon. C. C. Ballantyne**, Minister of Marine, was a guest at the Canadian Pay Corps dinner in London, Aug. 13. One press dispatch credits him with plainly hinting at the coming creation of a Canadian navy, and another report says he expressed the belief that Canada would have a maritime unit of its own shortly, working in harmony with the Admiralty.

**E. S. Thompson**, who retired as Passenger Manager, Allan Line, Liverpool, Eng., recently, after 40 years service, was presented with a silver tray and a cheque by a number of transportation friends. On account of Mr. Thompson's unavoidable absence, W. Baird of Canadian Pacific Ocean Services, Ltd., which now owns the

Allan Line, acted as the recipient.

**G. M. Bosworth**, Vice President (Traffic), C.P.R., and Chairman Canadian Pacific Ocean Services, Ltd., has retired from the former position, to devote his whole time to the duties of the latter position. Fuller particulars and biographical data will be found under Transportation Appointments and Mainly About Railway People in another part of this issue.

**Sir George Gibbons**, ex-Chairman of the Canadian section of the International Waterways Commission, died at the Royal Victoria Hospital, Montreal, Aug. 8, following an operation. He was born at St. Catharines, Ont., July 2, 1848, and educated there and at Toronto. He was admitted to the bar in 1869, and engaged in practice in London, Ont. He was engaged in the negotiations between Great Britain, Canada and the U.S., dealing with boundary waters, which led to appointment of the International Waterways Commission, and he was Chairman of the Canadian Section from 1905 to Nov. 10, 1911.

**Coals, Limited**, the incorporation of which was mentioned in our last issue, was formed to take over the coal handling plants owned formerly by Wilson-Pater-son Co., on the Lachine Canal basin and at Casgrain St., Montreal, on the C.P.R., and the new company is closely allied with the Ogdensburg Coal & Towing Co., and the Century Coal & Coke Co. The head office is at 134 McCord St., Montreal, and W. L. McDougald is President, F. F. McCord, Vice President, and G. S. McCree, Secretary-Treasurer. It is reported that on the completion of organization, interests associated with Canada Steamship Lines, Ltd., will be represented on the board.



## General Shipbuilding Notes Throughout Canada.

**British-American Shipbuilding & Engineering Co., Vancouver, B.C.**—It is reported from Vancouver, that contracts have been signed in London, Eng., for the construction by this company, of 20 wooden cargo steamships for Norwegian interests. The site of the plant is on the old Kitsilano Reserve, and it is said that 8 ways are to be laid down at once. The original plans showed 8 building slips, machine shops, blacksmith shop, mould lofts, etc., and a composite type of vessel is to be built. As announced in our May issue, the company has been granted an export permit to build 20 vessels for Norway.

**Canadian Car & Foundry Co., Fort William, Ont.**—The first of the 12 mine sweepers which are under construction by this company at Fort William, Ont., for the French Government was launched

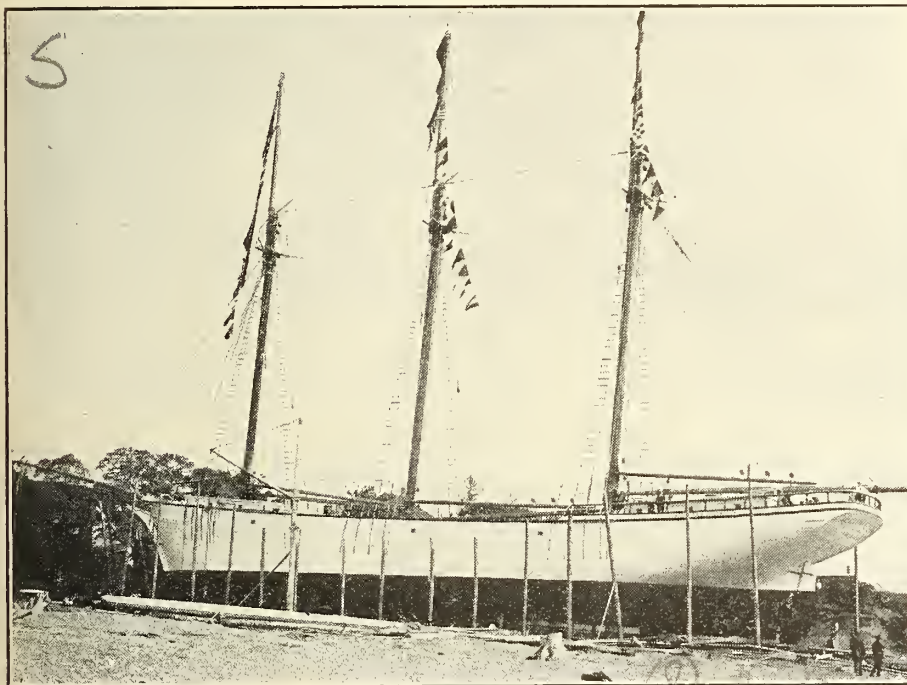
ways are to be laid down and the construction of 3 sailing vessels of 1,500 tons each commenced as soon as possible, for Norwegian interests. Two of these vessels are said to be for H. C. Hansen, and the third for the Porsgrund Steamship & Sailing Co., all of Porsgrund, Norway. Orders for another two vessels for the same interests are expected. Mention was made in our last issue of the negotiations then proceeding for the acquisition of a site for shipbuilding purposes by Chris. Cholberg, who is now mentioned as Manager of the new company.

**Comeauville Shipbuilding Co., Comeauville, N.S.**—A three masted schooner, 449 tons gross and 385 tons register, was launched at this yard, Aug. 8. This is the fourth vessel turned out by this company, but the first from this yard, the other three having been launched at

of shipbuilding berths throughout the Dominion as they became vacant. In presenting these details, we said: "The Davie Shipbuilding Co., Lauzon, Que., will have two berths available in August, and two additional before the close of navigation. It is expected to place contracts with this company as berths become vacant, for steamships of 3,000 tons deadweight capacity each. Delivery of the first of these is expected before the close of navigation this year, and of the balance during the summer of 1919."

We were officially advised, Aug. 15, that an order had been given the Davie Co. by the Marine Department for 2 steel steamships of 5,100 tons d.w. each. There appears to be no confirmation of the statement that the company is negotiating a contract for steel steamship building for U.S. interests, and under the existing circumstances, it scarcely seems likely.

**Ernst Shipbuilding Co., Mahone Bay, N.S.**—The schooner William Duff, built in this yard, was completed and ready for



The schooner Celina K. Goldman, built by St. Martins Shipbuilding Co., St. Martins, N.B., for British Colonies Transportation Co., before and after launching.



July 29, and the second on July 31. These vessels are 143 ft. over all, 135 ft. between perpendiculars, moulded breadth 22½ ft., moulded depth to main deck 13¼ ft., to quarter deck 14¾ ft. They have a displacement of 630 tons, and have a freeboard (Lloyd's) of 15 in.

**Cape Breton Shipbuilding Co., Johnstown, N.S.**, has under construction a three masted schooner of 400 tons, which has been sold. The head office is at North Sydney, the shipbuilding yard being at Johnstown, and is in charge of A. Finlayson, as Managing Director. The officers are:—President, F. L. Kelly; Vice President, D. H. McDougall, President, Nova Scotia Steel & Coal Co.; Managing Director, A. Finlayson, formerly railway contractor in the west; Treasurer, W. Hackett; Secretary, N. A. McMillan. Other directors: G. W. Kyte, C. Mackenzie, R. T. Sainthill and R. Musgrave.

**Cholberg Ship Co., Victoria, B.C.**—It was reported that work would be commenced during August on laying out of a shipbuilding yard in the Victoria inner harbor, in the Mud Bay section of the Songhees reserve. It is stated that three

Meteghan. It is said that she has been sold to Newfoundland parties. Another schooner is well under way, and when launched will be named Edward L.

**J. Coughlan & Sons, shipbuilders, Vancouver, B.C.**, entertained about 60 foremen and heads of departments at dinner recently, when they were complimented on the expeditious manner in which the work of rehabilitation after the recent fire, was carried out.

**Davie Shipbuilding & Repair Co., Lauzon, Que.**—It was reported recently that G. D. Davie, Managing Director, had visited the U.S. in connection with a contract for building of several steel steamships, and that the company had been invited to tender for the work. We are again constrained to call attention to the particulars relating to the Dominion Government's shipbuilding programme, and that there is practically no likelihood of the government permitting the construction of steel steamships for outside parties for some time to come. Canadian Railway and Marine World for April contained full details of the government's programme, and the proposed utilization

sea early in August, and left for Lunenburg. Her dimensions are: length of keel, 127 ft., breadth 33 ft., depth 12 ft. 7 in., and she has a net tonnage of 365. She is equipped with gasoline engine for hoisting sails, anchor, etc., and also with

**Fauquier & Porter, Hantsport, N.S.**, launched the schooner Margaret F. Dick, August 24, for the British Colonies Transportation Co., Ltd., St. John, N.B. She is of about 1,000 tons capacity, and is the second vessel to be built for this owning company, which was incorporated recently. The first vessel, the Celina K. Goldman, built by the St. Martins Shipbuilding Co. at St. Martins, N.B., is mentioned elsewhere on this page.

**G. Gulliford, Britannia, Nfld.**, has completed the three masted schooner Barbara Barr for G. M. Barr and J. T. Currie. She is 363 tons gross, and has the following dimensions: length 142 ft., breadth 29½ ft., depth 12 ft. She is equipped with an 8 h.p. engine for raising the anchor and sails, handling cargo, pumping, etc.

**R. H. Howes Construction Co., Mete-**



ghan, N.S.—The three masted schooner Richard B. Silver was launched at this yard at the end of July. She is built for Lloyd's class A1 with a star, for 12 year rating. Her dimensions are: length 150 ft., breadth 34½ ft., depth 14¾ ft.; tonnage, 485 gross, 400 register. She has been bought by H. W. Adams et al, Lunenburg N.S., and is at Liverpool, N.

miles, a speed of a little more than 9 miles an hour is said to have been made, on a consumption of 8 tons of coal, which included banking the fires three times and raising steam once. She has a cargo capacity of about 300 tons, and when fully loaded will have a draft of about 10 ft. On the completion of the trip she was placed in the Marine Department

the St. Lawrence Dock, Levis, Que., a marine railway and slip, where work is proceeding on the conversion of the dredge Galveston, which was purchased from the Dominion Government, into a cargo freighter. When completed, this vessel will be taken over by French interests, for operation in the coal service between England and France. She will have a capacity of 2,500 tons. The Quebec Harbor Commission's dredge No. 1 was also purchased and has been remodelled and named Silenc. She has now a dead-weight capacity of 2,350 tons, and was expected to sail for France for similar service, about the end of August. It is the company's intention to limit its new shipbuilding to small craft, such as steam trawlers, harbor tugs, etc.

**Nova Scotia Shipbuilding & Transportation Co., Liverpool, N.S.**—The schooner James G. Jov was launched Aug. 3, for Job Bros., St. John's, Nfld. This is the fourth vessel launched by the company since Nov., 1917. She is of the following dimensions: length over all 150 ft., length over keel 128 ft., breadth 33 ft., depth of hold 12 ft.; tonnage, 460 gross. She is a tern schooner for the fish trade and has been built with a poop deck carried forward of the main mast. Two other schooners of smaller capacity are under construction.

**The Port Arthur Shipbuilding Co., Port Arthur, Ont.**, will, altogether, build 8 trawlers this year for the Naval Service Department, similar to the Castle class. Two of these sailed east early in August, and two were launched Aug. 3, and were expected to be ready to sail about the end of the month. Two more will be launched about the middle of September, and another two early in October.

**Prince Rupert, B.C.**—The G.T.P.R. dry dock and ship repair plant here has been leased to the Mullen Contracting Co., Pittsburg, Pa., for a term of years. It is stated that J. L. Mullen of Pittsburg, Pa., has undertaken the work of turning the dry dock into a shipyard, and that contracts for 10 steel steamships of about 8,800 tons each, have been secured.

**Quebec Shipbuilding & Repair Co., Quebec, Que.**, has laid the keel for a 600 ton



Launching of steel steam trawler for Naval Service Department.

T.R. 12, built by Collingwood Shipbuilding Co., Collingwood, Ont., was christened by the Governor General's daughter, Lady Rachael Cavendish. The steel cargo steamship War Wizard, being built for the British Government, is shown to the right of the illustration.

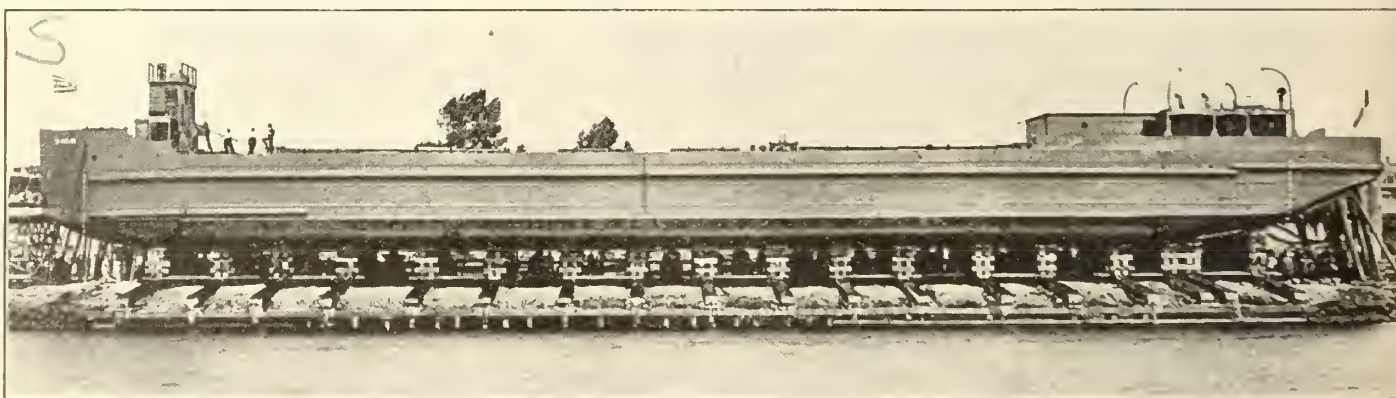
S., loading for Buenos Ayres. She is equipped with stockless anchors, and Canadian Fairbanks-Morse type Z engine.

**McLean & McKay, Economy, N.S.**, have a 3 masted schooner of 400 tons capacity, nearing completion. The dimensions are: length over keel 136 ft., breadth 23 ft., depth of hold 12 ft.

**Milton Shipbuilding Co., Yarmouth,**

yards at Prescott, Ont., and it is expected that she will eventually be used on the Great Lakes. The construction of the vessel was commenced in Aug., 1907, and she was launched in November, work proceeding slowly on her during the winter.

**National Shipbuilding Co., Goderich, Ont.**—In our last issue, some comment was made on incorrect information given



Canada Steamship Lines steamship T. P. Phelan, just prior to launching at Three Rivers, Que.

N.S., has a schooner of about 350 tons under construction at Milton. Amongst those interested in the company are E. B. Ehrogott, H. C. Churchill, B. A. Wetmore, E. L. Crosby and T. A. Crosby.

**Montreal Shipbuilders, Ltd., Montreal.**—The trial trip of the reinforced concrete steamboat Concretia, on July 23 to 25, to which reference has been made previously, was on the St. Lawrence River between Montreal and Prescott, with overnight stops at Stanley Island and Morrisburg. During the trip of 108

in the daily press as to the establishment of a large shipbuilding plant on the south shore of the St. Lawrence River, to be operated by a large combination of Ontario and Quebec interests. At the same time we gave the correct details, so far as they were then available. We have since been advised by W. H. Hutchinson, President, National Shipbuilding Co., that the scheme for a shipbuilding yard at New Liverpool, Que., as mentioned in our July issue, is not to be proceeded with, but that his company is establishing at

schooner, to be built on the lines of the schooner M. P. Connolly, built by the same company, and which was wrecked at Sable Island, N.S., recently.

**St. Martins Shipbuilding Co., St. Martins, N.B.**—The schooner Celina K. Goldman, for the British Colonies Transportation Co., Ltd., St. John, N.B., was launched Aug. 7, the christening being performed by Mrs. C. E. A. Goldman, Toronto, wife of one of the directors of the company. The Celina K. Goldman is the first of three schooners which the



British Colonies Transportation Co. is having built for the South African trade. She has a carrying capacity of 1,000 tons, and is of the following dimensions: length over all 171 ft., length between perpendiculars 161 ft., length over keel 141 ft., breadth 35 ft., depth of hold 12 ft. 8 in.; tonnage, 525 gross, 477 register. She is loading lumber at Parrsboro, N.S., for South Africa. The St. Martins Shipbuilding Co. intends filling the moulds again, and expects to use considerable foreign wood, with the idea of obtaining a better class.

W. D. Sweeney, Yarmouth, N.S., launched the schooner Grace and Ruby, Aug. 8. She is 112 ft. long over all, and 85 tons register. She is to be equipped

result, permission has been granted to a company at Vancouver, B.C., to build 20 wooden vessels for Norwegian interests. It is stated that numerous applications for permission to build steel vessels for foreign register have been refused, as it is believed that the Dominion government's own shipbuilding programme would be interfered with. For some time past it has been stated orders have been offered at various plants in British Columbia for the construction of wooden vessels for outside interests, and it was mentioned, and as we pointed out, wrongfully mentioned, that they were for the British Government. Norwegian interests were reported recently to be negotiating for a site for a shipyard at the Songhees Re-

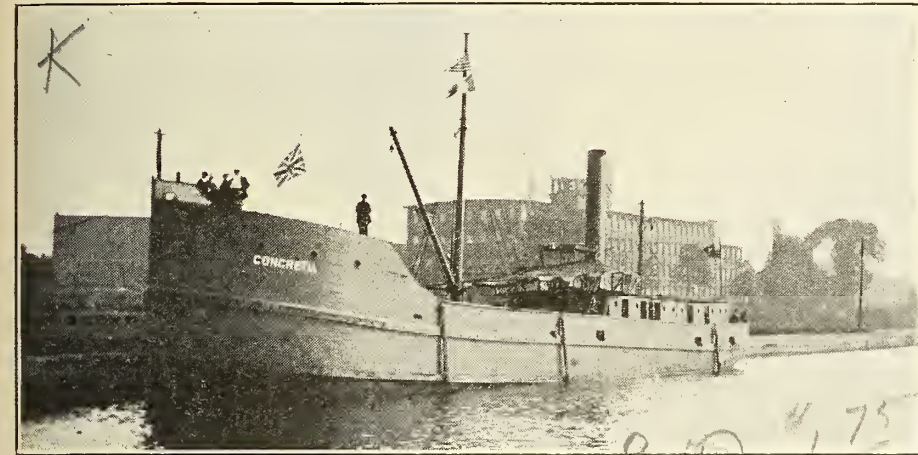
a little additional publicity. The following paragraph appeared in the August issue of a monthly devoted to marine "information":—

"Dominion Iron & Steel Co., Montreal, Que., Canada, last March, undertook to erect a steel plant at Sidney, B.C., capable of an annual output of 150,000 tons of ship steel. The plans, now completed, provide for a shipbuilding plant to be built at Halifax for the construction and repair of steel vessels. This part of the programme will be begun at once."

The Dominion & Steel Co., it is needless to point out, has not undertaken to erect a steel plant at Sidney, B.C., the company's plant being at Sydney, N.S. The plans which the company has in connection with the extension of its Sydney plant, for the manufacture of steel plates for shipbuilding, by arrangement with the Dominion Government, do not provide for a shipbuilding plant at Halifax. The shipbuilding plant at Halifax, which will utilize ship plates made by the Dominion Iron & Steel Co., at Sydney, N.S., is being built by Halifax Shipyards, Ltd., which company is erecting the plant, and which has no connection whatever with the Dominion Iron & Steel Co.

#### The Montreal Dry Dock, Connaught.—

A report is current in Montreal, that Canadian Vickers' floating dry dock is to be taken to Halifax for operation by Halifax Shipyards, Ltd. We have been unable to obtain any confirmation of this, but, if such an arrangement could be made, it would seem that there would be considerable advantage in having the dock there for the winter. There is no question but that additional dry dock facilities are urgently required at Halifax, and until the plans now being considered, can be carried out, some temporary accommodation should be provided to meet the needs of the situation. The matter is one which might profitably engage the attention of those concerned.



The reinforced steamship Concretia, built by Montreal Shipbuilders, Ltd.

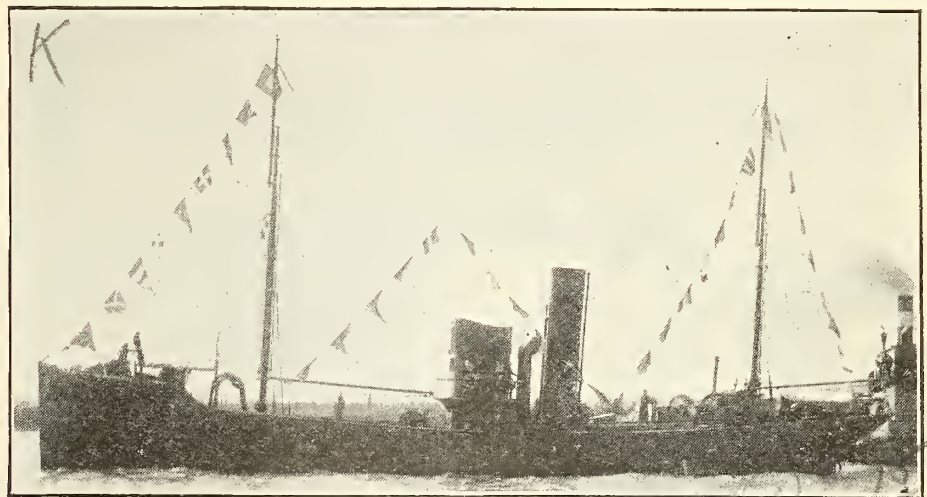
with auxiliary power and will be used in the fishing business.

Three Rivers Shipyards, Ltd., Three Rivers, Que.—The National Shipbuilding Corporation of Boston, Mass., with a shipbuilding plant at New Orleans, La., is reported to have secured the capital stock of the Three Rivers Shipyards, Ltd., and it is stated that the building of wooden steamships for foreign account will be undertaken there, the National Shipbuilding Corporation having orders on hand amounting to between \$8,000,000 and \$10,000,000, which will keep the yards, with 15 ways, busy until the end of 1919. It is also stated that the National Shipbuilding Corporation intends converting the shipyards into a car building plant, should the shipbuilding show signs of declining. Three Rivers Shipyards, Ltd., which was incorporated early in the year, has a 5 acre site on the western side of Three Rivers harbor, and is building 2 wooden steamships for the British Government, under order from the Imperial Munitions Board, placed with T. M. Kirkwood, Toronto, who is President of the company.

C. T. White & Son, Alma, N.B.—The schooner Vincent A. White, 453 tons, was launched at this yard, Aug. 7, and this was followed on Aug. 9 with the launching of the schooner Meredith A. White. The first named vessel will load general merchandise at Apple River, N.S., for South Africa.

Wooden Vessels for Foreign Registry.—A press dispatch from London, Eng., states that Sir William Beardmore, of Wm. Beardmore & Co., shipbuilders, Glasgow, Scotland, and other shipbuilders, interviewed Hon. C. C. Ballantyne, Dominion Minister of Marine, in London, early in August, relative to the building in Canada of wooden vessels for Norwegian registry. It is stated that as a

serve, Victoria, and the Victoria Shipbuilding Co., in which J. H. Price, President, Cameron-Genca Shipbuilders, Ltd., is chiefly interested, was said to have



Steel steam trawler for Naval Service Department, built by Port Arthur Shipbuilding Co.

practically completed arrangements with the British Government for the construction of 20 wooden vessels.

#### "Information" That is Not Information.

In our last issue we gave an instance of the type of incorrect information, which is being published in many papers, news, trade and technical. We do not wish to assume the task of correcting all the errors which find their way into print, nor even to pose as infallible, but some of the items are so absurd as to call for

The auxiliary schooner M. P. Connolly, which was launched at Quebec, Que., in October, 1917, was reported, Aug. 19, to have become a total loss, with her cargo, near Sable Island, Aug. 19. She was built by the Quebec Shipbuilding & Repair Co. at its St. Laurent yards, Isle of Orleans, and was the first wooden vessel built in Quebec since 1893. Her dimensions were: length over all 223 ft., breadth 42 ft., depth of hold 20 ft.; deadweight capacity about 2,100 tons; net register tonnage 1,350 tons. Full details of the casualty were not obtainable at the time of writing, the crew still being at Sable Island.



## Toronto Harbor Commissioners' Office Building.

For several years back the need of an office building to accommodate the various interests doing business on the Toronto waterfront has been from time to time impressed upon the Toronto Harbor Commissioners. Along with a desire to do everything in their power to facilitate business around the harbor, it was felt by the commissioners that the time had arrived with an opportunity to show their unlimited confidence in the coming importance of the harbor front from the viewpoint of the development work which they are now undertaking. Consequently, with the nearing of the expiration of the lease of the commission's Bay St. offices and the necessity of obtaining larger quarters for the increased staff, all of the

continuous automatic record of the fluctuations in the water levels of the lake. On the main floor are the Comptroller's department, Harbor Master's office and the construction department. On the 2nd floor are the offices of the Chief Engineer and Manager, Assistant Chief Engineer, surveys and lands department, Secretary, industrial department and the board room, the latter being 35 by 16 ft., thus giving ample space for receiving deputations, etc. The third floor is partly occupied by the commission's designing and drafting department. Separate luncheon rooms for men and women are being fitted out on the 6th floor. The privilege of using this accommodation will be extended to all the occupants of the building, so that



Toronto Harbor Commissioners' Office Building.

above served to confirm their decision to erect a building of their own. The result was the construction of what may be termed the latest addition to the Toronto waterfront sky line.

The building is a 6 story structure, facing on what will ultimately be the 86 ft. Queen's Quay or marginal way serving the waterfront, having a frontage of 100 ft. along the water by 65 ft. deep, and is of reinforced concrete construction resting on spread footings. These footings are in turn carried by round bearing piles driven to rock. The walls are of Indiana limestone, furred with 4 in. hollow tile, and the building is fronted with 8 stone columns extending from the 2nd to the 6th floors.

The centre of the building is taken up by the stairs, 2 elevators, vaults and piping shaft, and around these run the corridors, serving the different offices and giving ideal lighting conditions for all of the offices. On each floor there is available for occupancy over 4,200 sq. ft. of space. In the basement, the floor of which is just 3 ft. below the grade of the street, and which is well provided with sunlight, are the janitor's quarters, photograph and blue printing departments, stationery storeroom and heating plant; also the hydrograph, operated by a float, giving a

on stormy days, or, in fact, every day, anyone desiring to obtain a light luncheon may do so without leaving the building.

Already considerable space in the remaining upper floors of the building has been taken up by various firms. Up to the time of writing, offices have been leased to J. E. Russell, contractor; David Ross, engineer and contractor; The Construction & Supply Co.; Roger Miller & Sons, contractors; Alfred Chapman, architect, and the Sherwood Construction Co. By the terms of the leases, the commissioners furnish the floor covering of battleship linoleum, and also supply the lighting current. The offices are being rented for \$1.50, \$1.25 and \$1 per sq. ft. per year. It is the commissioners' ultimate intention to enlarge their garage, located a short distance from the building, to afford accommodation to all the tenants and thus do away with any possible infractions of the city parking by-law, as well as affording protection for cars during stormy weather.

Along the face of the dock or landing stage, which has been constructed along the front of the building, are being provided facilities for public use for picking up and landing special parties. Seats are also being placed along the dockage, for the accommodation of any of the citizens

desiring to while away spare moments by the waterfront.

## Control of Shipping in Newfoundland.

On the Minister of Shipping's recommendation, and under the authority of the War Measures Act, 1914, and amending acts, the Governor in council has approved the following regulations regarding the control and regulation of shipping:

The managing owner or agent of any vessel owned or registered in Newfoundland or of any vessel chartered in whole or in part by or to any person residing or trading there, before allowing it to proceed to any port or between any ports outside Newfoundland, shall send a written notice of the proposed voyage to the Minister of Shipping, and submit a copy of the proposed charter party (if any) and the rates of freight for the voyage. The minister reserves the right to approve or disapprove of voyage, charter party, and rates of freight, and to vary same in whole or part. No vessel shall proceed upon a voyage to any foreign port or between foreign ports unless and until the owner or agent has received official notification of the approval of the minister. The minister may instruct the Customs Department to refuse a clearance or entry to any vessel to or from any port in Newfoundland to or from any port or ports outside Newfoundland; and may also instruct any collector to withdraw or cancel any such clearance or entry already given which in the minister's opinion ought to be withdrawn or cancelled. Any master of any vessel sailing without a clearance or whose clearance has been withdrawn, shall be guilty of a breach of these regulations. Any person guilty of a breach of any of these regulations shall be liable to a penalty not exceeding \$5,000, or in default to imprisonment not exceeding 6 months, to be recovered and enforced in a summary manner before any magistrate or justice of the peace; and such penalty shall be in addition to and not in substitution for any penalty to which any person may be subject under sec. 8 of the War Measures Act, 1914.

**Toronto Ferry Co.'s Fares.**—The Toronto City Council is making another effort to prepare a bylaw for the Ontario Government's approval, granting the Toronto Ferry Co. power to increase its fares for adults 'ordinary tickets for the round trip from the mainland to Toronto Island, from 10c to 15c, and from 5c to 8c for the single trip. The second attempt limits the increase for the duration of the war, and maintains the fares for children and picnic parties and for baseball combination tickets, as at present. There is continued opposition to the proposed increase, and the point has been raised as to what constitutes a picnic party. The dictionary definition is capable of considerable exploitation.

**Vessel Losses by Submarines.**—Vessels sunk during July by submarines aggregated 313,011 gross tons, of which 176,479 gross tons were British, and 136,532 tons belonged to allied and neutral countries. This is an increase of 10,965 gross tons British, and 20,552 gross tons allied and neutral, over June, and a decrease of 55,301 gross tons British, and 3,829 gross tons allied and neutral, as compared with the figures for May. The sailings to and from Great Britain during July showed a great increase, the total gross tonnage being 7,718,898 gross tons, an increase over June of 288,512 gross tons.



## Wreck Commissioner's Enquiries and Judgments.

Enquiries have been held into the following casualties recently, and judgments delivered:—

### Stranding of s.s. City of Vienna.

Held at Halifax, N.S., July 8, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Commander G. E. Bridge, R.N.R., and Lieut. J. L. Poppleton, R.N., as nautical assessors, into the stranding of British s.s. City of Vienna, owned by the Hall Line, Liverpool, Eng., on Black Rock, Sambro Ledges, at the entrance to Halifax Harbor, July 2, during a dense fog. The court found that the master, J. W. Partington, a stranger in those waters, and holding the highest grade certificate, navigated his vessel with every care and precaution which prudence demanded, from Cape Gaspe, where he encountered fog, taking his vessel, without sight of land or observation of any kind, from the Gulf of St. Lawrence into Cabot Strait, and out into the Atlantic afterwards to reach Halifax by a zigzag course. On July 1, he obtained a sight and found his position, which was verified by a cast of the lead. On that day he received a message warning him of the presence of an enemy submarine in the vicinity of Halifax, and he elected to alter his course more in shore, with the consent of the officer in charge of troops then on board. Weather conditions then permitted of him seeing from 4 to 5 miles, without perceiving land. The weather then became thicker and the speed was reduced to half and finally dead slow and stopped, and the vessel struck while barely moving. His attention to soundings was all that could be desired, and his vigilance on the bridge cannot be questioned, his actions throughout showing that he possessed very good judgment in resolving his calculations based on dead reckoning, and being a stranger, he was not aware of the fact that after a steady easterly wind, a set to westward is keenly felt, the allowance for which can only be arrived at by local knowledge. The court found him in error in not stopping his vessel upon hearing the Sambro fog signal ahead, or slightly on the port bow, and then circling until he heard the Chebucto Head fog signal, being then only 6 or 7 miles distant. This error is by no means culpable under the circumstances, but, unfortunately, it jeopardized valuable property. It was therefore held that the master was not in default, but that he committed an excusable error of judgment.

Regarding the discipline amongst the troops on board, all of whom were landed safely, the court remarked that this remarkable feat was without doubt due to the discipline which the officer in command had instilled in the men, with the help of his subordinate officers, the men, one and all going to their stations calmly singing verses of song, and upholding in every way, the best traditions of British soldiers.

The court remarked on the evidence that there were only four lifeboats on board, but that 77 rafts had been added at Montreal. The officer in command stated that he had expostulated before leaving Montreal, at the insufficient number of lifeboats, but was told that there was a sufficient number of life rafts to compensate. It is within the province of the court to enquire into the equipment of vessels, and the court expressed the opinion that life rafts do not meet the requirements. They are not placed on vessels as substitutes for lifeboats, but as adjuncts, and it therefore condemned the

continuance of equipping vessels in this manner.

The court also expressed its surprise at the wholesale depredations and wanton destruction committed by residents in the vicinity of the wreck after it had been for the time abandoned. It suggested that means should be taken to prevent a recurrence of such disgraceful pillage, and for the punishment of the guilty parties.

### Stranding of s.s. Eugenia John Diacaki.

Held at Halifax, N.S., July 11, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Commander G. E. Bridge, R.N.R., and Lieut. J. L. Poppleton, R.N., as nautical assessors, into the stranding of the Grecian steamship Eugenia John Diacaki, on Transport Ledges, Egg Island, N.S., during a fog, July 2. The court, after considering the evidence, which was obtained under the greatest difficulty, owing to necessary interpretation, and to the necessity of writing questions to the first mate, who is totally deaf, found the master and mate in default, and would have looked on the stranding with some leniency had the master and mate taken casts of the lead, and made some theoretical and practical efforts, which was part of their duty, and is obligatory to keep a dead reckoning of the distance run, and to maintain the position of the vessel at each change of course. It would also have allowed much for the panicky situation caused by the receipt of a message bearing on the presence of enemy submarines, if it had been shown that the slightest effort had been made to keep each position in view by other means than supposition and assumption. Having no jurisdiction over the certificates of these men, the Greek consul was advised of the finding, for the information of his Government.

### Stranding of s.s. Ockenfels.

Held at Halifax, N.S., July 19, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Commander G. E. Bridge, R.N.R., and Lieut. J. L. Poppleton, R.N., as nautical assessors, into the stranding of the U.S. steamship Ockenfels, at Mars Head, N.S., June 30. The court found that the master, John Deery, from the time he left Philadelphia, navigated his vessel with prudence, and adopted every means at his disposal to obtain his position, almost from hour to hour. He, however, erred, involuntarily, in reckoning on an easterly current, while a westerly current was flowing, and also inadvertently ignored a possible leeway occasioned to the vessel by swell and the wind. This error is not considered culpable, and he was exonerated from blame, and the hope was expressed that on these matters being pointed out to him, he will exercise additional prudence in future. The evidence showed that the various messages he received as to the presence of submarines in the vicinity, did not in the least affect him in exercising proper judgment. The finding was forwarded through the usual channels to the U.S. Government.

The Lincoln Steamship Co., Selkirk Steamship Co., and Westham Steamship Co., all of Vancouver, B.C., are being wound up voluntarily, with L. Rogers as liquidator.

The North Vancouver ferry committee is considering the question of building a double end ferry steamboat, somewhat larger than the two now in operation.

## Halifax Shipyards Limited,

Progress is being made on the work in preparation for the erection of the ship-building plant at Halifax, N.S., some details of which have been given in previous issues. It was originally intended that the plant would include 3 shipbuilding berths, but changes have been made in the plans, so that there will be 4 berths. The contracts for the excavating, which is in progress, and for the retaining walls, etc., have been placed, as already mentioned, with the Bedford Construction Co., which also has the contract for the erection of one of the buildings, which is partly completed. Contracts for the remaining buildings are yet to be awarded. The dry dock which was taken over by the Dominion Government recently, has been leased by the company, and the plans for the whole plant are so arranged as to provide for its enlargement.

It was announced recently that Jas. Carruthers, of Montreal, who is said to have subscribed for \$500,000 of the company's stock, had resigned the chairmanship of the board. In confirming this, Mr. Carruthers stated that he had resigned because two other directors, who are interested in the Maritime Wrecking & Salvage Co., which was incorporated Dec. 29, 1917, had refused to transfer their interests in it to Halifax Shipyards, Ltd., and he did not believe in any officer of a company being interested in other companies which might interfere with its earnings. Under its charter, Halifax Shipyards, Ltd., could carry on wrecking business itself.

Roy M. Wolvin, Vice President and Managing Director, Halifax Shipyards, Ltd., stated in this connection that Mr. Carruthers had some time ago expressed a desire to withdraw from the company, and in pursuance of his request his resignation had been accepted and his subscription already replaced.

Everybody connected with the company regretted Mr. Carruthers' decision, and the loss of his personality. The prospective operations of Halifax Shipyards, Ltd., were, however, of a national character, and he and all his associates realizing this, were striving to their utmost to successfully carry out the undertaking and were making very satisfactory progress in getting the new plant into operation. Mr. Wolvin further stated that no one interested in Halifax Shipyards, Ltd., was in any way, either directly or indirectly, interested in any subsidiary company which is in competition with the new company, and that there must be some misunderstanding in this connection.

It is stated that Sir Herbert Holt, one of the C.P.R. directors, and President of the Royal Bank, has bought a large block of stock of Halifax Shipyards, Ltd., and that while he may not become a member of the board, his interests will probably be represented by J. S. Norris, General Manager, Montreal Light, Heat & Power Co.

U.S. Lake Wages Scale.—Cleveland, Ohio, press dispatch, Aug. 14:—The committee appointed at the last meeting of the directors of the Lake Carriers' Association to fix a scale of wages made a report last night, and the schedule recommended by the committee was approved by the mobilization committee. The schedule, which calls for a general advance of from \$7 to \$20 per month, will be paid from Aug. 1. The mobilization committee also announced that an adjustment will be made of the wages of all licensed officers at the end of the season.



## Investigation into Shipbuilders Employes Wages, etc. in Quebec.

The following report was approved by the Governor General July 29:—The committee of the Privy Council have had before them a report, dated July 25, from the acting Minister of Labor, submitting that there exists serious friction as between various firms in the Province of Quebec, engaged in the shipbuilding industry, and the employes of such firms in different classes of labor, the employing firms being occupied wholly or chiefly on work which is essential to the conduct of the war, and there is grave reason to apprehend that the unrest in question may result in a cessation of work and in serious injury to the public interests. The minister further submits that, with a view to the establishment of more harmonious and satisfactory relations between the employers concerned and their workmen, it is advisable that an enquiry be made into and concerning such unrest, with special regard to wages, piece-work, working hours, overtime and other conditions of labor and the nature and cause of the grievances alleged; and that the enquiry shall include particularly disputes which have come to the knowledge of the Minister of Labor, in the case of Fraser, Brace & Co. of Montreal; Quinlan & Robertson, Ltd., Quebec; the Davie Shipbuilding & Repairing Co., Lauzon, Que., and the Quebec Shipbuilding Co., Quebec, and their employes, and shall extend to such other disputes of like character as may be reported to the minister during the progress of the enquiry in question.

The minister, therefore, recommends: That it be referred to a commission under the provisions of part 1 of chap. 104, Revised Statutes of 1906 (the Enquiries Act), composed of Mr. Justice F. S. MacLennan, of the Superior Court of the Province of Quebec; Thos. E. Robb, Secretary of the Shipping Federation of Canada, Montreal, and J. M. Walsh, Secretary of the Quebec and Levis Federated Trades and Labor Council, to hold and conduct such enquiry, with all the power conferred by the aforesaid statute upon the commissioners. That the commissioners have the right to determine the manner of conducting the proceedings in respect to such enquiry and to make all necessary enquiries and investigation concerning the relations between said employers and employes, with a view to taking such steps as may seem calculated to promote and secure an amicable working arrangement between the employers in question and the employes concerned, and, failing the achievement of such amicable working agreement before the commission, the commissioners shall make such recommendations as will, in their opinion, be best calculated to remove or lessen the unrest now existing. That Mr. Justice MacLennan be appointed chairman of the commission, and that the report of the commissioners on the matters investigated and their findings and recommendations be presented to the Minister of Labor. That all fees and expenses payable to the commissioners, or to the witnesses or other persons who may under their authority be concerned in the proceedings of the commission, shall be governed by the provisions as to such matters of the Industrial Disputes Investigation Act, 1907, as if the commission were a board of conciliation and investigation established under that statute. That all expenses incurred by the commission be paid from the War Appropriation. The committee concur in the foregoing recommendations and submit the same for approval.

## United States Great Lakes Training Station.

The U.S. Shipping Board has authorized the commissioning of a training ship on the Great Lakes for training of apprentices as seamen, firemen, and cooks on lake cargo carriers. The ship will be based at the station to be established at Cleveland, under the board's recruiting service for the lakes. This service, of which Henry Howard, of Boston, is director, is training 3,000 men a month for the new merchant marine on a fleet of training vessels maintained in Atlantic and Pacific waters. It is now seeking a suitable vessel for the lakes, which will be the thirteenth in the board's training fleet.

Recruiting of apprentices for the Great Lakes training ship will be carried on in the same recruiting stations of the board that are now providing large numbers of young men for coastwise and overseas ships. The board has nearly 2,000 of these stations in the seven states touching the lakes.

## Shipbuilding in the United States.

All shipbuilding records went to smash in the U.S. in July. Statistics assembled by the U.S. Shipping Board Emergency Fleet Corporation, from reports sent in by the various shipyards, show that more ships were launched during July than had hitherto been launched in any 12 months from U.S. shipyards.

The figures reach the impressive total of 123 vessels with a dead-weight tonnage of 631,944. The launchings divide as follows:

Type of vessel.	Number.	Dead-weight tonnage.
Composite .....	3	11,000
Steel .....	67	433,244
Wood .....	53	187,700
Total .....	123	631,944

The following table shows launchings by months for 1918 in d.w. tons:

January .....	88,507
February .....	123,625
March .....	172,611
April .....	160,286
May .....	259,241
June .....	283,322
July .....	631,944
Total .....	1,719,536

There were completed in July, 41 vessels totaling 235,025 dead-weight tons. Of these 36 were steel vessels of 217,025 d.w. tons, and 5 were wood vessels of 18,000 d.w. tons. This does not include 2 steel vessels of 15,855 d.w. tons which were delivered from Japanese shipyards. If these were counted in the grand total of ships completed for the Shipping Board in July it would be 43 ships of 250,880 d.w. tons.

From Aug., 1917, when the present Shipping Board began operations, up to Aug. 1, 1918, there have been completed and delivered 37 steel contract vessels having a deadweight tonnage of 245,700, and 210 requisitioned vessels totaling 1,326,156 d.w. tons, a grand total of 247 ships, aggregating 1,571,856 tons, completed and placed in service. Almost half of this total tonnage was delivered during the last three months, the actual amount being 775,545 tons.

There are now 118 fully-equipped shipyards in the U.S., and 44 others partly complete, of which 23 are more than 75% finished, and only 6 less than 25%, ready to begin building tonnage. Many have been built from the ground up, while the others have been extended and enlarged to such a degree that many of them amount almost to new yards.

Thirty-seven steel yards which the

U.S. had when the war began have grown to 72. The old yards have been increased from 162 ways to 195, and more are being added. Eighty yards for building wooden ships are in operation or nearing completion. The remainder of the total number of yards are for building concrete ships, a new industry developed by the war need.

The 118 yards which are complete are distributed sectionally as follows: Pacific coast, 48; Atlantic coast, 38; Great Lakes, 16, and Gulf coast, 16.

With the success of its huge shipbuilding programme assured, the U.S. Shipping Board will now concentrate its power on the manning of the merchant marine with "all-American" crews.

**St. John Dry Dock & Shipbuilding Co., St. John, N.B.**—The company's shipbuilding and repair plant will be located immediately adjoining the dry dock, where work was commenced Aug. 5, on clearing the ground. In the course of a few weeks, a definite proposal regarding the plant is to be placed before the New Brunswick Government and the City of St. John. The Bedford Construction Co. has been awarded a contract for the removal of rock work from the dry dock site, and it is expected that by the end of the year, 250,000 cub. yds. of rock will have been removed from the prism of the dry dock and placed in the breakwater. A. R. Dufresne, formerly Assistant Chief Engineer, Dominion Public Works Department, Ottawa, has been appointed Manager in charge of the work at St. John.

**Masters and Mates on Pacific Coast Vessels.**—The Royal Commission, consisting of W. E. Burns, Chairman, E. A. James and J. H. McVety, appointed recently to investigate disputes between vessel owners on the British Columbia coast, and masters and mates engaged on their vessels, has concluded its enquiries, but had not reported at the time of writing. The application for an investigation, made by the men, stated the matters in dispute related to wages and working conditions, but in the course of the enquiry, it developed that the chief trouble was the question of the recognition of the Canadian Merchant Service Guild, by the employers. A press report from Victoria, late in August, stated that after having given 48 hours notice, the men had left their vessels, which were then tied up at various points.

**Grain Shipments from Pacific Ports.**—Several shipments of grain have been made through the Government elevator at Vancouver recently, for European ports, via the Panama Canal. The steamships Empress of Asia, Alaska, War Power and War Viceroy, have each taken cargoes, and so far as reports have been received, the grain has arrived at its destination in excellent condition. It was at one time thought that the varying climatic conditions would cause considerable deterioration of such cargoes, but so far this trouble has not been met.

The Champlain dry dock at Lauzon was opened for business Aug. 22, and two large Atlantic steamships were docked there for overhaul. A full description, with illustrations, was given in our June issue.

Canadian Pacific Ocean Services' s.s. Lake Manitoba was practically destroyed by fire, Aug. 26, while taking on oil at the Imperial Oil, Ltd., wharf at Longue Pointe, Montreal. She had about 8,000 tons capacity, and had been operated in the combined passenger and freight trade between Canadian and European ports for several years.



### Welland Canal Lock Gate Accidents.

The s.s. Canobie, owned by Wilson-Patterson Co., Montreal, while upbound light, struck and carried out the two head gates of lock 8, Welland Canal, Aug. 10. Spare gates were placed in position and navigation resumed Aug. 11, after an interruption to navigation of 16½ hours. Owing to the comparatively short reach above lock 8, and a long one below, very little damage was done to the canal banks. The cause given for the accident was that the reversing machinery jammed and failed to work. The estimated damage is \$5,000.

A second accident occurred Aug. 16, when the Montreal Transportation Co.'s s.s. Pawnee, while upbound light, struck the tow path head gate of lock 12, carrying out both upper gates and the heel path lower gate. The banks on both sides of the canal at the head of lock 11 were badly washed by the water released. Spare gates were stepped and navigation resumed Aug. 17, after an interruption of 15 hours. The vessel was undamaged, and the cause alleged for the accident, was that the engine having centered, failed to reverse. The canal damage is estimated at \$7,500. Richard Carroll, a lock tender at lock 12, hung on to the hand railing of the lower gate, and was carried into the canal and drowned.

### Canadian Pacific Ocean Services and New Steamships.

The Liverpool Journal of Commerce of July 25 publishes the following from a correspondent:—"I hear that the directors of the Canadian Pacific Ocean Services have ordered several big steamships, with which, it is hoped, the government will allow the company to proceed, so that the work may be completed in time for the conclusion of the war. As a matter of fact, one of them, a vessel of 9,400 tons carrying capacity, is, or was, in course of construction on the Tyne, while arrangements have been made for the building of others on a cost and percentage basis, 2 of them to have a length of 605 feet and a speed of at least 20 knots each. Lord Shaughnessy is, I believe, very hopeful about future prospects on the Pacific, and is not by any means pessimistic as to the result of Japanese competition, and the temporary breakdown in Russia. He is of opinion that, although it is difficult to be specific about plans, there will be some big developments on that ocean before very long. As a highway of commerce and travel it is gaining in importance every day, and it is only a question of time before the Atlantic will have to look closely to its laurels, or it will carry traffic second in volume to that of the Pacific. The awakening of the Orient and the development of the west coast of North America will force the shipping companies to increase their transport facilities very considerably."

This little bit of news concerning the purchasing and ordering of new tonnage, was contained in the C.P.R. report for the six months ended Dec. 31, 1916, issued in April, 1917, and published in Canadian Railway and Marine World for May, 1917. For obvious reasons it is impossible to give the position of affairs as regards these vessels at present. One steamship of 9,400 tons was purchased while under construction, and orders were placed, on a cost and percentage basis, for 2 steamships 605 ft. long, 20 knots speed, and 2 of 16 knots speed, with length of 546 ft.

### British Shipbuilders Looking to Canada.

A Canadian Press dispatch from London, Eng., Aug. 12, referring to the Canadian newspaper men's party's visit to English manufacturing districts, said:—"The great captains of industry directing this war effort are alive to the possibilities of the future, and discuss freely their confidence in Canada. Unanimously they predict her prosperity. Among those who believe that Canada is on the eve of tremendous development are the shipbuilders on the Clyde, of whom Hugh Latta is one. One of these captains said to me: 'We already are preparing plans for works in Canada for ourselves. We believe opportunities for shipbuilding in your country are unexcelled anywhere. You have the raw material, and coal within easy access and what is of great importance, a manufacturer or builder may begin afresh with you on new plans and under new conditions.'"

### Proceedings re Ship Protests.

Under an order in council of July 2, 1918, collectors of customs at ports of entry on the Pacific and Atlantic, including ports on the Gulf and River St. Lawrence up to and including Montreal, are authorized, during the war, to do any notarial act for the purpose of noting and extending ship protests, and are authorized to receive any statutory declarations required in connection therewith. Masters of all British ships have been instructed that no note of protest of loss or of any occurrence whatsoever arising in respect of their ships is to be made by them in the Dominion except before a collector of customs, who are instructed, when the master of a British ship reports inward and when issuing a clearance to a British ship, to direct the master's attention to the above requirements.

Protests by masters of British ships trading on the inland waters of Canada, or protests in respect of loss or other occurrence arising while a British ship is on any of the inland waters of Canada, do not require to be made before a collector of customs. In such cases the master may follow the usual and existing practice.

For the information and guidance of collectors before whom a master may present himself in connection with ship protests, it should be stated that a protest may be made in the first instance, or the master may desire to make a note or entry of protest only, which may later be extended to a regular protest before the same or another collector of customs. The note or entry of protest is merely a notice of the master's intention to protest, should an extended protest afterwards become necessary or advisable. A note or entry of protest, also a protest—if made in the first instance—should be made as soon as possible after the arrival of the ship in port. If made later than 24 hours after arrival, it should contain a brief statement of the cause of the delay. Note or entry of protest forms, protest forms, and extended protest forms, may be obtained from collectors of customs. The note or entry of protest should be made in duplicate, signed by the master and formally certified to by the collector, and one copy retained by the collector and placed on file. When a protest is made or extended, the original is to be retained and filed by the collector and certified copies are to be given or mailed to the master and to the owner of the ship.

### The Australian Government Shipbuilding Programme.

Ottawa press dispatch, Aug. 12.—The Dominion Government has received an interesting statement in regard to the present position of shipbuilding by the Australian Commonwealth. Actual contracts entered into by the Australian Government include 26 steamships and 24 wooden ships, with a gross tonnage of 200,600. Twenty-seven distinct slips are being used for construction. When these contracts are completed, the Australian Government will own a fleet of 77 vessels, of a gross tonnage of 302,506. Of this number 14 have been purchased in England and 14 are being built in the United States.

At least one Nova Scotian vessel will, in all probability, be purchased by the Australian Government within an early date. The report states that as it is impossible to obtain adequate supplies of wire rope and the favored hemp sail canvas from the U.S., the attention of Canadian manufacturers of these articles is directed to the development of Australian shipbuilding as an outlet for their products.

### British Mercantile Marine Pay.

The London, Eng., Times says that shipowners have not been able to see their way clear to accept the scales of pay for navigating and engineer officers serving under monthly articles on passenger liners approved by the Shipping Controller and accepted by the men. The controller, in view of the protracted negotiations which have taken place, has decided that his decision is to stand, and the scales of pay accordingly are promulgated.

The pay of a first mate with a certificate of superior rate on a vessel from 1,000 to 5,000 tons is to begin at £26 a month, on vessels from 5,000 to 9,000 tons £27, on vessels from 9,000 to 13,000 tons £28, and on vessels up to 18,000 tons £29, and after three years service is to be advanced to £29 a month in the first instance, and pro rata to £32 a month in the case of vessels of from 13,000 to 18,000 tons. The pay of other navigating officers of lower grades is proportionately improved.

Chief engineers' monthly pay on 1,000 to 5,000 tons vessels is to begin at £31, on 5,000 to 9,000 tons vessels at £33, on 9,000 to 13,000 tons vessels at £35, and on 13,000 to 18,000 tons vessels at £37, rising after five years to £41 in the first instance, to £47 in the case of the 13,000 to 18,000 tons vessels. The schedule covers other engineering ranks with and without certificates.

The Maple Leaf Shipping Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital stock of 1,000 shares, without nominal or par value, provided that it shall carry on its business with a capital of \$5,000, and the head office is at Toronto. Power is taken to own and operate steam and other vessels, and to carry on a general navigation, manufacturing and forwarding business.

Making Hay While the Sun Shines.—There is a touch of humor about the announcement that, owing to the necessity of having the haying completed, employees of the St. Martins Shipbuilding Co., St. Martins, N.B., had been given a short leave, and as soon as the urgency of the crop situation had been met, shipbuilding operations would be recommenced.



## The Future of Wooden Shipbuilding in Canada.

From the time when the conditions brought about by the adoption of unrestricted submarine warfare by the enemy, made it necessary to concentrate a considerable portion of the national energy on the speedy construction of ships, the merits and demerits of wooden ships, as compared with those built of metal, have been freely discussed. It cannot be said that the adoption of the wooden ship was anything but a temporary expedient, and certainly it was not intended that the building of wooden steamships by the British Government was to become a permanent part of its policy.

On account of the abnormal demands for steel of all kinds, it was considered advisable to have a number of vessels built of wood, and to cope with orders placed by the British and French Governments, several yards were established in Canada, and equipped for the building of wooden vessels only. Some time ago it was announced that the Imperial Munitions Board, acting for the British Government, would not place any further orders for wooden steamships, as the conclusion had been arrived at that for operation in war zones, they were not able to evade submarines, etc., so well as the speedier steel vessels.

In dealing with the Dominion Government's policy regarding the building of steamships, recently, the Minister of Marine announced that the Dominion Government did not intend to have any wooden steamships built, as a part of its shipbuilding programme. He stated that the wooden shipbuilding yards in different parts of Canada had many opportunities for building wooden ships for private interests for Canadian registry, and several were then working on such orders for allied and neutral countries. As some of the yards engaged on the construction of wooden ships are now approaching the completion of their Imperial Munitions Board contracts, it is feared that they will close, thus dissipating staffs, which, in some cases, have been got together with difficulty, and also losing the experience gained, in a work, which is not without considerable usefulness, both for the present, and the near future, when vessels in large numbers will be required, and when they could operate without fear of submarine attack.

The energy which has been shown on all sides in the establishing of new yards, and in pushing the construction of the vessels ordered, can well be renewed for the continuance of the yards and the construction of further vessels without the material aid furnished by the Imperial Munitions Board for vessels built under its orders. On this point, it is well to remember that practically the whole of the material required for the ships was supplied to the builders by the board, so that in the event of builders continuing the yards and canvassing the open market for orders, they would not be in quite so advantageous a position as in dealing with the board's orders, having to buy and sell both, in open competition.

The situation is clear, ships are wanted, and to a large extent, wooden ships meet the requirements. There seems little doubt that all vessels which the wooden shipyards in the Dominion can build for the next few years, would find ready purchasers, so that it remains for these yards to turn out the vessels. There is no likelihood of the Dominion Government subsidizing the building of wooden steamships in any way, but there are great in-

ductions in the way of customs drawback on imported materials. Nothing therefore remains for the successful continuation of the wooden shipbuilding industry, but energy, public spirit, and the judicious outlay of the necessary capital, combined with the judicious handling of labor, without which last, the other matters are mere waste. A combination of all forces should enable an important, and almost essential industry, to be firmly established in the Dominion, which is peculiarly fitted for such work, and which for the several years of shipbuilding rehabilitation ahead of us, is bound to play an important part.

## Power Schemes Affecting St. Lawrence River Navigation.

The International Joint Commission met at Atlantic City, N.J., recently to consider two applications for approval of plans for the development of power affecting boundary waters; one made by the New York & Ontario Power Co. to improve its plant at Waddington, N.Y., in the south branch of the St. Lawrence, known as the Little River, between Ogden's Island and the U.S. main shore opposite the Morrisburg Canal, and the other made by the St. Lawrence Power Co., a subsidiary of the Aluminum Co. of the U.S., with reference to its plant at Massena, N.Y., to which water is drawn from the St. Lawrence, south of Long Sault Island, through an artificial canal and returned lower down through the Grasse River. The first proposal contemplates a new dam in, and an increased withdrawal of water through, the Little River, with certain remedial or compensating works to protect navigation in the Radipe Plat of the main channel and in the Morrisburg Canal, and the second contemplates the complete damming of the south branch of the river south of Long Sault Island, and the dredging of the approach to the power canal to Massena, with the advantage of establishing navigation to Massena, and also greatly increasing the power available for the output of aluminum.

The Dominion Marine Association is opposed at present to both proposals, in view partly of the prejudicial effect upon the navigability of the river, and also

because of its opposition to the parceling out of the St. Lawrence waters to private corporations, in a manner which is fast putting the river beyond the government's control, and would certainly materially prejudice any future general scheme designed to improve navigation and develop power as a national or international undertaking. Pending further investigation, the Dominion Government has withheld its approval, and in the Waddington case has filed pleadings in opposition to the proposal.

Counsel appeared for both the Dominion and U.S. Governments at the hearing at Atlantic City, and Francis King, counsel, Dominion Marine Association, appeared for that association, and also represented navigation interests, which by treaty are paramount. Mr. Kuntz, of Washington, for the U.S. War Department, supported the Massena proposal in the interest of an increased aluminum supply. A great array of engineering talent was also in attendance.

The Waddington proposal stands over for further evidence and argument at Ottawa on Oct. 1st, and the Massena project will come up for final hearing at Montreal on Aug. 29.

**Canada Steamship Lines, Limited, Earnings.**—At a meeting of directors at Montreal, Aug. 13, Jas. Carruthers, President, is reported to have stated that the business for the half year ended June 30, showed a satisfactory condition of earnings, these being considerably ahead of those for the same period of 1917. It is said that the returns indicate net earnings of over \$2,000,000 for 6 months. Taking into account that this covers the period when lake and river business is practically nil, the second half of the year ought to show considerably larger results. Last year net earnings were \$4,023,000 and in 1916 \$4,059,000, so that present indications point to even a higher result for the full year.

**Vessel Repairs in Great Britain.**—It is reported that between Aug. 3, 1917, and Apr. 25, 1918, 5,307 vessels were repaired and restored to service, representing an aggregate gross tonnage of 16,150,000 tons. The work has been thoroughly systematized, and whatever repairs can be carried out without docking the vessel, are so done.

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie canals during July, 1918.

Eastbound.			
ARTICLES.	Can. Canal.	U. S. Canal.	Total.
Lumber . . . . .m. ft. b. m.	1,951	49,786	51,737
Flour . . . . .Barrels	724,660	654,924	1,379,584
Wheat . . . . .Bushels	753,333	385,009	1,138,342
Grain, other than wheat . . . . .Bushels	1,503,505	978,121	2,481,626
Copper . . . . .Short tons	8,487	8,202	16,689
Iron Ore . . . . .Short tons	1,232,853	9,178,004	10,410,857
Pig Iron . . . . .Short tons	.....	.....	.....
Stone . . . . .Short tons	.....	1,600	1,600
General Merchandise . . . . .Short tons	7,835	3,576	11,411
Passengers . . . . .Number	3,541	1,156	4,697
Westbound.			
Coal, soft . . . . .Short tons	144,424	1,977,179	2,121,603
Coal, hard . . . . .Short tons	21,450	212,314	233,764
Iron Ore . . . . .Short tons	.....	22,680	22,680
Mfgd. Iron and Steel . . . . .Short tons	564	7,183	7,747
Salt . . . . .Short tons	5,600	7,992	13,592
Oil . . . . .Short tons	5,520	63,089	68,609
Stone . . . . .Short tons	.....	87,563	87,563
General Merchandise . . . . .Short tons	37,209	23,331	60,540
Passengers . . . . .Number	3,331	1,163	4,494
Summary.			
Vessel passages . . . . .Number	805	2,441	3,246
Registered tonnage . . . . .Net	1,495,526	8,177,657	9,673,183
Freight—			
Eastbound . . . . .Short tons	1,376,227	9,370,019	10,746,246
Westbound . . . . .Short tons	214,767	2,401,331	2,616,098
Total Freight . . . . .Short tons	1,590,994	11,771,350	13,362,344



## Grain Rates for Canadian Lake Shipments.

At a meeting of the Canadian lake carriers at Toronto, July 30, for the discussion of the vessel situation on the Great Lakes in preparation for the handling of the new wheat crop, resolutions were passed as follows:—

That Canadian carriers have given careful consideration to the proposal for mobilization of all their tonnage, either jointly with that of the U.S. lake carriers, or separately, but after full discussion and after having heard the opinions of those interested in the trade from all points of view, have come to the conclusion that they can best serve the prime object of all such proposals, namely: the contribution of the most effective assistance in the present unfortunate situation due to the war, by supporting a continuance of the arrangement which prevailed during the fall of 1917; an arrangement which gave general satisfaction and effectively met all requirements. They are influenced to some extent by the fact that in Canada there is no centralization of vessel management in any one locality, and, in consequence, an almost insuperable difficulty would be at once encountered in an attempt to manage the trade through a committee, yet, nevertheless, as already stated, this objection was subsidiary to the main question which was determined with reference to the general satisfaction expressed with the 1917 arrangement.

Canadian lake carriers, recognizing the obligation imposed on them of furnishing efficient aid to the transportation of the grain crops of Canada and the U.S., agree as follows:

1. That Lake Superior shall be served in preference to Lake Michigan and only surplus grain tonnage sent to Lake Michigan.
2. That Lake Superior wheat will be served in priority to any other grains.
3. That all tonnage to Duluth-Superior shall be allotted through the U.S. Grain Corporation office there; all tonnage for Lake Michigan ports through the U.S. Grain Corporation office at Chicago, and tonnage to Fort William and Port Arthur through the Winnipeg Chartering Committee, under the same conditions as prevailed in the autumn of 1917, but under such instructions as to allotments as may be acceptable to the Wheat Export Co. and the Dominion Government, and subject to insurance by the shipper against any grain shortage on outturn, in accordance with the present arrangement in the Buffalo trade.
4. That all unloading at Buffalo shall be directed by the U.S. Grain Corporation office at Buffalo.
5. That the Canadian lake carriers will provide tonnage for the grain movement at rates not exceeding basic rates of wheat, Lake Superior to Lake Erie, 4c a bushel until Sept. 1, and 4½c thereafter until Nov. 30, and wheat Lake Michigan to Lake Erie, 3½c a bushel until Nov. 30, with alternative and relative rates as follows: to Georgian Bay and Goderich, ½c under Lake Erie rates; to Port Huron, ¼c under Lake Erie rates; to Collingwood, ½c under Lake Erie rate, but terms of discharge at Collingwood to be the same as hereafter provided for discharge at Lake Erie side ports; to side ports other than Buffalo and Port Colborne, including Detroit, same rates as Buffalo, but with special agreement as to discharge, allowing two working days free, but thereafter vessel to receive ½c a bushel additional on entire cargo for each running eight hours or fraction thereof,

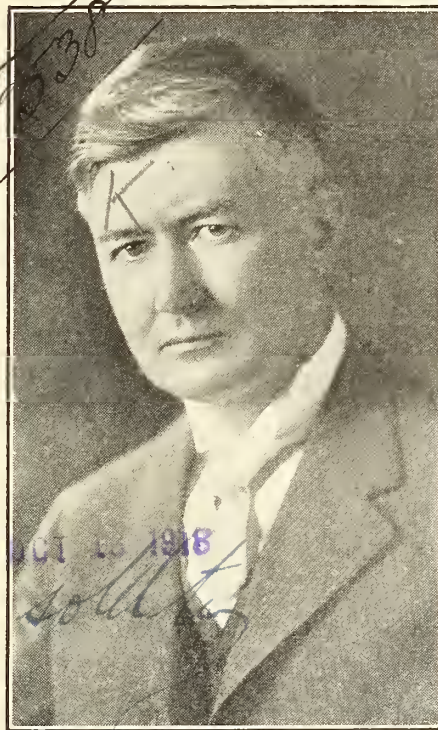
until fully discharged; to ports of light draft, vessel to be allowed freight calculated on its Buffalo capacity.

Other grains than wheat to net the vessel the equivalent of wheat cargo. Freight to Canadian vessels for carriage to U.S. ports shall be paid in funds current in U.S., and freight to Canadian vessels to Canadian ports shall be paid in funds current in Canada, and Canadian vessels, as much as possible, shall be employed in their customary autumn trade routes.

### Among the Express Companies.

William Walsh has been appointed General Superintendent of Stables and Street Equipment, Dominion Ex. Co. Office, Toronto.

Thomas E. McDonnell, General Superintendent, Western Ex. Co., Chicago, Ill.,



T. E. McDonnell  
Vice President and General Manager, Dominion Express Company.

has been appointed Vice President and General Manager, Dominion Ex. Co. Office, Toronto.

A number of Canadian Ex. Co.'s porters at Toronto Union Station, struck work during the early part of August, and returned to work, Aug. 9, on the promise that a conciliation board would deal with their grievances.

G. E. Whitney, formerly route agent, Dominion Ex. Co., Montreal, died at Orford Lake, Que. recently, aged 65, after a long illness. He retired from active service in January on account of ill health, and later spent some time in Florida.

The Board of Railway Commissioners has extended the express delivery and collection limits in Winnipeg to include the territory bounded on the north by Kylemore Ave., on the west by Cockburn St., on the south by the south line of Lot 17, St. Boniface Parish, and on the east by Daly St.

The American Railway Express Co., operating under the U.S. Railroad Administration has applied to the Interstate

Commerce Commission for increased rates on newspapers and other publications registered as second class matter by the postal service. It is proposed to establish pound rates to correspond in a general way to the increased zone second class postal rates, and for the return of publications to the shippers it is proposed to charge first class pound rates, with a minimum of 25c.

Thomas E. McDonnell, heretofore General Superintendent, Western Ex. Co., Chicago, Ill., who has been appointed Vice President and General Manager, Dominion Ex. Co., Toronto, was born in Chicago, Ill., his father having been born in Ontario, where his mother came at an early age. He entered express service in 1887 as a wagon boy for the United States Ex. Co., and subsequently filled all positions up to General Superintendent of the Western Department, resigning in 1910 to organize and take into Chicago, the business of the Western Ex. Co., which was closely allied with the Dominion Ex. Co., and which, so far as business in the west is concerned, has passed to the American Railway Ex. Co., under the U.S. Railroad Administration.

### Telegraph, Telephone and Cable Matters.

John Ollerhead, one of the old time telegraphers, died at Heart's Content, Nfld., recently, aged 57.

The Great North Western Telegraph Co. has opened offices at St. Yvon, Que., Mimico, Ont., and Langruth, Man., and has changed the name of its office at Smiths Mills, Que., to Tomifobia.

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Metal & Thermit Corporation has removed its Toronto office to 15 Emily St.

The Independent Pneumatic Tool Co. has leased the entire 6th floor in the Otis Building, 600 W. Jackson Boulevard, Chicago, Ill., containing 12,000 sq. ft., and will occupy it for its general offices. J. D. Hurley, President, states that the great demand for pneumatic tools for government work and shipbuilding had forced his company to seek larger quarters.

Armstrong Whitworth of Canada, Ltd.—This company's tire and wheel plant at Longueuil, near Montreal, was formally opened July 31, in the presence of a number of railway officials and other guests interested in steel manufacture, who were shown the process of manufacturing tool steel and forging steel tires. After inspecting the works, the guests were given refreshments at the company's cafeteria, after which speeches were made by Senator G. G. Foster, K.C., Vice President, and M. J. Butler, C.M.G., Managing Director, Armstrong Whitworth Co.; D. H. MacDougall, President, Nova Scotia Steel & Coal Co.; Brigadier-General Sir Alex. Bertram, and W. D. Robb, Vice President, G.T.R.

The land occupied by the company comprises 216.6 arpents, the area of the buildings is 175,000 sq. ft., and between 600 and 700 men are employed. Three out of



the four methods of steel making are in process at the works, viz.: crucible process, electric furnaces, open hearth furnaces.

The steel making equipments consist of 72 pot crucible furnaces for manufacturing high speed steel; 1 three-ton Herroult electric furnace, 600 k.v.a.; 3 six-ton Herroult electric furnaces, 1,500 k.v.a. These electric furnaces are all 3 phase current, received at 22,000 volts, transformed to 100 volts at furnace. The carbon electrodes are 8 and 17 in. in diameter. There are two 18-ton open hearth basic furnaces fired with oil or powdered coal.

The boiler plant comprises 4 boilers of 500 h.p. water tube, fired with powdered coal; 2 boilers of 250 h.p. water tube, waste heat; and 1 boiler of 120 h.p. return tubular.

For the power plant, electric current is received of 22,000 volts, which drives motor generator set into d.c. current, 500 and 250 volts, for use on cranes, shop work, etc. Steam is used for driving hammers, steam intensifier, hydraulic forging presses. The 9 in. rolling mill engine is 18 x 30; the 20 in. rolling mill engine is 32 x 48, heavy duty. The tire and wheel rolling mill is equipped with a pair of simple 25 x 36 engines, fitted with a valve gear. The plant is heated by vacuum return system, using exhaust steam.

The forging shop equipment consists of one 500-ton steam intensifier hydraulic forging press, one 3-ton, one 1-ton, one 1,500 lb., one 800 lb., and one 500 lb. steam hammer.

The tire and wheel department equipment consists of one 2,000-ton steam intensifier hydraulic forging press, forging ingots into blooms for tire and wheel

work; one 600-ton steam intensifier hydraulic forging press, for decking tires; one 200-ton hydraulic press for marking tires, also a centering press; one 1,000-ton steam intensifier hydraulic press for dishing steel wheels, and making heavy forgings. This department is also equipped with continuous furnaces, two reheating furnaces, two electric servers, which handle the ingots from the furnace to the different machines. The powdered coal plant has a capacity of five tons an hour.

The small tool department is equipped with a repair shop for doing repairs throughout the mill, and a tool room for manufacturing small tools, such as drills, reamers, milling cutters, gauges and special tools of all description.

The rolling mills department contains one 3 high, 5 stand, 3 in. mill; one 2 high, 5 stand, 12 in. mill, and one 3 high, 20 in. mill, 2 in. stand, 20 in. mill.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 305 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Railway War Board—W. M. Neal, Montreal.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacramento Street, Montreal.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.

### CANADIAN PACIFIC RAILWAY COMPANY.

#### Dividend Notice.

At a meeting of the Board of Directors held to-day, the following dividends were declared:

On the Preference Stock, two per cent. for the half-year ended 30th June last;

On the Common Stock, two and one-half per cent. for the quarter ended 30th June last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account.

Both dividends are payable 1st October next, to Shareholders of record at 1 p.m. on 31st August instant.

By order of the Board,

ERNEST ALEXANDER,  
Secretary.

Montreal, 12th August, 1918.



## National Pneumatic Door and Step Control



### Enables You to Put Salesmen on the Car Platform

So long as the operation of your cars requires severe manual labor, just so long will you be obliged to seek men for their physique rather than for their intelligence.

The application of **National Pneumatic Door and Step Control** actually will do even more for you than widening the age limits and lowering the physical standards of applicants for platform service; it will also permit you to draw upon the salesman type of men who—

Will gladly exchange their place behind the counter for a position where the selling of transportation service and not the tugging of levers is the predominant part of the job.

Let us assist you to attract individuals from this great reservoir of men.



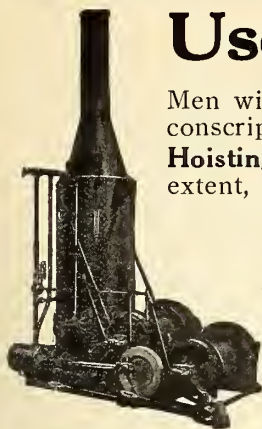
## National Pneumatic Company

New York

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Standard Derrick Engine, made  
in 7 sizes, from 10 to 50  
Horse Power.

## Use Machinery in Place of Men

Men will be harder than ever to get this year, and more costly to hire, owing to the conscription regulations.

**Hoisting and Haulage Machinery** will not only take the place of men to a large extent, but **will handle your materials at greater speed, and at a lower cost.**

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**Traveling Derricks**

**Lorries**, for track laying and other work.

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**Steel Buckets** for handling any kind of material, wet or dry.

**Steel Stone Skips** for Derrick or Cableway use.

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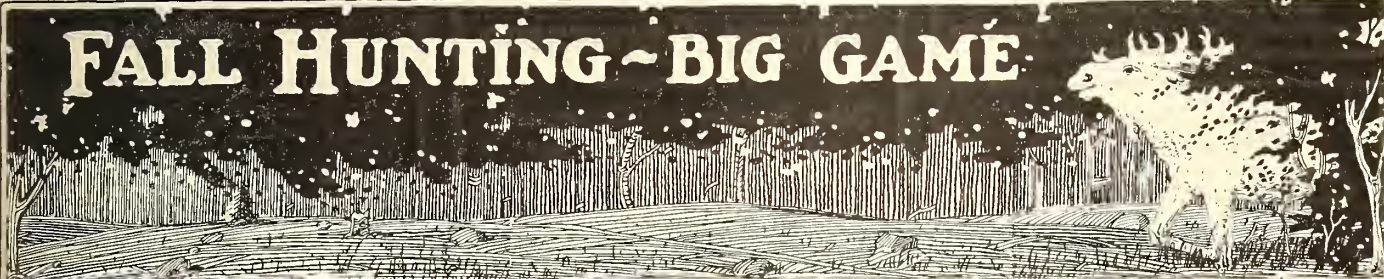
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**CANADIAN GOVERNMENT RAILWAYS in QUEBEC, NORTHERN ONTARIO and EASTERN MANITOBA**

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F. C. Armstrong, Canadian Government Railways Sportsman's  
Guide, Cochrane, Ont.

C. K. Howard, 294 Washington St., Boston, Mass.

C. G. Orttenger, 301 Clark St., Chicago, Ill.

H. H. Melanson, Passenger Traffic Manager, Moncton, N.B.



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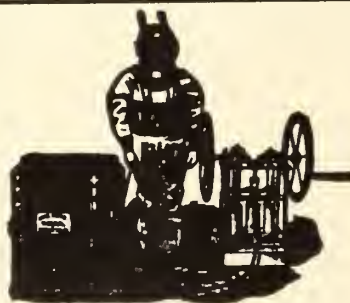
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All persons are hereby given notice that the undersigned have purchased the steamer "Oceanica" from Western Steamship Corporation, and all persons having liens or claims against said steamer "Oceanica" must immediately file same with undersigned for forwarding to late owner.

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A 275 k.w. compound wound railway generator, manufactured by Bruce Peebles, England. Just received and has never been used. At normal speed, 550 volts at no load, 600 volts at full load. Twin machine to one that has been used by the advertiser, and has given absolute satisfaction for several years. Full specification furnished on request. Was contracted for before the war and price should be very attractive.

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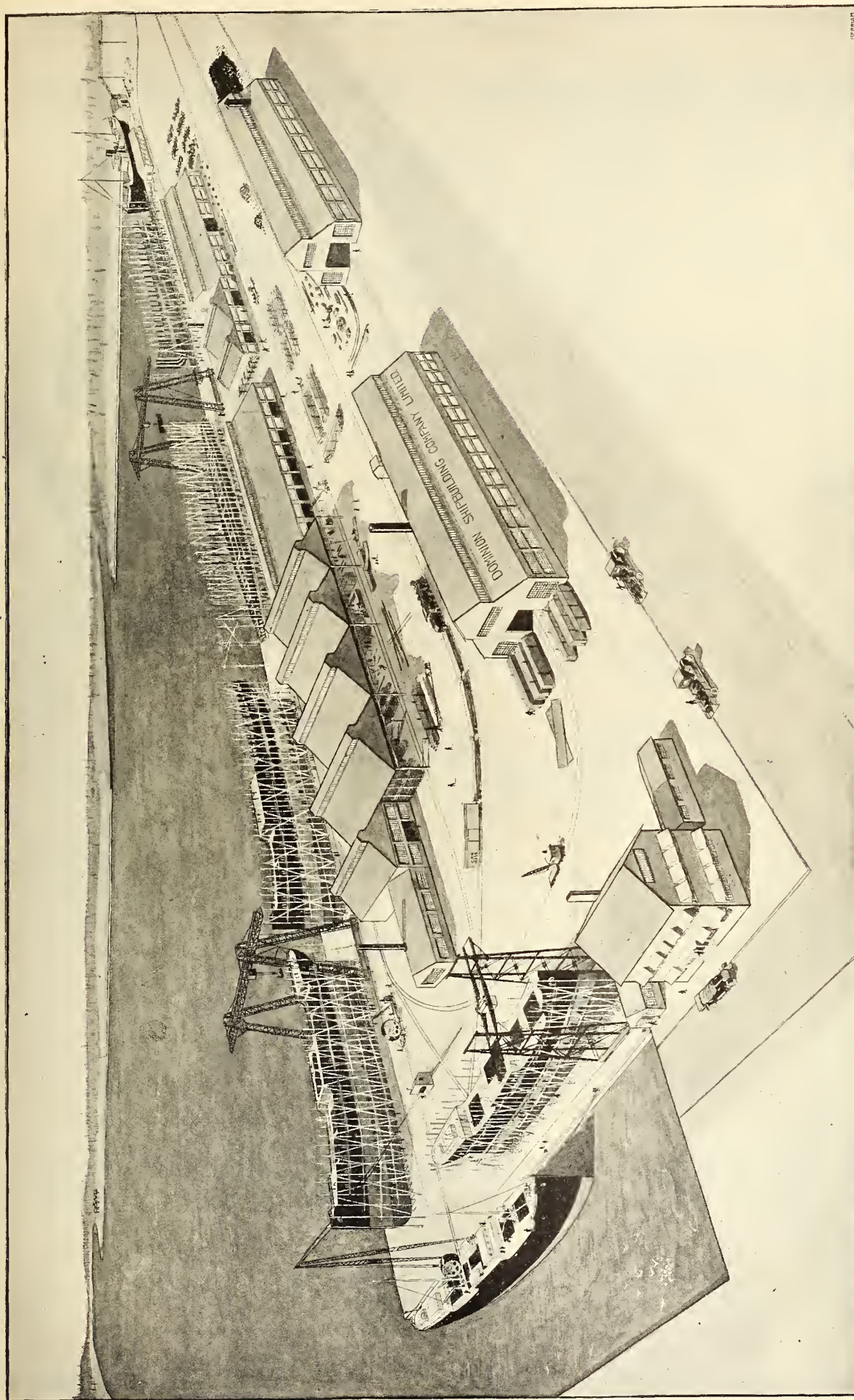
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## Save Power — Rails — Equipment — Expense !

The Lincoln Dynamotor, mounted on track wheels, cart or Ford, transforms trolley current into a welding current of low voltage, high amperage and reversed polarity—and under perfect control.

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are welded to the rails on open track in 45 seconds, or at the rate of 150 bonds per day, using but  $\frac{1}{6}$  kilowatt per bond. The copper is fused into the steel of the rail, making a union that is perfect and permanent—lowering the resistance of the return circuit—and producing an immediate and lasting saving of power.

In paved construction, by the Lincoln process of Arc welding,

*Lincoln  
Bond  
Welded  
to Rail*

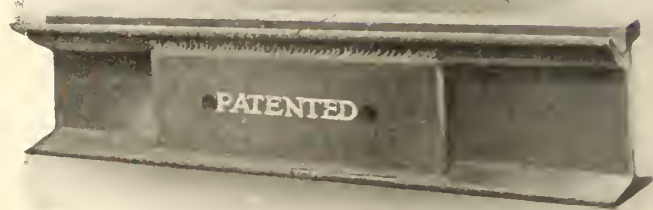


*Bond  
Removed  
Showing  
Contact  
Area*



### Gailor Rail Joints

are installed at the rate of 2 to 2- $\frac{1}{2}$  per hour, by three-man crews, under three-minute head-way, without interrupting traffic. These welded joints "stand up" as long as the rails themselves and provide ample and permanent conductivity in the return circuit.



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The Lincoln Dynamotor and equipment is a travelling repair shop, capable of handling quickly, economically and right on the spot and the minute, any and all kinds of carbon and metallic welding. It's one of the most effective aids in keeping equipment on the job and avoiding tie-ups.

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*Canadian Representatives of*

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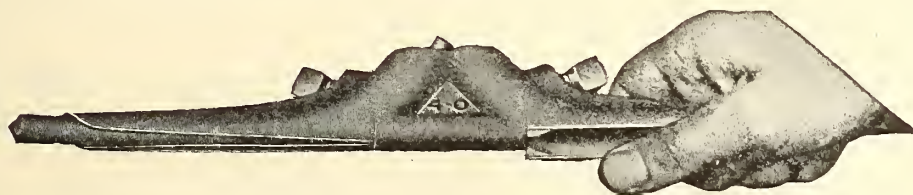
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*ALL DREW OVERHEAD LINE MATERIAL* helps you affect worth-while economies in your operating and maintenance departments. Drew Clinch Ears, Frogs and Crossings give you maximum mileage at minimum cost.

During these times when every dollar should do double duty, DREW quality will be thoroughly appreciated on your lines.

A Good Splice and a Quick One——

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Note the smooth under-run. That's what every maintenance man appreciates. It's all due to the lugs cast on the inside of the lips—an exclusive patented Drew feature. When the wire is clinched, the notch made by the bend in the wire is completely filled. There can be no gap—no bump—no arc. That's one reason "Samsons cost less per car mile."

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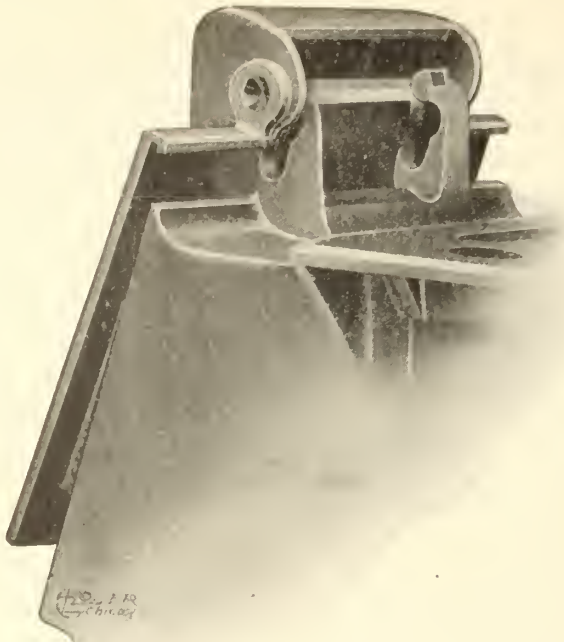
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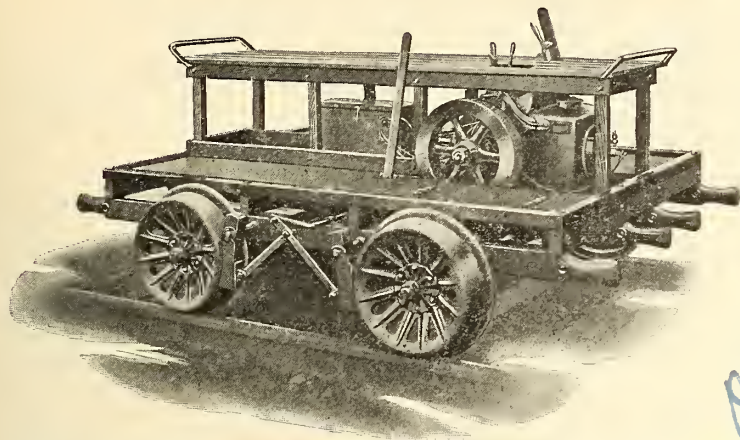
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# National Railway Motor Cars



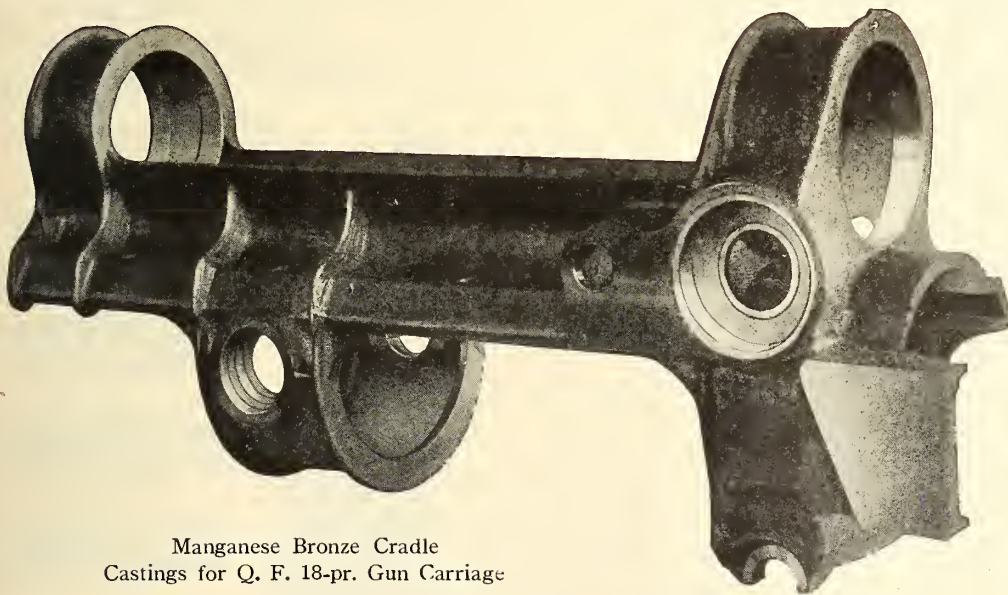
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**Castings**  
of Every  
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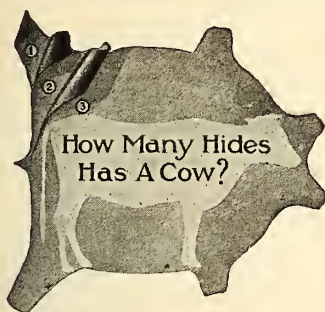
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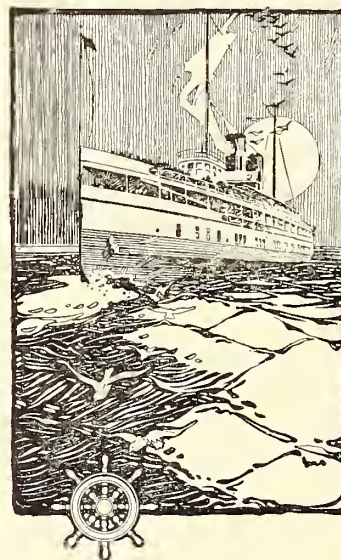
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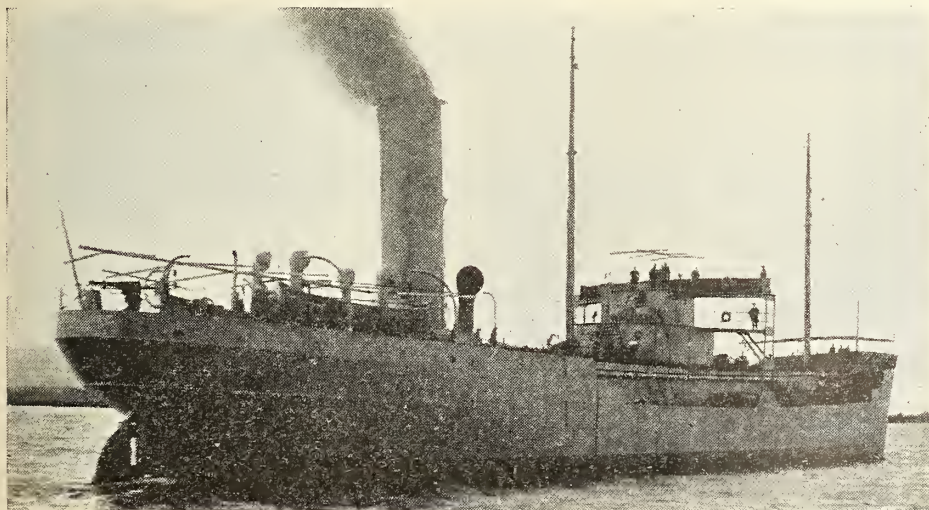


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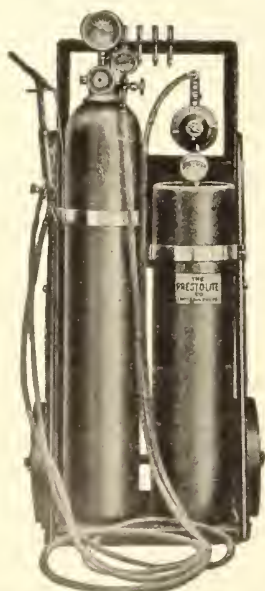
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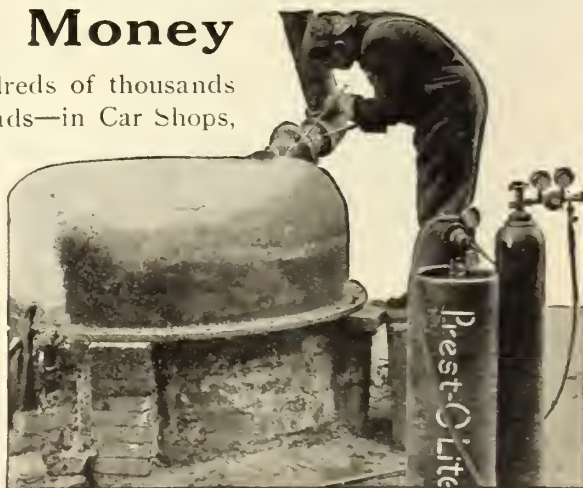
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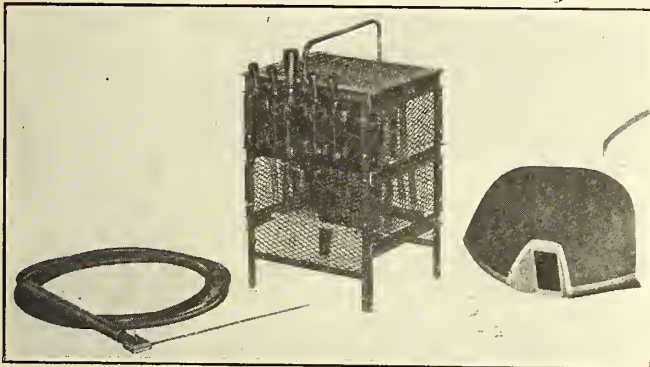
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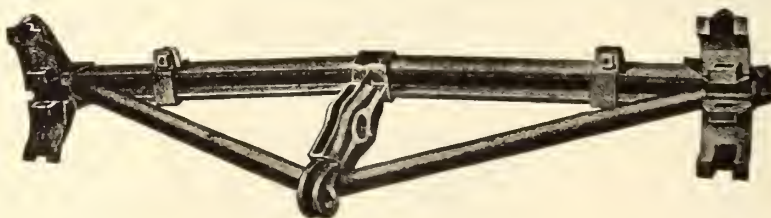
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25,000-TON FLOATING DOCK, 600 FEET LONG  
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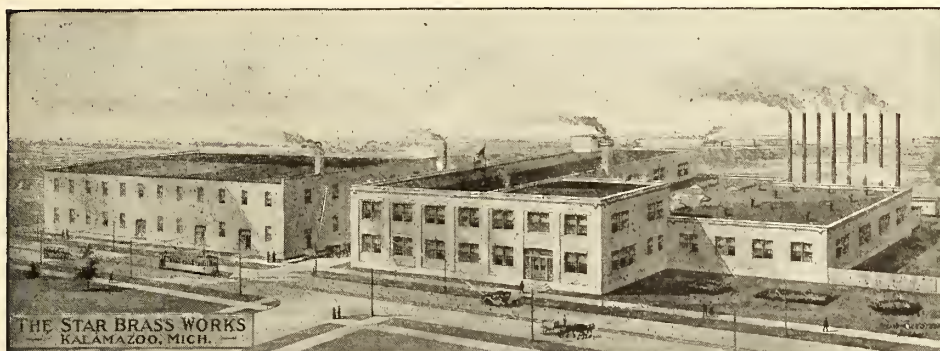
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### COMPLETE EQUIPMENT

Air, Electric, Hydraulic Tools. Electric and Acetylene Welding.

Ship Repair and Fitting-Out Basin Adjoining Works and Montreal Harbour, with Wharf 1000 Feet Long. Deep-Water Berth.

Manufacturers of CARGO WINCHES, WINDLASSES, ASH HOISTS, STEAM AND HAND STEERING GEARS  
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Thoroughly equipped and up-to-date Shop. Early Deliveries Can Now Be Given.



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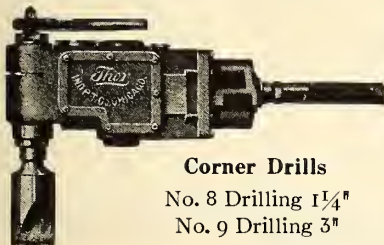
*Largest Exclusive Trolley Wheel Makers in the World.*

**Kalamazoo**

**Michigan**



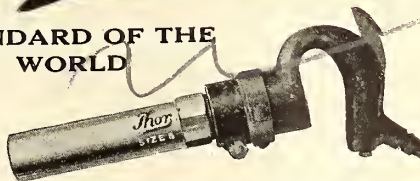
**PISTON** Air Drills with pressed steel connecting rods and pistons, corliss valves and roller bearings; one-piece pneumatic riveting hammers, can't come loose; chipping hammers with single valve—no vibration. Corner Drills for use in close quarters.



**Corner Drills**  
No. 8 Drilling 1 1/4"  
No. 9 Drilling 3"

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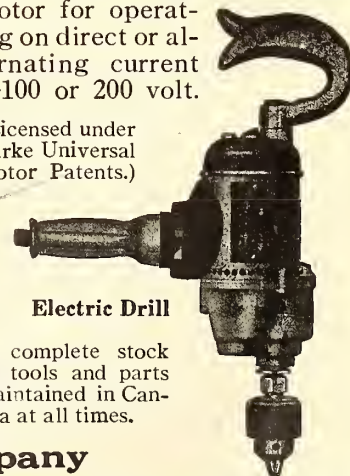
STANDARD OF THE  
WORLD



**Single Valve Chipping Hammer**

**PORTABLE** Electric Drills equipped with a Universal Motor for operating on direct or alternating current—100 or 200 volt.

(Licensed under  
Burke Universal  
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A complete stock of tools and parts maintained in Canada at all times.

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Chilled Tread Cast Iron Car Wheels for All Services  
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*Engineers, Manufacturers and Erectors of*

### STEEL STRUCTURES

Railway and Highway Bridges, Buildings, Turntables, Electric and Hand Power  
Travelling Cranes, Coal and Ore Handling Machinery, Lift Locks and  
Hydraulic Regulating Gates, Transmission Poles and Towers

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MARINE BOILERS AND ENGINES**

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Double Elliptic Street Car Springs with Cast Ends

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LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.  
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*Manufactured by*

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## Why the Columbia Hot Shot Battery Should Appeal to You

But two connections to make

Durable, weather proof casing

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All internal connections permanently soldered

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Successfully used for motor car ignition and all heavy duty dry cell service.

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We are the only Canadian manufacturer making Steel Castings from Canadian natural resources, and operating their own ore mines.

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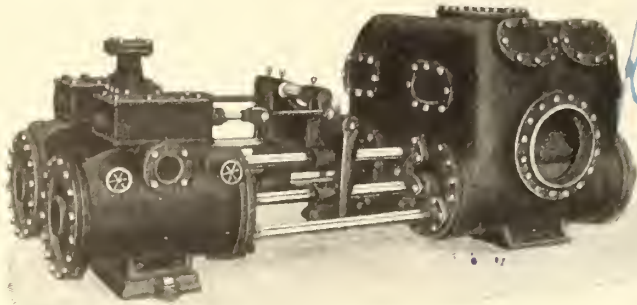
Steel Car Wheels, Locomotive Driving Wheels, Car Castings of all descriptions. Engine Frames.

*Equipped to handle large orders promptly.*

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# High-Class Pumping Machinery for Canadian Ships



Feed Pumps

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### BASIC OPEN HEARTH STEEL

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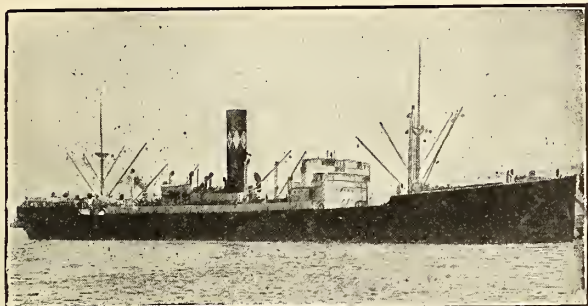
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S.S. Kandahar Equipped with Scotch Boilers  
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From 12 to 20 per cent. of the fuel consumed on vessels using saturated steam is wasted, the amount depending on whether the engines are compound, triple or quadruple expansion. Moreover, a large part of this fuel is carried in the bunkers for long distances before it is thrown away.

Fire tube superheaters prevent this fuel waste by eliminating the cause—cylinder condensation.

They provide an increased steaming radius from a given quantity of fuel.

You cannot afford to leave your vessels unequipped.

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McGill Building, MONTREAL

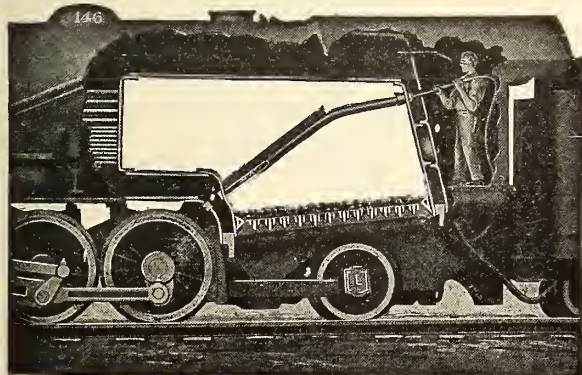
Makers of Base-Supported and 100% Rail Joints for Standard, Girder and Special Rail Sections. Also Joints for Frogs and Switches, Insulated Rail Joints and Step or Compromise Joints.

**PROTECTED BY PATENTS**

*Grand Prize, San Francisco, 1915*



Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.


Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

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Head Office For Canada  
St. Henry, MONTREAL

Toronto Office  
Traders Bank Building





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prevails in your plant? Does it take two men to do one man's work.

Why don't you replace that old antiquated tool with a new up to date

### Reece's New Screw Plate

These pictures do not exaggerate conditions as you can actually see them, if you will visit Machine Shops throughout the country.

Lessen your cost by giving your mechanics a REECE'S NEW SCREW PLATE.

**Butterfield & Co., Inc.**  
Rock Island, Que.

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Canada's Ships and Shells Depend on Oxygen

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If your many customers will co-operate with us by returning all Cylinders to our Charging Plants immediately they become empty. While we have more than doubled our production of Oxygen and Acetylene, we are still some hundreds of Cylinders short on orders placed, owing to the manufacturers being held up by U.S. Government orders. The balance will be coming along soon, and the present difficulty can be overcome if consumers will remember that, by returning all empty Cylinders immediately, not only are they helping us and our many other customers but they are also insuring their own supplies of Oxygen and Dissolved Acetylene.

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Manufacturers, in Canada, of all requisites for the Oxy-Acetylene Process.

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Embrace millions of acres of virgin pine and spruce, broken by thousands of lakes and streams. Is it any wonder that the Highlands of Ontario is the mecca for out-door men and women.

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are all famous playgrounds. Modern hotels afford city comforts but many prefer to live in tent or log cabin—your choice at reasonable cost. May we help you plan your trip? Write or call for illustrated literature.

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Capital Authorized ..... \$10,000,000  
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Reserve Fund ..... 7,000,000

Head Office: Toronto.

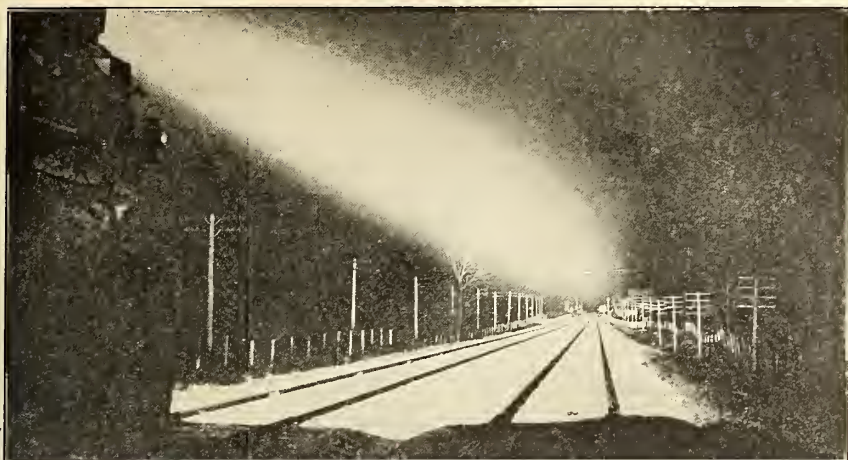
Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the World.

Sterling and New York Exchange bought and sold.

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Branches throughout the Dominion of Canada.





Actual photographs taken on the Chicago, Rock Island & Pacific R.R. with no other light but the Pyle-National Electric Headlight. The station seen is a half mile from the engine.

**T**HIS is the kind of light produced by 40,000 Pyle-National Electric Headlights. Over 4,000 of these lights are in service in Canada. Our new "E" Type Turbo Generating Set will positively show the lowest evaporation of any turbine that has ever been developed for this service per E.H.P. Lowest operative maintenance cost. Every equipment guaranteed.

**The Pyle-National Co.**  
CHICAGO

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"Springhill"

Steam and Gas Coals

General Sales Office

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of all descriptions to stock  
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Brass Wearing Parts for Locomotives. Journal Bearings for Freight and Passenger Service. BABBITTS. Miscellaneous Brass Castings for Railroads.

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# CARTER'S

**Highly Oxidized  
Pure Red Lead is  
Carter's Genuine Dry Red Lead**

It forms a film of uniform thickness on all metal upon which it is applied, that prevents loss from rust and corrosion. It is

**Finely Pulverized**

Making it easy to use when mixed with pure linseed oil, and has the greatest covering capacity.

It is a well known fact that Genuine Red Lead is the best protection paint for metal, that can be made. Insure yourself against loss by rust or corrosion by applying a coat of paint made from Carter's Genuine Dry Red Lead.

We also manufacture Orange Lead, Litharge, and Dry White Lead.

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Builders of STEEL TUGS, SCOWS and DREDGE HULLS

Special Attention Given to all Kinds of Hull Repairing.

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**ECONOMICAL—SYSTEMS OF MERIT—WILL NOT FREEZE**

Vapor Systems, Pressure Systems, Vapor and Pressure Systems, Hot Water Systems, Electric Systems

Automatic Heat Control for all Systems—Ventilators

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Canadian manufacturers of the Celebrated  
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## Brake Shoe Scrap Reduced To The Absolute Minimum



The Reinforced Brake Shoes here pictured were all worn down practically to the steel back.

The average weight of 100 shoes taken at random from this pile was about 5½ lbs.

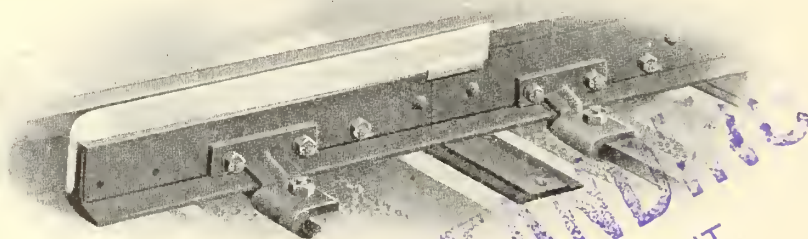
The roads using these shoes received about twice as much brake shoe service as could have been gotten from ordinary unreinforced shoes. It paid them and it will pay your road to use Reinforced Brake Shoes.

Manufactured in Canada.

**Dominion Brake Shoe Company, Limited**

350-356 St. James Street, MONTREAL

The Holden Co., Ltd., Agents



## Ramapo Manganese Reinforced Switch Point

Note that the Switch Rail is continuous to the end of the Switch, leaving no joint to work loose. This construction in hard service will outwear all rail point five to one.

**Canadian Ramapo Iron Works  
Limited**

NIAGARA FALLS

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## Railroad and Steamship Upholstery

**CHASE**



**MOHAIR  
PLUSH**

What fabric is universally used for upholstery? Mohair Plush.

Why? First—Durability. Second—Fast color. Third—Rich appearance. Fourth—Sanitary.

How long does it last? According to quality, eight to twenty-five years.

What evidence that it is sanitary? Careful scientific tests through many months by some of America's leading railroads, hotels and homes. Particulars gladly furnished on request.

What is Mohair? The lustrous fleece of the Angora goat.

How strong is Mohair compared with wool? According to Government tests more than two and one-half times.

For more than thirty years CHASE Goat Brand Plush has been the standard with America's largest railroads and steamship lines.

Recently there was exhibited a seat covering in excellent condition after a constant service of twenty-four years. It was upholstered with CHASE Goat Brand Plush.

**L. C. CHASE & CO.  
BOSTON**

NEW YORK CHICAGO  
DETROIT SAN FRANCISCO

Leaders in Manufacturing  
Since 1847



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## The Canadian Bridge Co., Limited

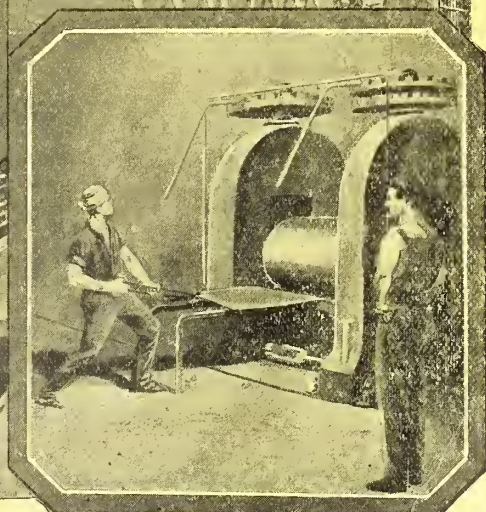
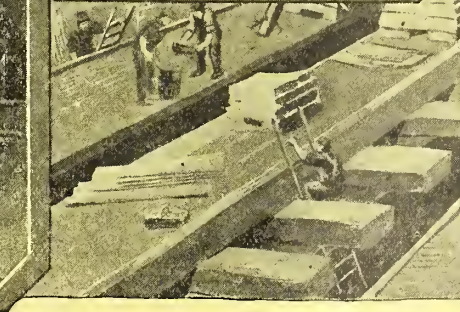
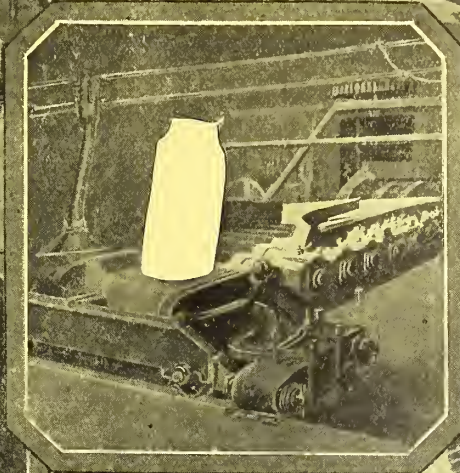
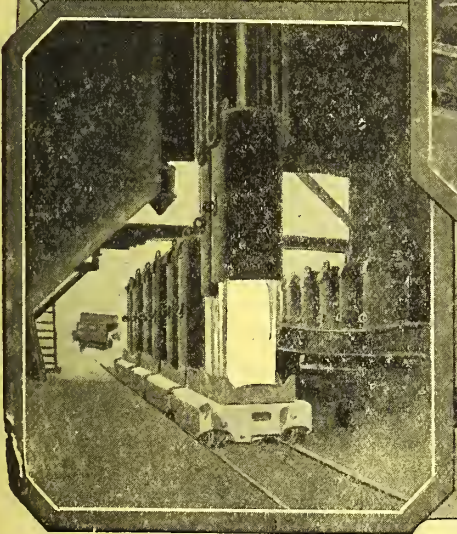
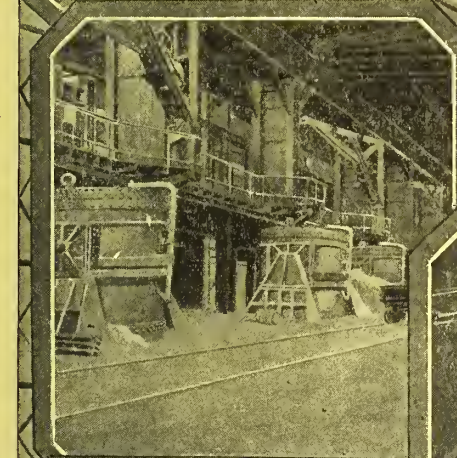
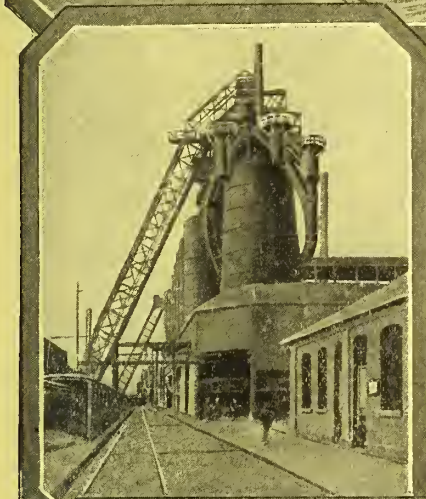
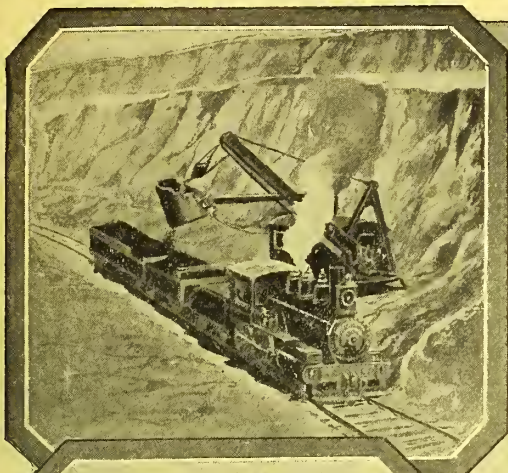
Walkerville, Ontario

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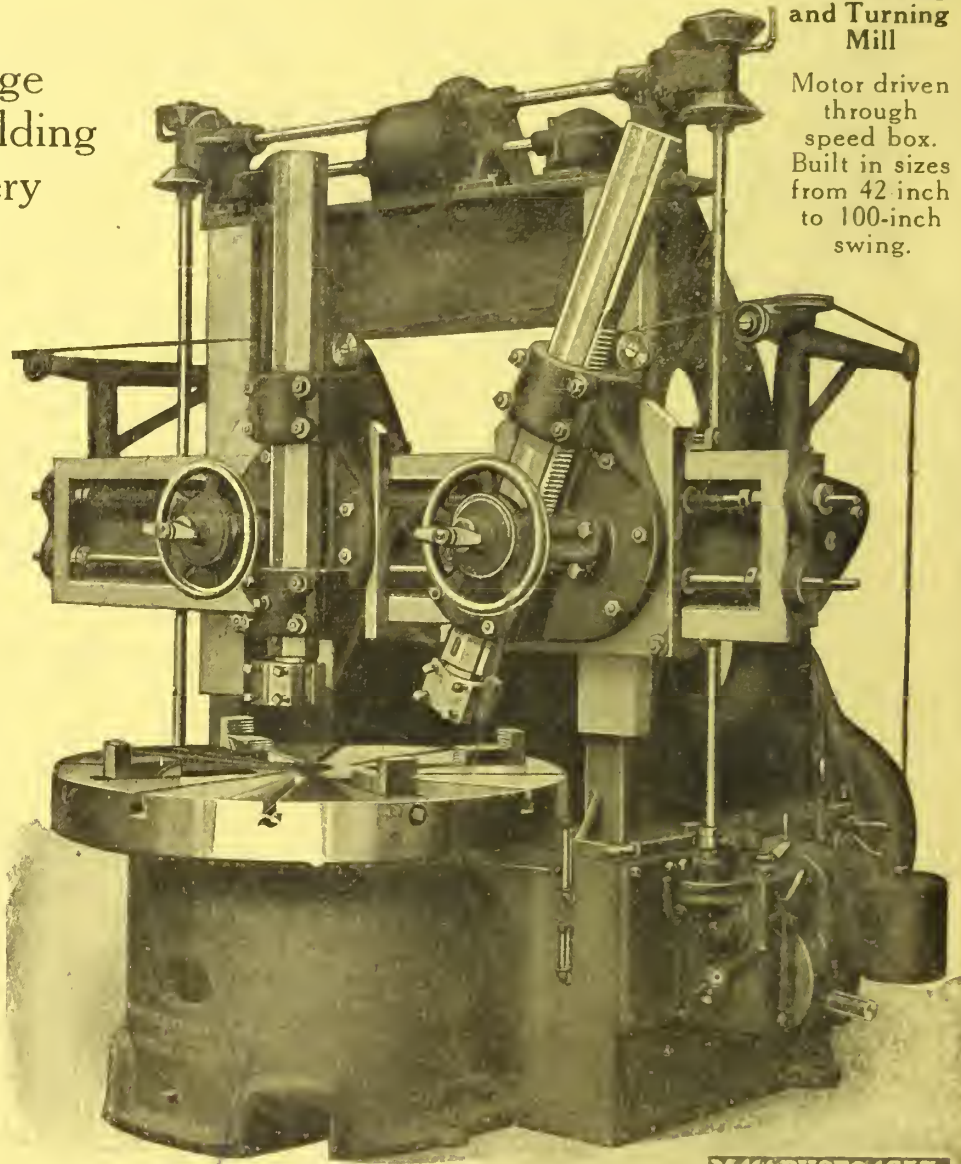
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Locomotive  
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Car Shop  
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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 248

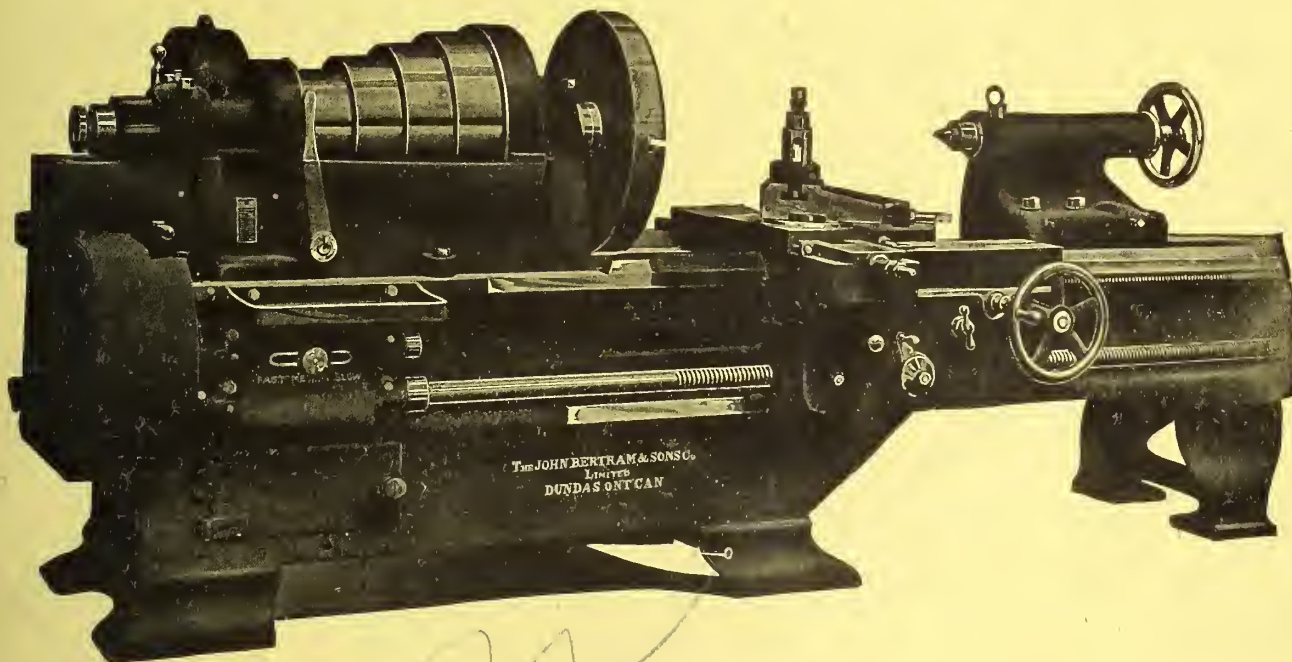
TORONTO, CANADA, OCTOBER, 1918

Subscription Rates, Page 445



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MACHINE  
TOOLS



### Double Back-Geared Gap Lathe

26-inch x 42-inch Swing.

BERTRAM Machine Tools are strictly up-to-date in design. Built to give economical, efficient and long service.

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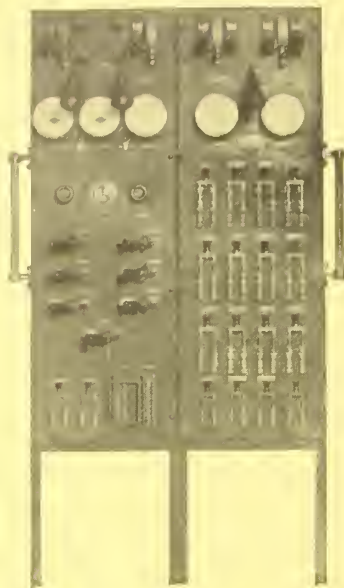
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## Switchboards for Marine Installations



### Space Occupied Reduced to a Minimum

Some noteworthy features are:

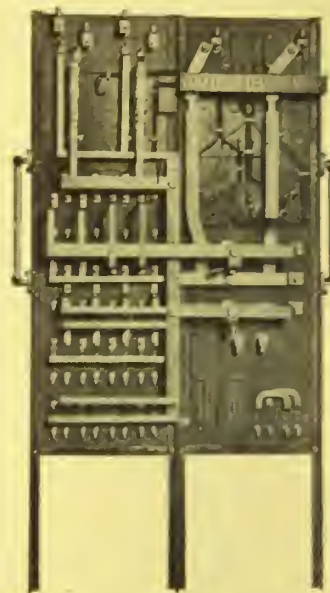
7-inch instruments used throughout. On the left hand panel a special type of knife switch is used, having the handle attached to the switch at the hinge, rather than at the end of the blade.

The copper connections and details on the rear are entirely self-supporting without the use of supporting brackets, and the connections have been held as closely to the panels as is possible, and at the same time secure necessary clearance between opposite polarities.

Due to constant motion at sea it is necessary to interpose rubber packing between the angle-iron frame work and the rear of the panels, and also to support the panels on a cross member of angle iron to relieve the mounting bolts of the weight of the panels.

The panels are composed of "Ebony Asbestos," which is stronger than slate and has higher fire resistance qualities.

We are ready to handle marine work of every kind—Ask our nearest office.



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Which have stood the  
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Manufactured by

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*Illustrated  
Nov 9/18*

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## And the crane does work that labor cannot do

For instance, the crane will switch the 4, 5 or 8 loaded cars quickly to the desired spot. And then will unload the material in double quick time. The car of scrap shown here was unloaded in 2 hours' time, which would have taken 8 men a full day of 10 hours to do the same work. And then there are many other duties for the crane, such as unloading coal, coke, ore, sand, etc., and handling of all material. You can use a Brownhoist day and night. And you can depend upon it. The Brownhoist may cost more, but is worth it.

**The Brown Hoisting Machinery Company, Cleveland, Ohio, U. S. A.**

Engineers and Manufacturers of Heavy Dock Machinery,  
Bridge Cranes, etc., as well as smaller Cranes and Hoists

Branch Offices in NEW YORK, PITTSBURGH, CHICAGO AND SAN FRANCISCO



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*We Manufacture in Canada the Following Equipment :*

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This fitting is a new device and saves a large percentage of the labor cost on installation of any pipe frame work, for switchboards, switch and bus structures, and greatly improves their appearance. This device is also ideal for Architectural and Marine use for pipe railings, etc.

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Trolley and Catenary Construction Material.

We also handle electric passenger, freight, and express cars and locomotives of all types and descriptions.

Keep this list before you whenever you are in the market for equipment and supplies.

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# WORKING FOR UNCLE SAM

RATHBONE, SARD & CO.

AND

DAVIS-BOURNONVILLE APPARATUS



*Day Shift  
Oxy-Acetylene Welders*



*Night Shift  
Oxy-Acetylene Welders*

*Oxy-Acetylene Welders  
and Government Inspectors  
at the Rathbone,  
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*Fully Equipped with  
Davis-Bournonville  
Oxy-Acetylene System of  
Acetylene Generation and  
Welding Apparatus.*

THIS is one of the many plants in the United States fully equipped with the Davis-Bournonville system of Oxy-Acetylene Welding, including acetylene generation on the premises, now engaged on 100 per cent work for Uncle Sam and his army and navy overseas and at home.

There is more Davis-Bournonville oxy-acetylene apparatus than of any other make in the metal-working plants of the country—in the steel mills, foundries, ship yards, munition plants, aeroplane factories, sheet metal working plants, general repair shops, and in the U.S. Navy Yards and with the U.S. Army at home and abroad—because it “leads the world” in range, efficiency, and has the longest successful experience back of it.

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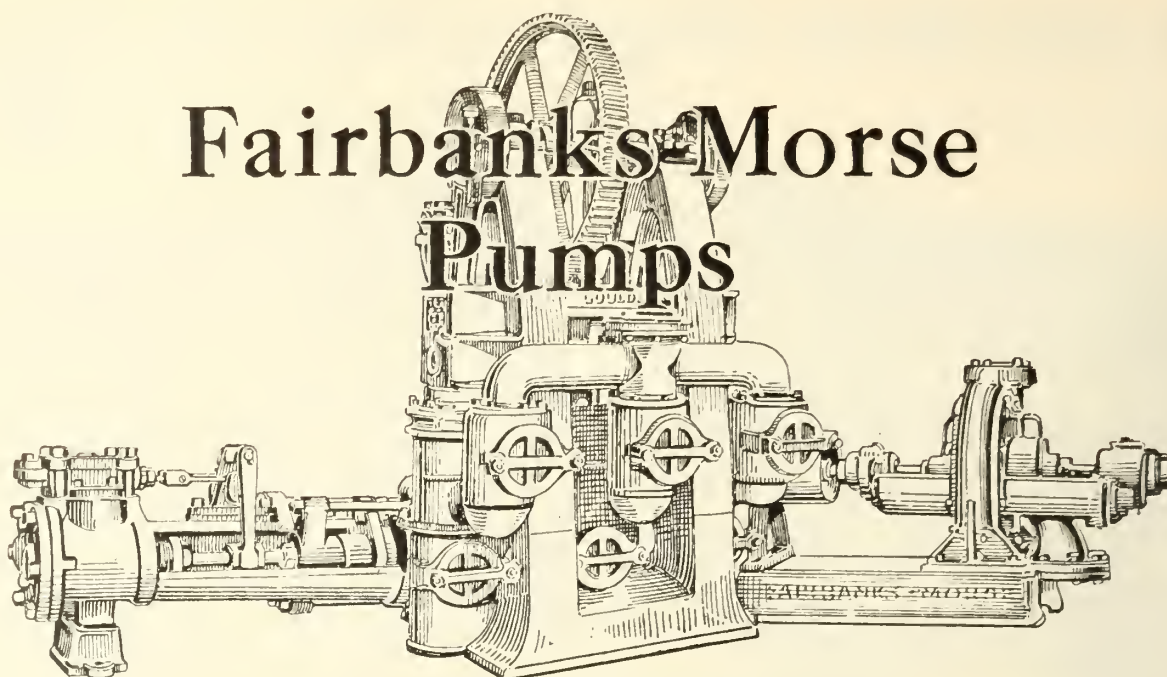


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# Fairbanks-Morse Pumps

**for every purpose**

High or Low Pressure—Small or Large Capacity Hot or Cold—Water or any other Liquid.

We have sold thousands of pumps for nearly every purpose, from the small cutting fluid circulating pump to the large million gallon heavy duty pump for Municipal Water Service.

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## RUB-STEEL VALVES

Pump Valves have always been a source of difficulty until the invention of the Rub-Steel. This is a combination of steel with rubber, which has given perfect service under nearly every condition.

Specify Rub-Steel on your next order.



## CLOVER GRINDING COMPOUND

A perfect combination of hard grease and abrasive material for all kinds of fitting work. The grease holds the abrasive on the job under any temperature up to 250°. Many Locomotive Shops, Engine and Pump Builders are replacing the old slow methods of scraping in by Clover Grinding Compound. Try it on the very next job.

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*"Canada's Departmental House for Mechanical Goods"*

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# PRODUCTS

*Quality First*

KILL  
LAST AD.



National Trolley Guard on duty in a Canadian city.

## Guarding the Grade Crossings with National Trolley Guard

National Guard is a conductor in the form of an inverted trough of open wire mesh. If the trolley wheel leaves the wire the Guard catches it and furnishes current to carry car and passengers safely out of the danger zone.

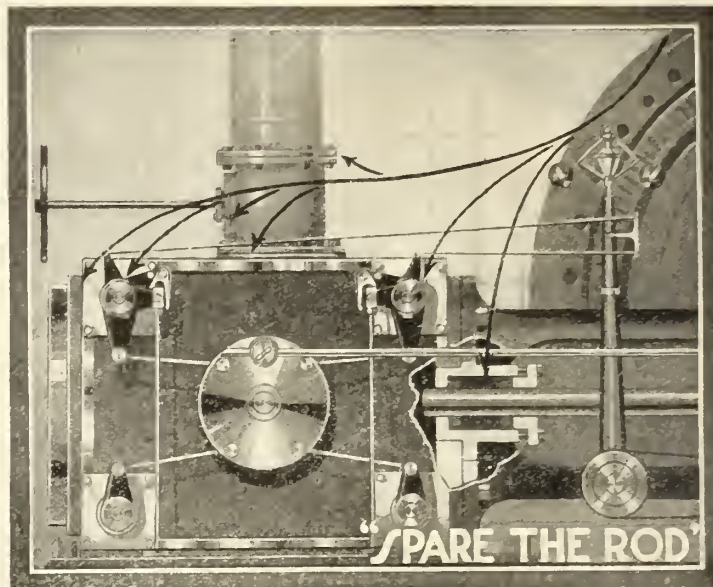
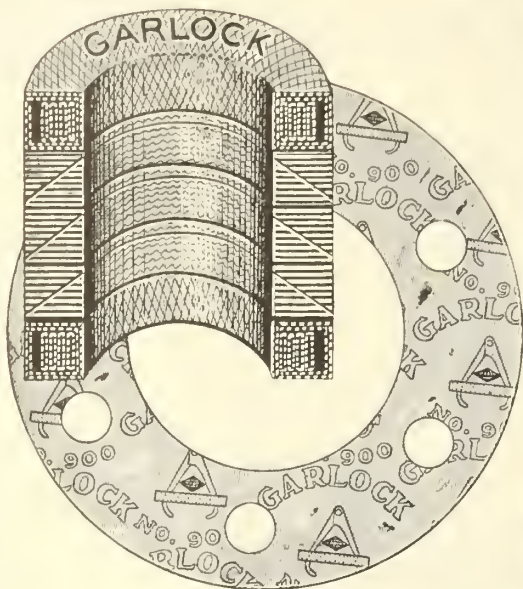
National Guard is on duty at hundreds of crossings. After a company has once watched the first installation it usually protects the rest of its crossings with National Guard.

"Guarding the Grade Crossings" describes National Guard and illustrates various installations.—Write for a copy.

**THE OHIO BRASS COMPANY, Mansfield, Ohio**



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## Pointers on a Well Packed Engine

For high pressure piston rods and valve stems use Garlock No. 200.  
 For medium pressure piston rods and valve stems use Garlock No. 446.  
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 For vibrating piston rods, or rods not running true, use Garlock No. 550.  
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Garlock Packings are made in over two hundred styles and combinations to meet every known requirement. We will assume entire responsibility in selecting the proper styles or combinations of our packings to work successfully and economically under any stated condition; and if goods are not fully satisfactory to purchaser we will refund promptly the cost of same. A card will bring our catalog which illustrates and describes our various styles of packings.

## The Garlock Packing Company

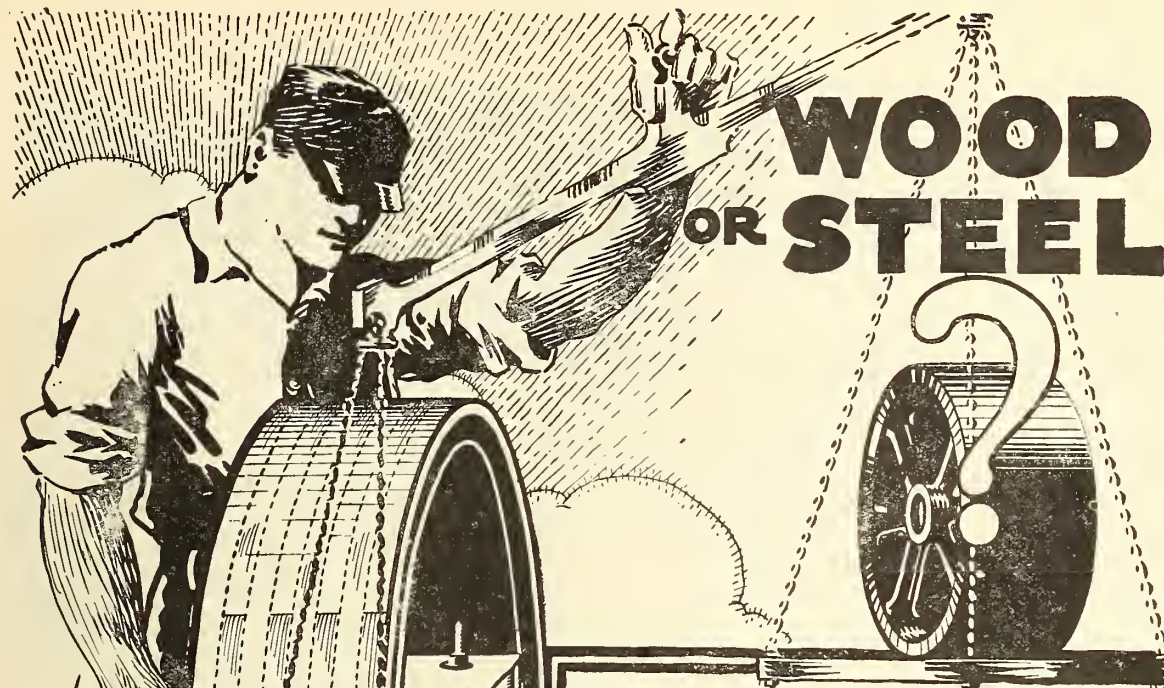
Hamilton, Canada

### BRANCHES :

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Toronto, Ontario	-	-	404 Continental Life Building
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Calgary, Alberta	-	-	211 Eighth Avenue West







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There is a United States embargo on steel except for war orders, but we do not need to use this as a particular argument to persuade you to buy Dodge Wood-Split Pulleys.

Dodge Wood-Split Pulleys have sufficient qualities of their own to justify their use at any time in preference to metal pulleys.

Because of greater adhesion they provide a better belt surface, consequently, there is less belt slippage. They are lighter, hence there is less weight friction. Both of these qualities prevent waste of power. They also cost less to buy than metal pulleys.

And, you can get Dodge Wood-Split Pulleys when you order them—No waiting—No delays.

We ship in all sizes from 4-inch diameters up to 6-feet diameters on the day orders are received.

**The Dodge Manufacturing Co., Limited**

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Also 770 St. Paul St. West, Montreal

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## WOOD SPLIT PULLEYS



# GALENA OILS

HAVE NO EQUAL IN  
QUALITY, EFFICIENCY and ECONOMY

SOLE MANUFACTURERS OF  
Celebrated Galena Coach, Engine and Car Oils  
*LUBRICATION ON A GUARANTEED BASIS*

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ELECTRIC RAILWAY LUBRICATION  
A SPECIALTY

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Perfection Valve and Signal Oils

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avoiding smoked and cracked chimneys and crusted  
wicks.

*TESTS AND CORRESPONDENCE SOLICITED*

## Galena Signal Oil Company

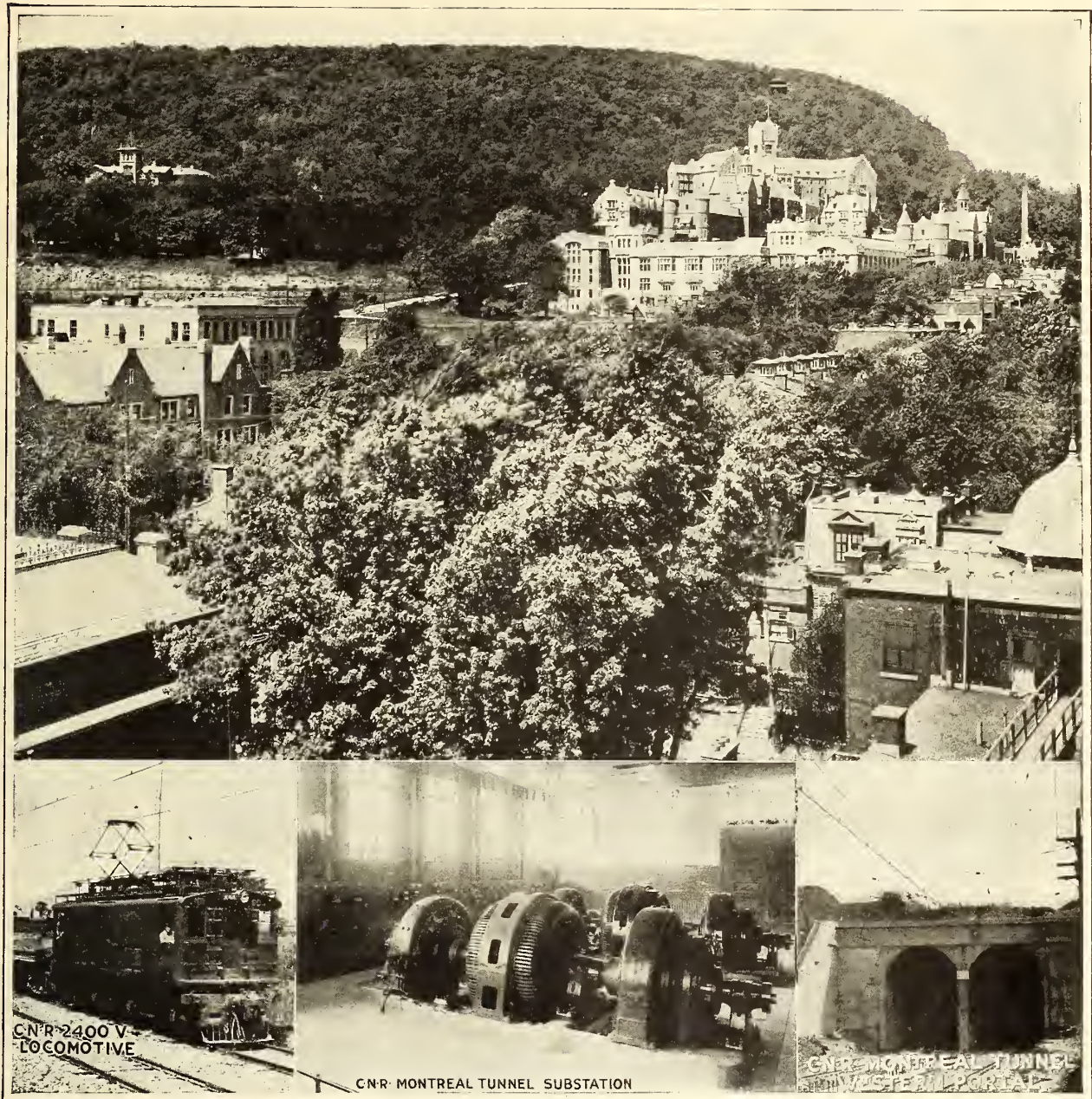
Works

Franklin, Pa., and Toronto, Ont.

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Canadian Representative — Robert McVicar, 603 Shaughnessy  
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## Montreal Tunnel and Terminal C.N.R.

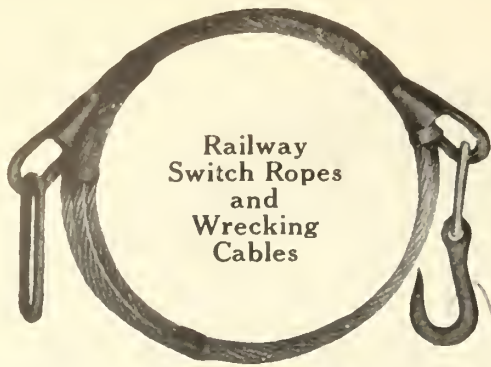
Our 2,400 volt. D.C. System selected as most economical for their combination of Trunk-Line Locomotive and Suburban Motor Car Service.

We are well equipped to deal with all the various problems arising out of Electrical Transportation and our Engineers will be glad to co-operate in solving them.

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LIMITED

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SAFETY FIRST

Use

**"DOMINION" Wire Rope**

Tough—Strong—Durable

The DOMINION WIRE ROPE Co., Limited

Montreal,

Winnipeg

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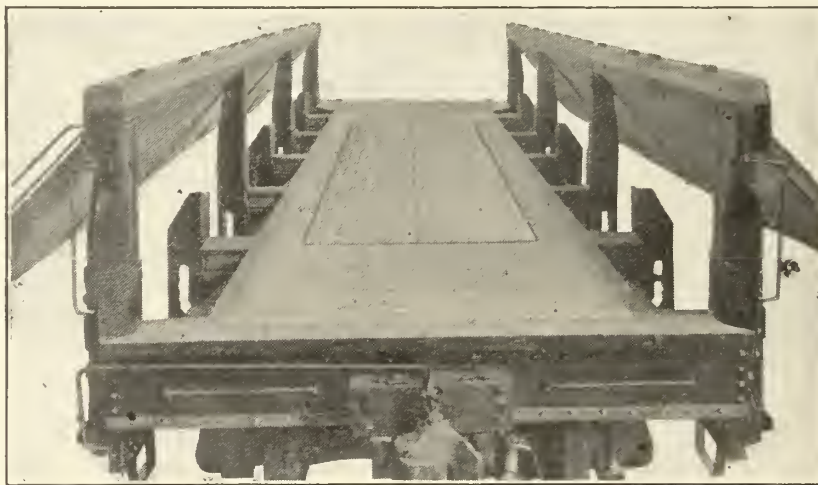
## Side Ballasting With One Side Closed

Canadian Government Railways Standard Ballast Car

25 per cent More  
Door Opening  
Area.

Less Stakes to Ob-  
struct the Dumping  
Material.

No Clogging of the  
Material or  
Boulders between  
the Plow and  
Stakes.



Dumps Clean and  
Quicker in any  
Material.

No more Breaking  
of Stakes or Cables.

The Car that will  
Give Maximum  
Service with  
Minimum Repairs.

*Write for Booklet No. 19 for further information.*

—DESIGNED, BUILT AND PATENTED IN CANADA—

### The HART-OTIS CAR CO., Limited, MONTREAL

We are Headquarters for General

## MARINE SUPPLIES

Blocks, Rigging Screws, Winches,  
Windlasses, Marine Lamps  
and "Shipmate" Ranges

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# War Output in Commercial Shapes

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8", 9", & 12"

Fluted

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Size.

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Cogged any size  
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Locomotive Fr'g.

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Car Axles

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Harrow Discs  
Soft Centre  
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Any thickness and  
width up to 20"

## Castings

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Cars  
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Ship Castings  
Rolling Mill  
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Miscellaneous

## Specialties

Draft Arm  
Draft Gears  
Truck Side Frames  
Bolsters  
Car Couplers

*We Specialize on High Carbon and Alloy Steels*

**The Dominion Foundries and Steel  
Limited**

**HAMILTON**

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**CANADA**



# MUDGE MOTOR CARS

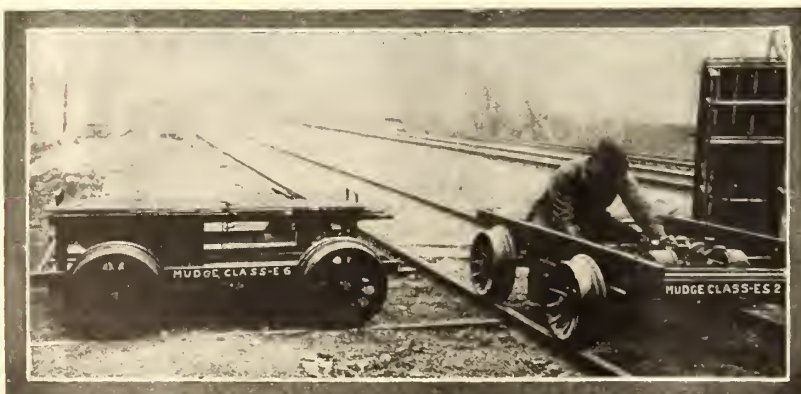
## INTER -



## CHANGE -



## ABILITY



**Mudge Engines and Parts  
Are Interchangeable**

We use but two types of  
engines on our sev-  
eral models

**This Is Very Important  
To You**

*Because:*

1. In cases of emergency out on the line, the engine or parts of light Inspection types can be replaced by similar engine or similar parts from a section type, and vice versa.

*And*

2. It is only necessary to keep a small stock of repair parts on hand at your storehouse.

*Therefore*

Why not standardize with Mudge Motor Cars and avail yourself of our interchangeable and patented features?

May We Send You Complete Information?

**Mudge & Company**  
Railway Exchange, Chicago, Ill.

# ALWAYS READY



# Keystone Car Signs

## Standard on the Seattle Municipal Railway



The popularity of Keystone and Hunter types of illuminated car signs is not limited by geography. They are just as greatly appreciated on the shores of the Pacific as on the Atlantic Shores.

So it's not surprising to find Keystone car signs the standard of the Seattle Municipal Railway which appreciates that car signs legible beyond braking distance cuts down unnecessary stops (due to misunderstanding by intending riders) and ADVERTISE THE SERVICE.

### Electric Service Supplies Co.

MANUFACTURERS

PHILADELPHIA  
17th and Cambria Sts.

NEW YORK  
50 Church St.

CHICAGO  
Monadnock Bldg.

### Lyman Tube & Supply Co., Ltd.

CANADIAN DISTRIBUTORS

MONTREAL  
Lyman Tube Bldg.

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302 Donalds Block

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## The Needs of the Empire

NEVER BEFORE in the history of Canada has greater opportunity been offered her Sons and Daughters to render SERVICE to the Empire;—and

NEVER BEFORE have the needs of the Empire demanded as high a standard of QUALITY in thought, deed and product as at present.

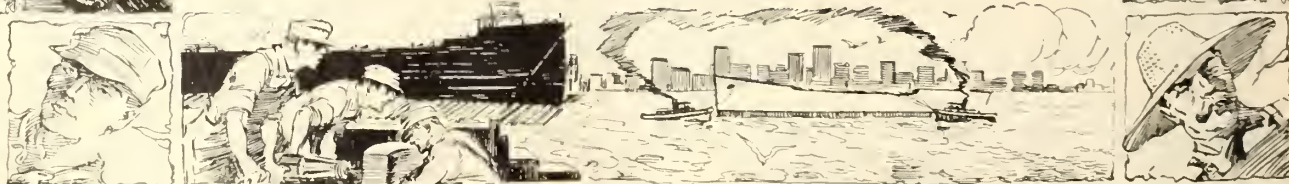
HOW NOBLY CANADA has responded is now known around the World and history will record it for the future.

THE PRODUCTS OF OUR MILLS are at the Fronts and on the Seas, in the Shipyards and Factories and in the Fields, faithfully fulfilling their mission of reliable performance wherever the Government's War-Winning Programme directs, as we are, and have been, stripped for action since the first call to arms.

THE NEEDS OF THE EMPIRE are many and the War-Winning Programme changes as necessity demands; but it matters not, the needs of the Empire are paramount and must be supplied.

THEREFORE, if in these trying times, we do not deliver promptly to you such of the products of our Mills or Blast Furnaces as you may need, console yourself with the thought that through us, you are rendering Service to the Empire and to the Cause that matters most for the Liberty, Justice and Freedom of the World.

THE  
**STEEL COMPANY**  
OF  
**CANADA**  
LIMITED  
HAMILTON MONTREAL







# **GENERAL RAILWAY SIGNAL COMPANY**

## **OF CANADA LIMITED**



Railway Operating Engineers, Manufacturers and Contractors  
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling  
Electric Interlocking

Electric  
Interlocking

Mechanical  
Interlocking

Highway  
Crossing Gates

Highway  
Crossing Bells



A-P-B. Automatic  
Block Signals for  
Single Track

A-C. and D-C.  
Automatic Block  
Signals for  
Double Track

### **Advantages of Absolute-Permissive Block Signaling (A-P-B)**

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.



**Head Office and Works**  
**LACHINE, QUEBEC**







*Loading  
Northern Electric  
Railway Signal Wire  
from one of the big shipping  
platforms of the Company's  
Montreal plant.*

There has been no compromise with quality in the manufacture of

***Northern Electric***  
**RAILWAY SIGNAL WIRE AND CABLE**

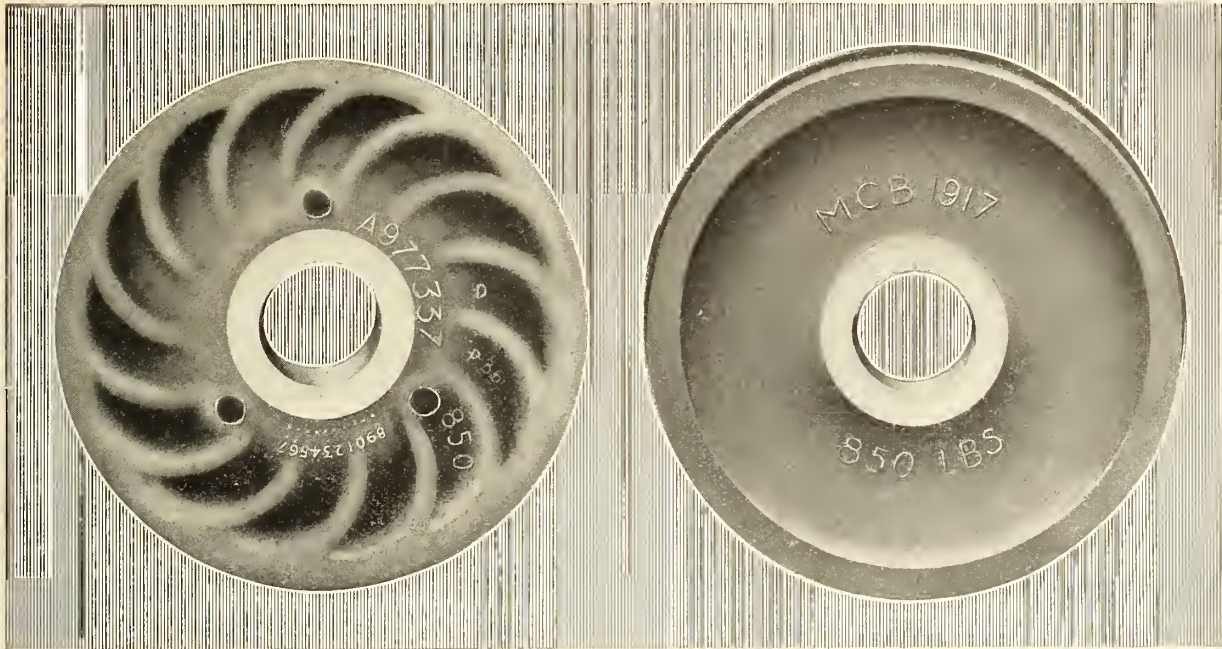
Made in strict accordance with R. S. A. Specifications and used by every steam and electric road of any consequence in Canada. It always pays to buy the best.

***Northern Electric Company***  
**LIMITED**

Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver



# The Wonderful Single Service Chilled Iron Wheel



Over two and one-half million Freight Cars are required to transport the Commerce of the Nation.

Ninety-five per cent. of these freight cars are equipped with *Chilled Iron Wheels*.

There are four classes of freight cars, and the *Master Car Builders* provide four Chilled Iron Wheel Standards as follows:—

625 lb.	M.C.B.	wheel	for	cars	of	30-ton	capacity
700 lb.	"	"	"	"	"	40-ton	"
725 lb.	"	"	"	"	"	50-ton	"
850 lb.	"	"	"	"	"	70-ton	"

The Chilled Iron Wheel has always been the Standard vehicle of transportation for rail-borne traffic.

25,000,000 in all kinds of service.

## Association of Mfgrs. of Chilled Car Wheels

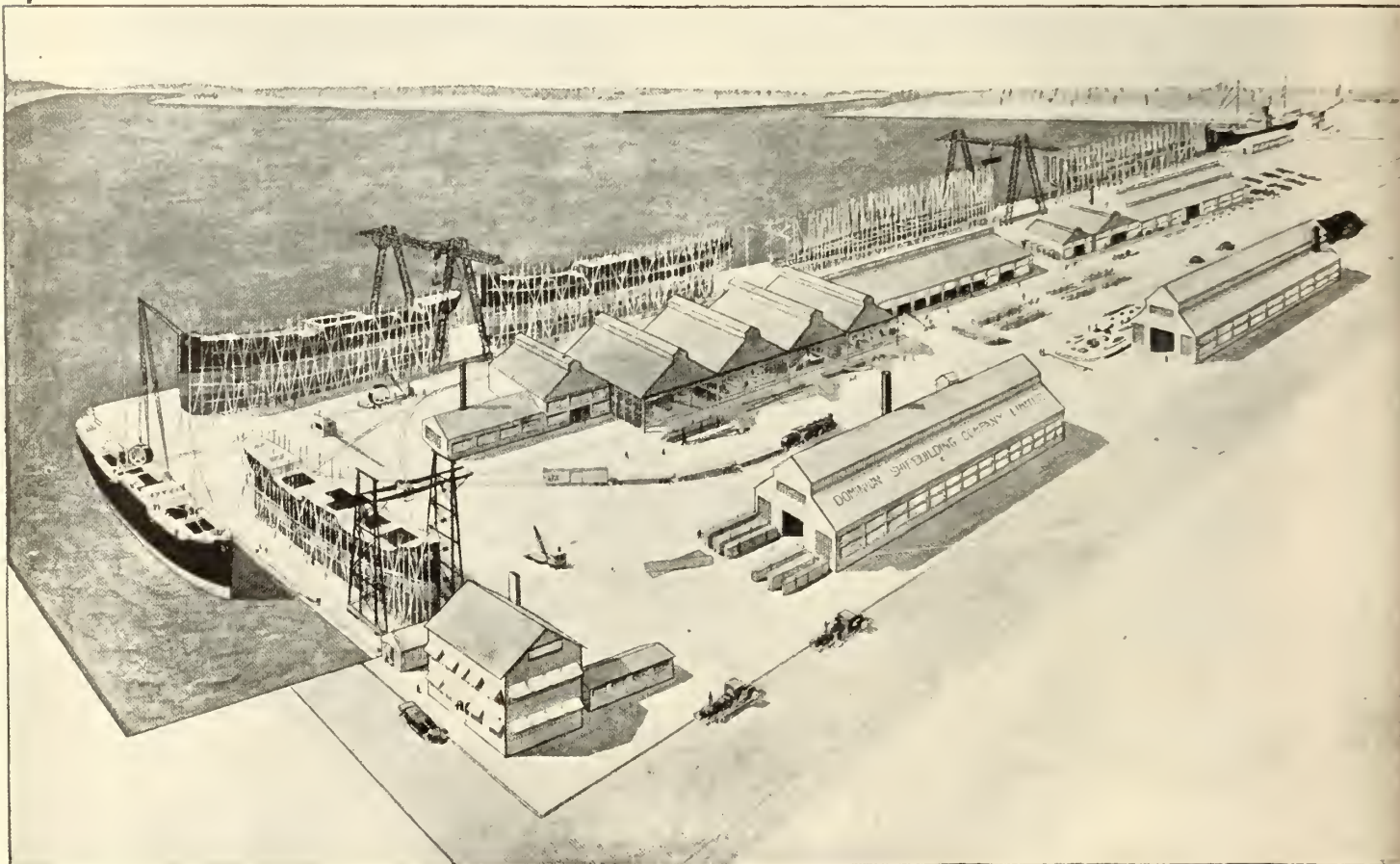
1228 McCormick Bldg., Chicago

Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day



# DOMINION

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Office, Docks and Yards

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# 2000 ROOMS in the Canadian Pacific Rockies

Three Giant Mountain Ranges  
Making Fifty Switzerlands in One

*Between Calgary and Victoria, B. C.*

Distinctive hotels — each as picturesque as the scenery into which it fits — each with its special feature of glaciers, lakes, Alpine climbing, fishing, pony riding, swimming or golf. Luxurious mountain-guarded Banff Springs Hotel — restful Chateau Lake Louise, among the Lakes in the Clouds. Mount Stephen House at Field, under

the shadow of Cathedral Mountain — the gem-like Emerald Lake Chalet — Glacier House, glacier rich — Hotel Sicamous, on the the Shores of Shuswap Lake — spacious, gracious Hotel Vancouver, at the Gateway to the Pacific — the Empress at Victoria, B. C., on Vancouver Island, with its atmosphere of old England — these hotels invite you this summer.

**W. B. Howard, District Passenger Agent, Toronto**



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Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

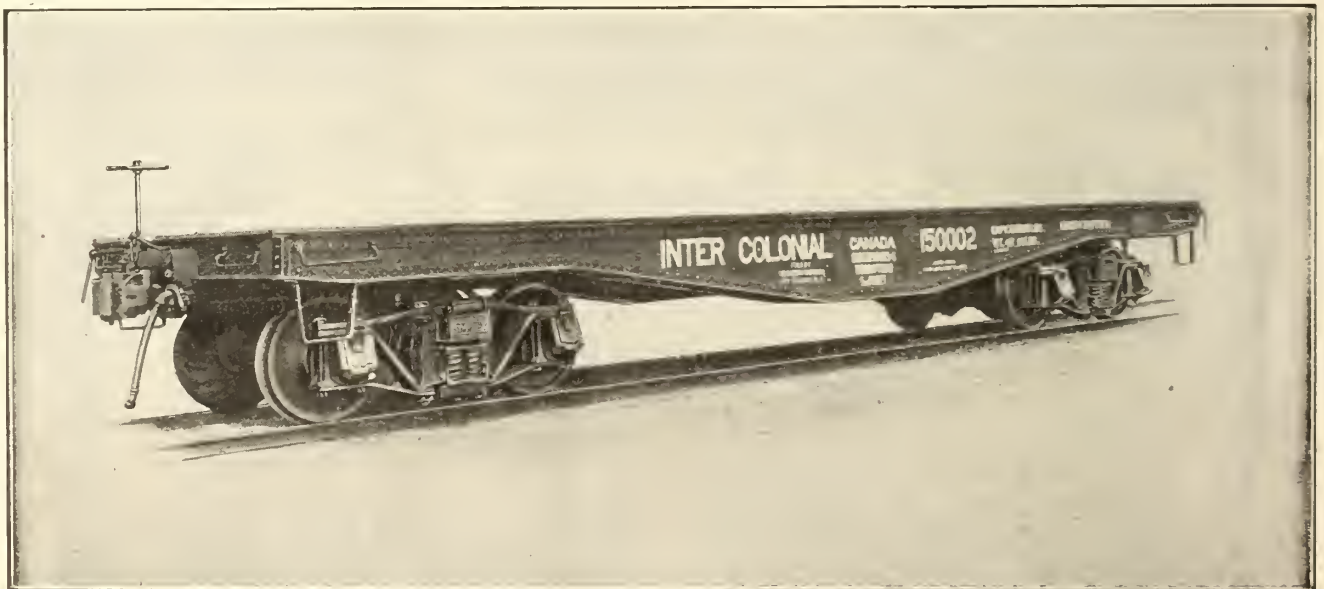
Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

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**Head Office - - - New Glasgow, Nova Scotia**

**Western Sales Office, Room 14, Windsor Hotel, Montreal**



75 on Special Pit Car For Canadian Government Railways.

## FLAT CARS, CABOOSES AND MINE CARS

We make a specialty of Flat Cars, Caboose and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

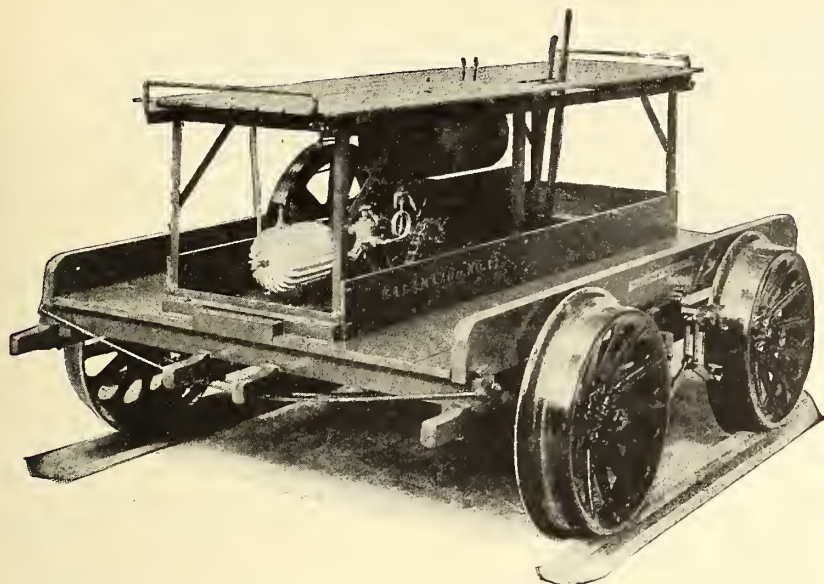
## Eastern Car Company, Limited

**General Offices and Works, New Glasgow, N.S.**

**Montreal Office, Room 14 Windsor Hotel**



# Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

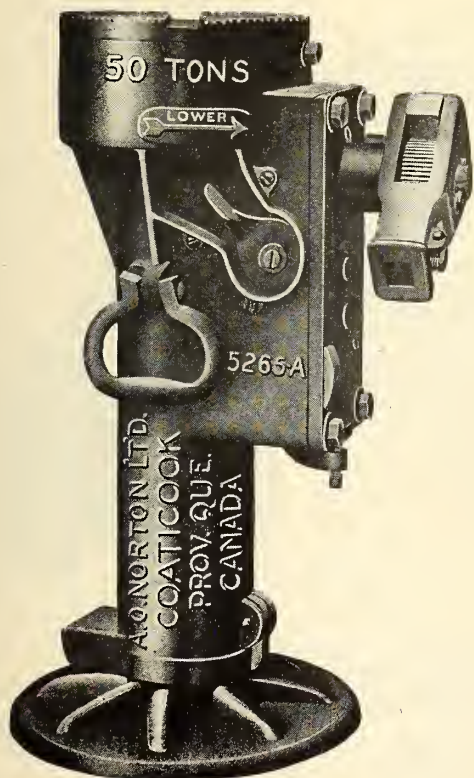
This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

## Kalamazoo Railway Supply Company

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Stock Carried by Canadian Agents: **MUSSENS LIMITED**  
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**PREPAREDNESS**—Many of our customers have been applying large numbers, and in some cases complete installations, of Tate Flexible Staybolts to their locomotive fireboxes, and thus are prepared to handle the heavy business during the present season.

**THE TATE FLEXIBLE STAYBOLT** has been used quite extensively since 1904 in the locomotive fire boxes, and its service records all go to prove that it has done more to improve conditions of staying and preserve the life of the firebox than any staybolt so far used.

**WE RECOMMEND THIS BOLT** to the railroads of Canada and to all users of the fire-box type of boiler where staybolts are necessary, with the assurance that it will be found strong, serviceable, economic and most effective in reducing staybolt breakage and firebox repairs.

OVER 16,000,000 BOLTS IN SERVICE.

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto Ont.

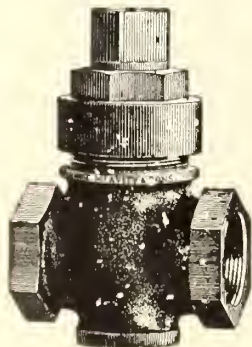
*Established 1834*

*Incorporated 1907*

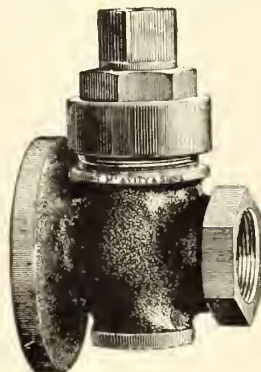
## Marine Cocks

### Brass or Iron

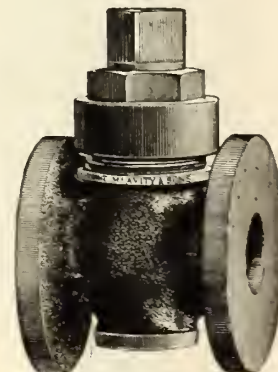
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Flanged and Screwed



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**T. McAVITY & SONS, Limited**

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T. McA. STEWART  
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Wholesale and Retail Hardware  
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## A Quality Standard

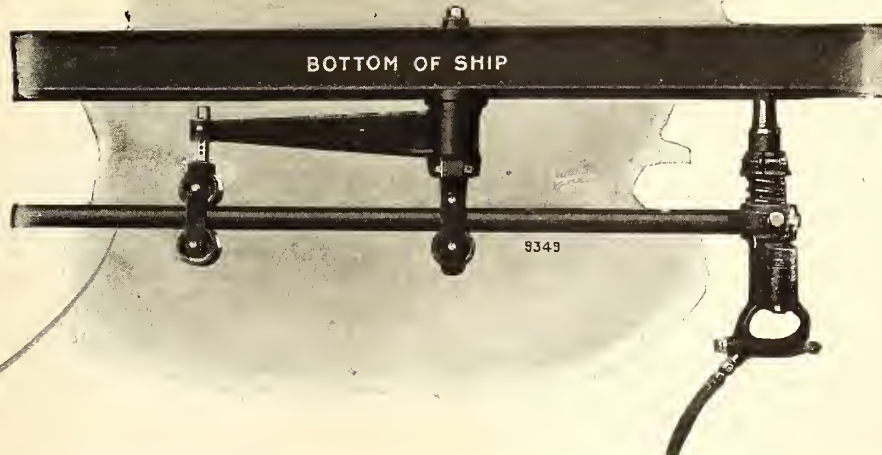
"Equal to Berry Brothers" is a statement often heard by Varnish buyers. This is because the uniform dependability of all "Berry" products has caused them to become a sort of a standard of comparison.

There is no surer prelude to a good finish, than the use of Berry Brothers Varnishes, Enamels and Stains.

Lionoil the rust preventive is now made in the following colors—Blue, Green, Orange, Gray, Khaki and Red.

**BERRY BROTHERS**  
(INCORPORATED)  
**World's Largest Varnish Makers**

WALKERVILLE, ONT.



Rivet ships' bottoms faster with the "Little David" riveter and the bottoming rig.

**Canadian Ingersoll-Rand Co., Limited**

General Offices, Montreal

BRANCHES: SYDNEY, SHERBROOKE, MONTREAL, TORONTO, COBALT, TIMMINS,  
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## THREE YEARS SERVICE WITHOUT LOSS OF A SINGLE SECOND

"Engine 1067 came in this morning which gave me an opportunity to inspect the firedoor applied to this engine three years ago this month. This door is of the Butterfly Type and is in first class shape. No repairs have been needed during the three years of service. Everyone says it is the best proposition in the way of a pneumatic door they have ever seen."—*Traveling Engineer.*

This record is being equalled by thousands of engines all over the country. But the dollars and cents it might cost are of the least importance right now.

The important thing is that it gave dependable continuous service throughout this time.

And the fact that it saves coal the country needs so badly.



FRANKLIN  
AUTOMATIC  
FIREDOR

Franklin Railway Supply Co. of Canada, Limited  
Transportation Bldg., Montreal

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## The Only Reliable Process for Welding Heavy Sections

**T**HIS explains why railroads and steel mills used over one million pounds of Thermit in 1917. Also why 95% of the railroads in the United States and Canada having over 10 locomotives, use Thermit for welding frames and all heavy sections.

There are few machine parts which are subjected to greater strains or more severe shocks than a locomotive frame or a blooming mill pinion. Yet Thermit welds on such parts are being made every day and **STAND UP IN SERVICE FOR YEARS.** The reason for this is that, unlike ANY OTHER WELDING PROCESS, the steel to make a Thermit weld is produced **IN BULK** at a temperature of

5000° F. Furthermore, results are not dependent on the individual skill of the operator.

We have ample proof for all our claims and our long list of satisfied customers who come back week after week, month after month, and year after year for more Thermit is a never ending testimonial to the efficiency of the Thermit Process.

Remember that Thermit should not be confused with either oxy-acetylene or electric welding. It stands in a class by itself. It welds sections which cannot be successfully welded by any other method.

Write for Pamphlet 2144.

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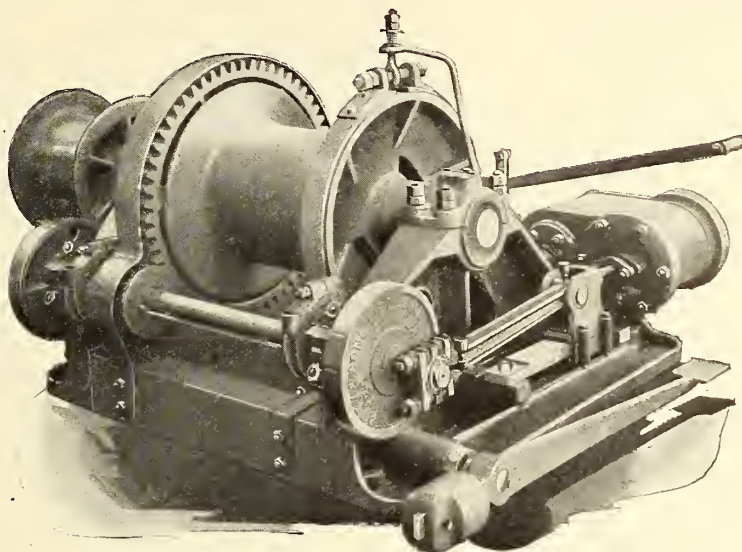


# "BEATTY" DECK MACHINERY FOR SHIPS

The illustration shows the Winch generally used on the ships being built in the United States.

A certain proportion are fitted with two Winch Heads, Extended Shafts and Outboard Bearings.

One of several types we are producing in quantities.



*8 1/4 x 8 Single Purchase, Throttle Reverse Deck Winch.*

Cargo Winches  
Warping Winches  
Ash Hoists  
Anchor Windlasses  
Also

Hoisting Engines  
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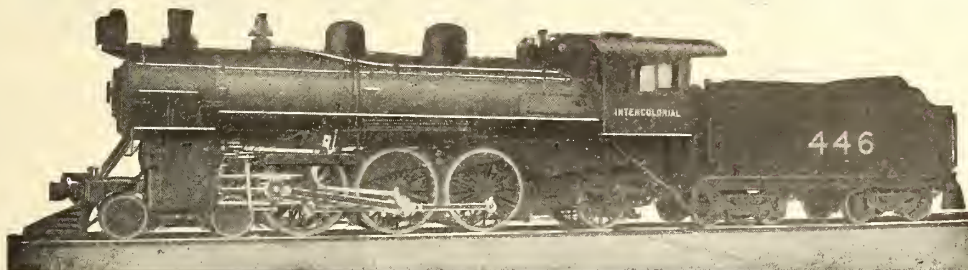
Send us your inquiries.

We will quote quickly.

**M. BEATTY & SONS, Limited** Agents  
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H. E. PLANT, 1790 St. James St. Montreal  
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## Heavier Trains—Less Coal and Water Per Trip



**PACIFIC TYPE LOCOMOTIVE—INTERCOLONIAL RAILWAY**  
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23 1/2 x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

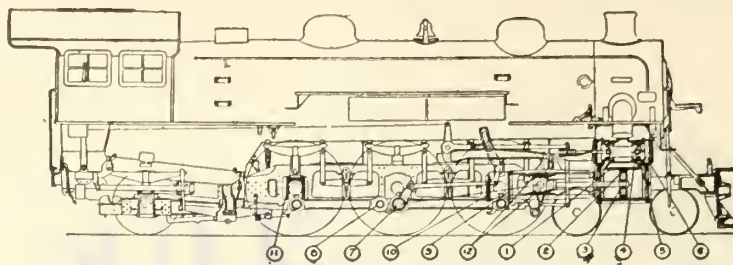
This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

**Montreal Locomotive Works, Limited**  
DOMINION EXPRESS BUILDING, MONTREAL, CANADA



## Hunt-Spiller Gun Iron

1. Cylinder Bushings
2. Cylinder Packing
3. Pistons
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7. Side Rod Bushings
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For 12 of the Principal Parts of a Locomotive

### REVENUE SERVICE

Keep your engines on the road in revenue service by using

### HUNT-SPILLER GUN IRON

Crosshead gibs—valves—pistons—cylinder bushings and packing are subjected to severe tests, but day in and day out, Hunt-Spiller Gun Iron will stand the strain. The wearing qualities and durability of Hunt-Spiller Gun Iron reduce maintenance costs, lessen roundhouse attention, eliminate liability of failures—all factors leading to better revenue service.

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Office and Works:

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## SHIPBUILDERS ENGINEERS AND SHIP REPAIRERS IRON AND BRASS FOUNDERS

Makers of Manganese Bronze Propellers, Large Marine Engine Cylinders,  
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MARINE RAILWAY, CAPACITY 2500 TONS DEAD WEIGHT

LARGER VESSELS DOCKED IN GRAVING DOCK, 480 FT. x 65 FT.

LOWEST RATES ON PACIFIC COAST





A Great Many Large Plants Are Using

## COMMERCIAL ACETYLENE

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## Dominion Copper Products Company, Limited

*Manufacturers of*

## COPPER AND BRASS

**Seamless Tubes, Sheets and Strips**

**In All Commercial Sizes**

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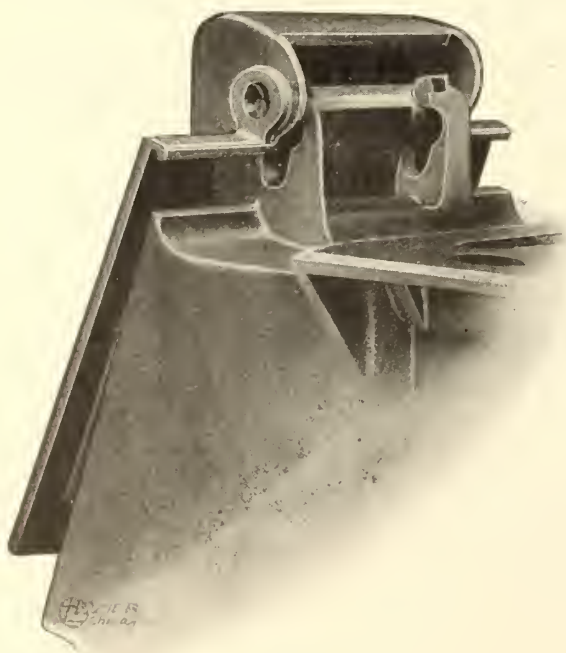
# "STERLING" HACK SAW BLADES



They are a "STERLING" product of good standard. They are made by people who know how, and are really the last word in a hack Saw Blade. This blade is made from the best material produced by any mill,—added to this, correct mechanical construction and proper heat treatment produce a blade that is as good as is possible to turn out.

*Manufactured by*

**Diamond Saw & Stamping Works**  
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After five years general service and the most exacting tests, the Pinless Lid Journal Box is offered in Canadian Service.

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# Keep the Locomotive Boilers

Free from

*Scale Formation, Corrosion, Pitting and Foaming*

and they will be in service more days per month, burn less fuel, haul heavier trains, and have no failures chargeable to water conditions. These results can be accomplished by the use of

## Dearborn Treatment

at a lower cost per thousand gallons of water than by any other system of water treatment.

Dearborn Treatment is made to suit the water conditions shown by analysis, and the material is furnished in the most convenient form for economical use by the Railways. We furnish the services of our experts free to direct the application of the treatment, when desired.

Gallon samples of the water supplies required for analysis.

### The Dearborn Chemical Company of Canada, Limited

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Air Pump Liner  
(Weight 550 Lbs.)

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### Brass and Bronze Castings for Shipbuilders

This is the time when every minute counts. Accuracy you must have in your ships' castings, you also want to be sure of the quality of the fittings you put in the ships that you are building. We keep our organization up to the highest point of efficiency. No matter how large or how small is the casting you desire we can deliver it to you on time. Send for our Castings Booklet. It will give you a fair idea of what we have been doing along these lines.

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# CANADA FOUNDRIES & FORGINGS LIMITED

Ship Forgings  
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Character  
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### *When You Specify for New Car Seat Upholstery*

Du Pont Fabrikoid costs less, wears better and retains its attractiveness longer than leather or plush.

Du Pont Fabrikoid increases the comfort of your patrons because it is soft, pliable, luxurious, sanitary and cleanable.

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Used on some of the best lines.



*Write for Samples To-day*

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THE Howitzer, machine gun, rifle, aeroplane, tank, and every implement of war contains numerous drilled holes. Without these drilled holes their production would be well nigh impossible. With speed in production as the watchword, the importance of good drills for drilling these holes is apparent. The best drills are in big demand—thus the preference for

# WILT

## High Speed and Carbon Twist Drills

Wherever Wilt Drills are in use there you will find the highest production. Canada's largest manufacturers use them consistently. If you haven't adopted them give them a trial.

### WILT TWIST DRILL CO. OF CANADA, LIMITED

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KILL  
LAST AD.



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THE Dominion Rubber System has established a reputation for making *good* rubber products. That applies to Footwear, Tires, Raincoats, Druggists' Sundries or Mechanical Rubber Goods. In each case the quality is second to none and the workmanship of the best.

That is particularly true of our Mechanical Rubber Goods. Dominion Rubber System Belts and Belting, Hose and Packing, etc., for industrial use, "stand up" and do the work expected of them. In these lines, quality and service have been linked together to such a degree that absolute satisfaction is guaranteed.

If you have not proved the satisfactory service of Dominion Rubber System Belting, Hose and Packing, write to our nearest branch and ask for one of our experts to discuss your Belting, Hose or Packing problems with you.

**Canadian Consolidated Rubber Co.,**  
LIMITED

**Head Office - Montreal**

BRANCHES at Halifax, St. John, Quebec, Ottawa, Toronto, Hamilton, Kitchener, London, North Bay, Fort William, Winnipeg, Brandon, Regina, Saskatoon, Calgary, Lethbridge, Edmonton, Vancouver and Victoria.



# Canadian Railway and Marine World

October, 1918

## Terminal Handling of Locomotives.

By H. C. Pickard, Master Mechanic, Delaware, Lackawanna & Western Rd., Buffalo, N.Y.

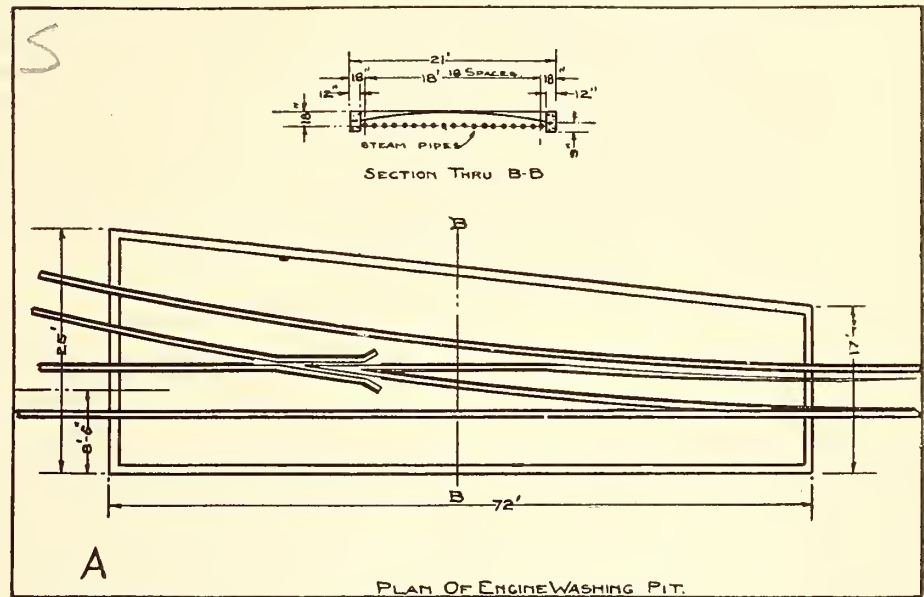
Efficiency and conservation are more expedient at this time than ever before. We are forcefully reminded at this time of the efficiency of the naval and military service, the conservation of man power, food, fuel and electric power. We are face to face with the transportation problem, the second of the country's great industries. The country needs locomotives as it does ammunition and big guns. We are engaged in a business of transporting necessities from where they are produced to where they are needed and the connection between these two places is a railway, its motive power, vehicles for conveyance, tracks, etc.

The locomotive must be kept as near 100% efficiency as possible and be detained at the terminal as little as necessary. With this view in end we offer a few suggestions: First, when the locomotive arrives at the terminal, the first operation is the cleaning of the fire, or removing it entirely from the locomotive. To conserve man power, one of the best is the water type of pit, open on one side containing sufficient water space, to extinguish the hot cinders and to be served by a gantry crane, and with this kind of pit one man can readily serve 125 locomotives per 24 hours, that is, the handling of the cinders. The labor for cleaning the fires can be handled to the best advantage on a piecework basis.

**Cleaning Locomotives**—After the fire has been cleaned, the next operation is to thoroughly clean the machinery and running gear of the tender, so that it can be carefully inspected. The time of wiping locomotives, especially beneath the running board and the tender, is past history.

est to the lowest. Above the running board and the cistern can be successfully washed, but we recommend periodical wipings. We submit a ground plan A, showing a suitable design for a locomotive washing pit.

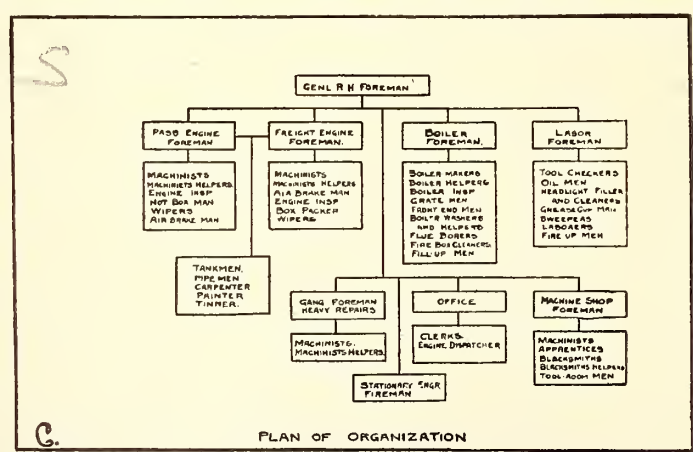
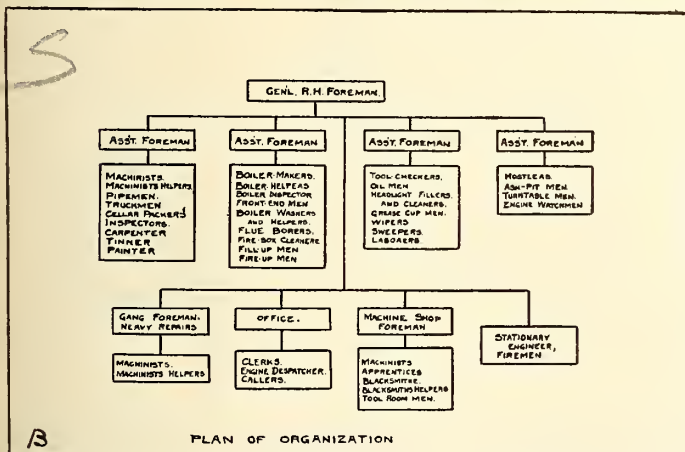
should be long enough to take in the entire locomotive and tender, and equipped with sufficient lighting facilities to enable the inspector to accomplish his work readily. It is more desirable to have an outside entrance, reached by a suitable



**Organization**—Now that we have the locomotive in the house, essential to good operation, there must be a well defined organization. Each individual terminal has its own characteristics, but basing an organization upon a terminal caring for

stairway.

**Turntables**—Necessary to the handling of locomotives at a large locomotive house, is a first class turntable of ample length and sufficiently strong in design, so that it will not spring under the heavy



By improved methods which are now on the open market, the largest types of locomotives can be thoroughly cleaned in from 7 to 10 minutes, by washing with a combination of fuel oil and water at about 90 degrees, aided by air pressure, which should be 100 lb. to derive the best result, and at the same time realize the greatest saving in labor, material and time. The success of it depends upon the enthusiasm of all the attachées of the motive power department, from the high-

approximately 100 locomotives per 24 hours, we submit for your consideration plan B, for use where it is not desired to specialize between the different classes of power. This is covered by plan C.

An inspection pit is desirable, immediately after the locomotive has left the washing pit, so that when it arrives on the pit in the locomotive house, the various gang foremen can promptly distribute to their workmen the reports of work required upon the locomotive. This pit

est load, and supported upon a suitable foundation. One very essential matter that is overlooked by designing engineers is the alignment of tracks across the table. Every mechanical man appreciates the layout of tracks to match up across the table so that handling locomotives in and out of the house or moving back and forth for valve setting, or switching out for back shop, or vice versa, when the tracks line up, it is a great assistance to the prompt handling of the power. When



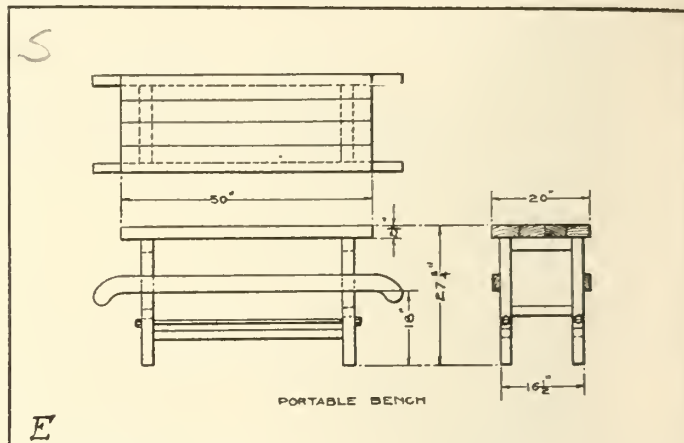
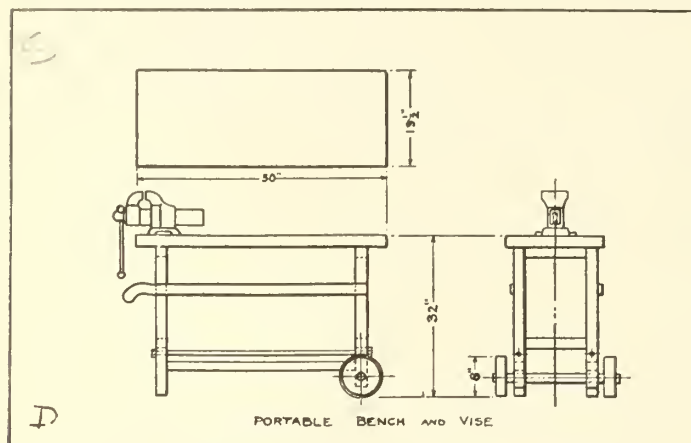
you are putting in a table, make it large enough. In climates where considerable snow is experienced a double drive is desirable, that is, a motor on each end of the table coupled in multiple.

**Toolroom and Tools**—A locomotive house is not complete, unless it is equipped with a toolroom that contains suitable and enough tools to properly and promptly handle the work, located at the locomotive house, so that unnecessary time is not wasted by men in travelling back and forth for tools. Each locomotive house of any considerable size, should be equipped with all of the portable tools, such as

The handling of work reports, etc., is a very important question and suitable facilities must be at hand to properly receive, file and record the work. There should be a suitable place where the locomotive man can, on arrival, make out his report, being careful to fill out the details requested on the form. Plan J is a ground plan of the office building with suitable quarters for the foremen, clerks, register room for locomotive men and locker room. The locomotive man can dictate his report to a slip clerk and this clerk in turn can classify from the locomotive men and locomotive inspectors reports and place

far smaller space than one of a greater surface. The dispatcher's office must be equipped with a telephone system, and an air signal system for the various foremen extended throughout the locomotive house, which will enable him to secure information promptly or call the foremen when they are wanted at the telephone or for other information.

**Specializing Locomotive House Work**—There is a very great advantage to be obtained in specializing the mechanics. They can have suitable tools for doing their individual work and when better equipped can do it more promptly and

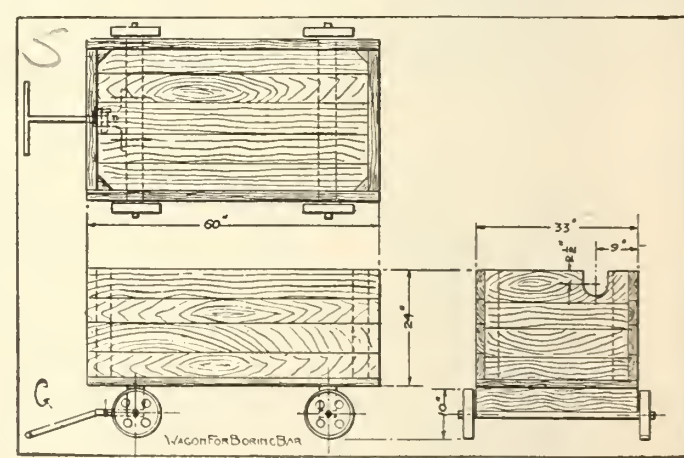
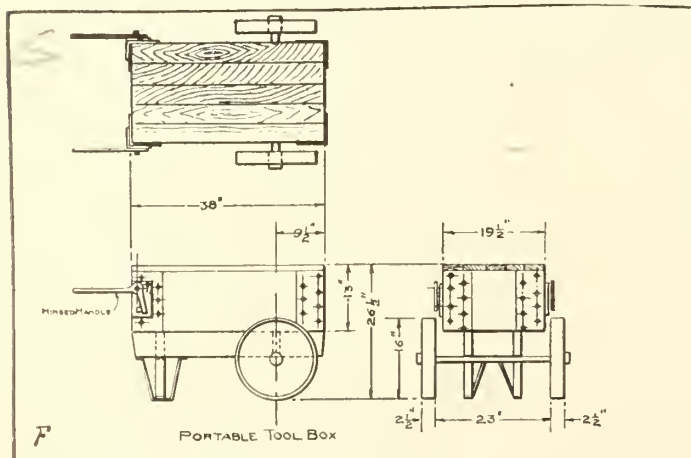


boring bars for cylinder and valve chambers, a valve facing machine, and a crank pin truing machine, and should be provided with portable tool boxes, and portable benches equipped with a vise. Small trucks and wagons should be plentiful and available, as considerable time is lost when these pieces of equipment are not available. Plan D shows a portable bench and vise, plan E a portable bench that is desirable for men working on cylinders, valve motion, air pumps, air reversing gears, etc., and plan F a portable tool box for the individual mechanic that contains all of his tools and can be handled to the

the slips ready for distribution to the various classes of mechanics to perform the work. Upon these being signed by the foreman they are returned to the work slip clerk, who in turn checks them off the inspector's and locomotive man's report and then they are filed. The matter of inspection is very important, and the work report books and slips must always be kept in first-class condition. It is highly desirable on a division with any large number of locomotives to have a special man assigned as general inspector to cover the entire locomotive and to see that all requirements of the laws are

with better results. In locomotive houses of considerable size, men can be specialized on passenger locomotives, fast freight or slow freight locomotives as well as switch locomotives. In any large locomotive house, I would suggest that a man be specialized on cab work and one on piston and valve stem packing. The air jobs should be specialized and suitable quarters provided for foremen and organization. The boiler work can be divided and specialized in the same way.

Water cranes should be located on tracks leading to and from a locomotive house suitably. With these properly lo-



task that is assigned to him and avoid any lost motion in securing tools for the work to be performed. Plan G shows a portable wagon for a boring bar.

**Information Board**—A board suitably located in the locomotive house, that will give the information as to the status of the work by the various classifications is desirable. Of course, these boards have to be arranged for each individual terminal and should cover all of the operations that are specialized, machine, boiler, air, tender and all other operations. Plans H and I show two of these boards.

complied with.

**Handling of Locomotive Crews**—Essential to good locomotive house operation, facilities for the handling of engine crews is very important. Plan K is a sketch of a circular locomotive and crew board, which serves the purpose, takes up very little room in the office and is visible to the crews from the register room by the means of a glass. On the other side, it is open to the locomotive dispatcher and handy for him to mark up his crews and locomotives. By this means, a large board covers a great number of locomotives and crews and takes up

cated, no time is lost in moving locomotives back and forth to give them water, when required. One is desirable for the switch locomotive movement and another for the road and passenger locomotives.

**Blower System**—Every locomotive house should have sufficient steam pressure to properly provide a blower system for getting locomotives hot. Permanent fittings should be made so that each pit in the locomotive house can be coupled by the means of flexible joints, hose or otherwise so that no time will be lost in making these connections.

**Hot Water Washout Plant**—No loco-



tive house is complete unless with a hot water washout plant of sufficient capacity to take care of all the washouts. It does away with the breakages that are due from expansion and contraction, caused by the quick change of the temperature of a locomotive boiler when it is undergoing the washing process. It also tends to the conservation of fuel, as it takes about double the amount to get a locomotive up to the required steam pressure when cold water is used. It also enters into the time element.

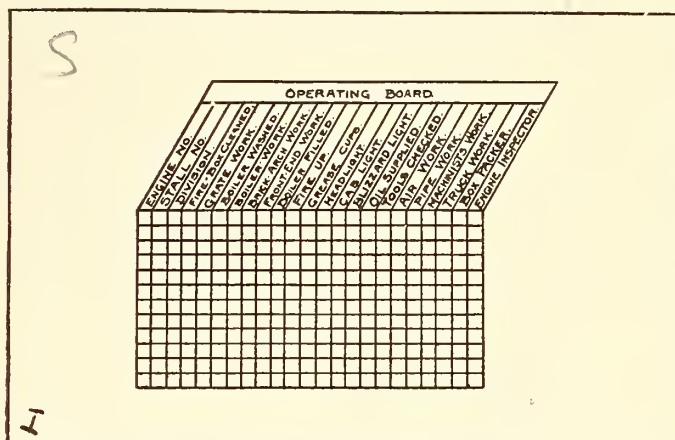
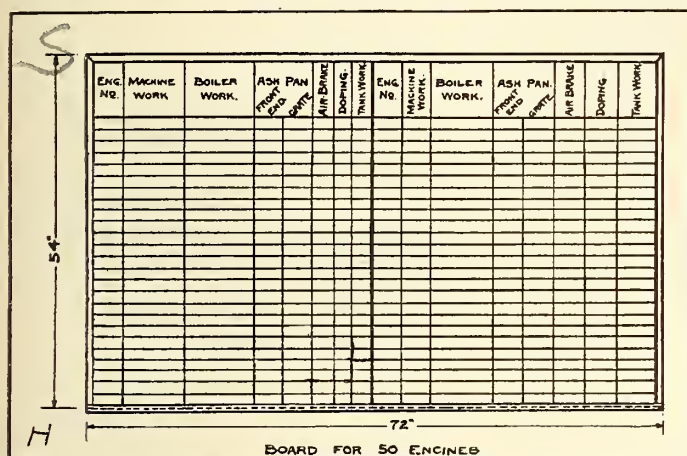
**Electric and Autogenous Welding**—No other appliance is of more assistance to

desirable on account of delays in coaling when the locomotives are being dispatched.

**Locomotive Performance**—The standard of comparison as to what constitutes a non-performance varies so greatly throughout the country, except within the boundaries of a state where the performance is based on rules laid down by a public service commission, that a conclusion cannot be drawn. As a rule, the performance of a locomotive depends upon the general conditions, so to speak, viz., shopping facilities for general repairs and properly equipped locomotive houses.

much as shrapnel. Ordinarily, 15% of all the locomotives on our railways are in the repair shop. By reducing that percentage to 10, we can add 3,325 locomotives to the number available for use. If we can keep more locomotives in good running order, we will help our country in the war with Germany."

Check up your locomotive houses at night, check up your locomotive houses in the morning and finish the day's work with as few locomotives held as possible. Go the limit on putting them into service. It may be that a tender from one locomotive can be switched to another and thus



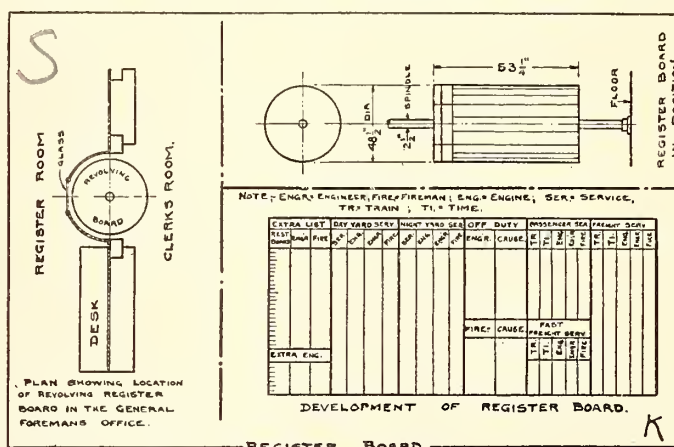
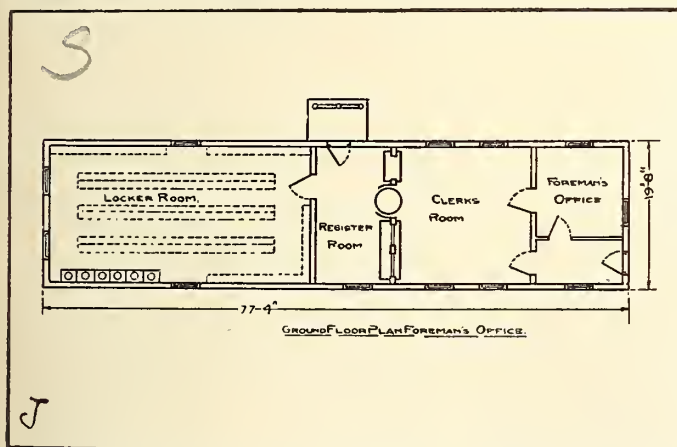
the prompt dispatching of power than electric and autogenous welding. It is a time saver and an increased boiler efficiency can be obtained by the welding of the firebox end of the flues as well as the time to be obtained in stripping or the removal of staybolts with the autogenous welding.

**Drop Pits**—Each locomotive house should have suitable pits for the removal of locomotive truck wheels, tender wheels and drivers. This pit should be equipped with a suitable jack of sufficient capacity to readily handle the heaviest pair of wheels. It does not seem that a suitable

Local conditions have a great deal to do with the performance from a boiler standpoint. Good performance is based upon proper inspection and the ability to make repairs and good operations.

**Terminal Delays**—A report should be made to the mechanical officer in charge, so that he can tell at a glance just what time a locomotive arrives and when it is again made ready to depart. This report should contain a column that will show the arrival of the locomotive at the cinder pit, when it is reported to the operating department as ready for a call and when it is ordered. It also should show the

a locomotive gained or, if you have two locomotives of the same class that are held over, maybe the switching of certain material from the one to the other will place a locomotive in service and hold out but one. Check up your shop locomotives and do not hold more of one class than is absolutely necessary to comply with the above request. In working your shops on a 10% basis the writer believes that at large railway centers great assistance can be rendered by all of the local mechanical men in keeping locomotives in service, hence the transferring of material and in that way helps to produce more loco-



jack has been designed for this purpose, or at least the writer never came in contact with one. This pit should have good drainage and proper lighting facilities.

**Coaling Facilities**—No part of the layout is more important than the handling of locomotive fuel at a terminal. There are many varieties of docks of the gravity and mechanical type. While there are a number of the latter that are highly successful, it seems to the writer that the least delays are incurred by the former. This coal dock should be located so that it will cover the locomotives as they approach the locomotive house, this being

mechanical department and the transportation department delays, separately.

**Present Facilities**—Of course, we all talk about ideal conditions, and there is no doubt that improvements are needed at almost every terminal, but they are harder to obtain now than at any other time, so we must take the present facilities and do the best we possibly can and speed up and take up the lost motion and follow the little things that go to bring about prompt dispatching and furnish the locomotives that the country needs.

The U.S. Railroad War Board said recently: "Our nation needs locomotives as

motive miles.

**Questionnaire**—The following questions should be carefully considered:—

Do you clean fires by day or piecework? Have you washed locomotives? Are you washing at present?

Do you approve of an inspection pit and where would you locate it?

Do you have drop pits and how heavy repairs do you recommend being carried on in the locomotive house?

Do you approve of air or hydraulic jacks for drop pit work?

What do you think of two motors on the turntable?



Do you find more supervision necessary under the present labor conditions, if so, to what extent?

Have you employed women in the locomotive house, if so, what work, and how do they compare with men?

What tool system do you prefer on

locomotives? Do you approve of each locomotive man having an individual tool box or do you prefer a set of tools for each locomotive?

How do you coal your locomotives, going in or out of locomotive house? Which plan do you prefer?

What plan of organization have you?

What do you think of a toolroom connected to the locomotive house, and what are the advantages to be gained?

The foregoing paper was read before the Central Railway Club in Buffalo, N.Y., recently.

## A Railway Air Compressor Laundry.

A committee report presented at the Air Brake Association's last convention gave the following information as to the means employed on the Minneapolis, St. Paul & Sault Ste. Marie Ry. (a C.P.R. subsidiary) to clean air compressors without taking them down or otherwise dismantling them.

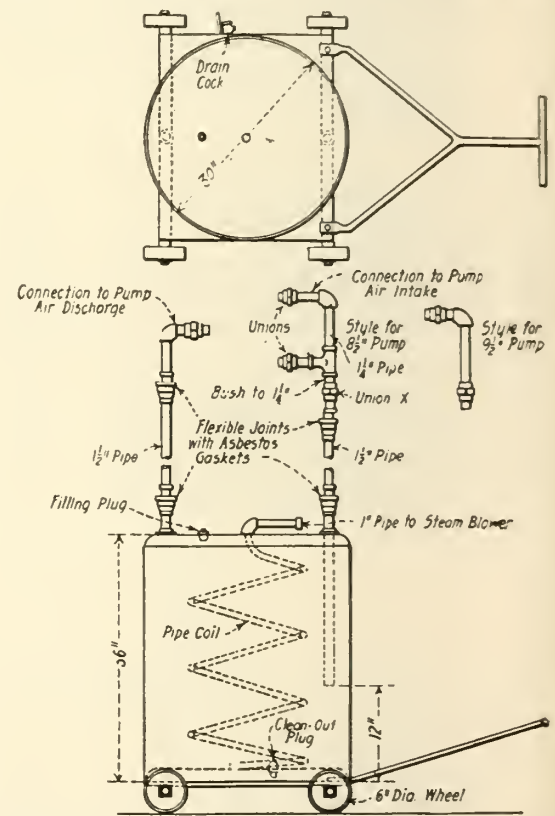
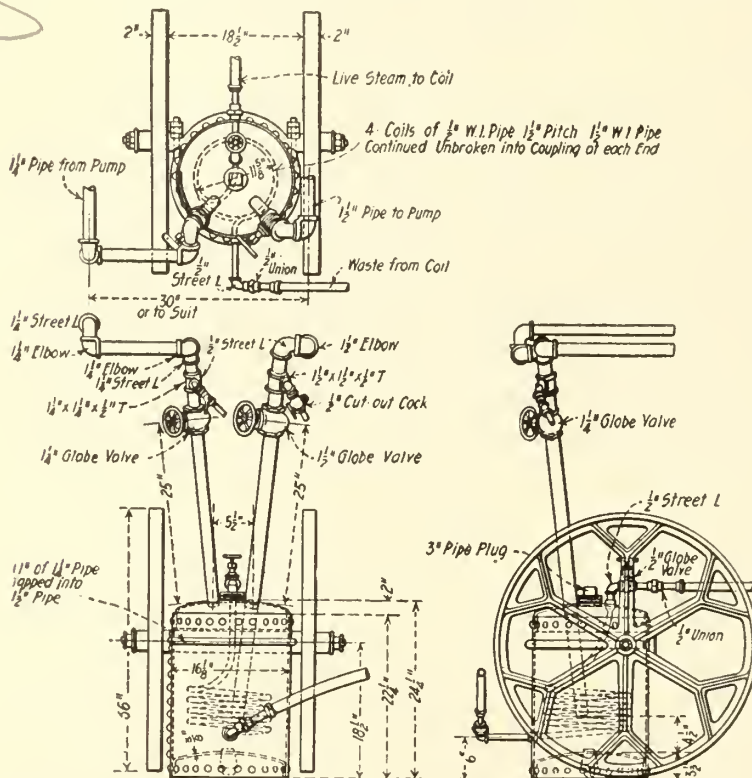
Dirt entering the cylinders of an air compressor destroys lubrication and increases the wear of packing rings and cylinder walls. The dirt and worn-off metal, coupled with heat of compressor, form the hard gum so frequently met with; hence, excluding dirt will improve

To operate the outfit, first see that the air cylinder piston rod packing is tight, then remove the air strainers and disconnect the discharge pipe at the compressor. Connect the supply and return pipes from the "laundry" to the compressor air cylinders, also a steam line to the steam coil. After the solution is at or near the boiling point, open the compressor throttle and permit the compressor to operate at slow speed with the solution circulating through the air cylinders and discharging back into the tank.

The length of time the compressor should thus operate depends on its condi-

tion. It is connected to the compressor it does not require an attendant during the 2½ or 3 hour period mentioned, other than an occasional visit to observe that all is going well. A solution of about 10 gallons, mixed as herein mentioned, will be sufficient to cleanse about 5 compressors, other than the possible exception of adding lye to maintain its strength.

C.P.R. Transcona Terminal Closed.—D. C. Coleman, Assistant General Manager, Western Lines, C.P.R., issued the following statement, Sept. 12:—"On account of the government having found it necessary



lubrication and reduce wear and gumming. Clogged and gummed passages and ring grooves of the compressor are responsible for a portion of the trouble, such as reduced efficiency, pounding, running lame, slow speed, etc.

A very effective and economical way to remove this deposit is by means of the compressor "laundry," which should be on the service and protection afforded the compressor against dirt. The accompanying illustration shows two types of air compressor "laundry" outfits, as developed by the M.St.P. & S.S.M. Ry. They consist in general of an enclosed tank mounted on wheels, for a lye solution, a steam pipe coil inside the tank and suitable pipe connections to join the tank to the suction and discharge openings of the compressor. The solution should consist of about one pound of concentrated lye to one gallon of water, and should be kept hot by steam circulating through the coil while the compressor is being cleaned.

tion, but usually from 2½ to 3 hours give the best results. After the compressor has been thoroughly cleansed the tank connections should be removed. Clean water (hot water is preferable) should then be worked through the air cylinders for several minutes, discharging into the pit, to insure all of the solution being removed, after which the compressor should run idle until all the water is worked out of the cylinders. The air cylinders should then be well lubricated, the strainers re-applied and the discharge pipe connected. If soft packing is used the air ends may need to be repacked.

The method here outlined for removing the gummy deposits from air cylinders of a compressor is far superior and more economical than to cut it out with chisel and scraper. When the old method is used it involves much labor in the removal and replacement of lower cylinder heads and air pistons, and then the ports only can be cleaned. After the "laundry"

to cancel the exemptions from military service which were issued to trainmen, engineers and yardmen, it will be impossible for the C.P.R. to operate the Transcona terminal this year, and it is the intention to close up that terminal until next summer or autumn. It is figured that with the embargo placed on grain shipments originating at points west of Moose Jaw and Saskatoon, the railway will be able to handle the full volume of business through Winnipeg terminals without inconvenience to the public."

The C.P.R. has reopened its St. John's ambulance classes at Winnipeg for the winter. In connection with the work, the company has equipped a hospital at its Winnipeg shops, for first aid treatment of accidents.

Grand Trunk Pacific Ry. Hotel at Regina.—A Regina, Sask., press report states that there is every prospect that construction on the G.T.P.R. hotel there will be resumed next spring.



## Commodity Rates on Refined Sugar in Carloads.

Sir Henry Drayton, Chief Railway Commissioner, made the following report to the Dominion Government, Aug. 20:— Since reporting on the complaint of the Toronto Board of Trade, other complaints have been received by the cabinet, having particular regard to the spread in the new sugar rates, and a further report is required. The present complainants are the Atlantic Sugar Refineries, of St. John, N.B., and the Acadia Sugar Refining Co., of Halifax, N.S. The complaints of both companies have since been endorsed by the boards of trade of each city. In addition to these complaints, an issue largely similar is raised in western territory by the complaint of the British Columbia Sugar Refineries. The present case does not turn at all on the interests of the consumer, either as to price or as to output. The issue is largely one which has to do with claims of rival refineries on the one hand (not so much against the railways as against each other), and the necessity of increased railway revenues on the other. Much misapprehension appears from written submissions that have been made, not so much by companies as by boards of trade and sympathizers, or shareholders in the different companies. It is necessary that the actual issues be defined and understood.

On the question of the cost of sugar to the consuming public, I find that sugar sells in the different markets without the slightest regard to the freight rate. For example, in western territory, while the British Columbia Refinery at Vancouver pays freight rates to Winnipeg, which have varied from 78 to 89½¢, effective Mar. 15, 1918, that company sells its sugar in Winnipeg at the same price as in Vancouver, where it pays no freight rate at all. As a matter of fact, in certain instances, and for practically short periods, sugar was actually sold in Winnipeg at a less price than in Vancouver. In the east the situation is very similar. The fact is admitted by everybody. The notes of evidence covering the question read:

"The Chief Commissioner: 'We had better have that cleared up while we are at it. As I understand from the evidence given before, both at Ottawa and Winnipeg, the question was a trade question, having regard to the rights of these different refineries, and their right to live (if I might loosely express it), and that it had nothing whatever to do with the public as such; in other words, that sugar prices in this country bore no relation whatever to freight rates. If that is incorrect, I would like to have it cleared up.'

"Mr. O'Grady (of the St. John Refinery): 'I think that is quite correct.'

"The Chief Commissioner: 'I think we had illustrations given that sugar in some instances was dearer at the point where it was refined than it was at distant points where there was competition with other factories. Is that right?'

"Mr. O'Grady: 'I think that is right.'

"Mr. Chrysler (counsel for the eastern refineries): 'I did not make any point about that. I do not know that our price has been limited in any way, or that it has been fixed in relation to the freight rate.'

"The Chief Commissioner: 'Well, Mr. O'Grady has covered the point.'

"Mr. Chrysler: 'Other agencies have been at work fixing prices beside the refineries, but I do not know enough about it to discuss that. I mean the grocers fix prices, but how I do not know.'

"The Chief Commissioner: 'The only thing I wanted to know was whether the public was interested in this, from a cost of living standpoint.'

"Mr. Chrysler: 'I think not. It was a question of our right to exist in competition with Montreal refineries.'

The interests of the public, having regard to a proper supply of sugar, is also not at stake. The sugar output does not at present depend on refinery capacity. The sugar shortage is not in the slightest related to any question of capacity. It is related entirely to scarcity of the raw

article. Allotments of the raw article have been made by the Canada Food Board. Under these allotments the Canada Sugar Co. at Montreal receives 70,400 long tons; St. Lawrence Sugar Refineries, Montreal, 67,200; Dominion Sugar Co., Wallaceburg, 38,400; Acadia Sugar Refining Co., Halifax, 41,600; Atlantic Sugar Refinery, St. John, N.B., 51,200. This allotment falls far short of the full melting capacity. The Atlantic Sugar Refinery, as an instance, has a capacity of 6,000,000 lb. a week, and under its allotment is producing only 2,000,000 lb. a week. As a further result, no one refinery, or one set of refineries, is able to increase its output at present at the expense of its competitor.

The Canada Sugar Refining Co., of Montreal, sells sugar at some 45¢ a hundred less than its competitors. For example, its sugar sold in Toronto at first of the month at \$8.76 a hundred, while the St. Lawrence Sugar Refinery, of Montreal, and both the eastern refineries, sold at \$9.21. Their Port Hope price was \$8.90, while the Port Hope price of the three other refineries was \$9.35. The Canada Sugar Refining Co. is not selling one pound more sugar than it would sell if it sold at the same price as its competitors. The whole situation is artificial and will in all probability so remain until the war is over, unless a great change takes place in the supply of raw material before that event.

Under the McAdoo order, sugar rates are dealt with in such a way as not only to increase the revenues of carriers, but also to place the movement of sugar on a relatively fair basis, having regard to the value of the service rendered and the charges exacted on other competitors.

The main report, dated July 25, 1918, in which the order in council now appealed against was made, reads:

"Sugar classifies 5th class, and only moves on 5th class, in so far as the all-rail movement from eastern to western Canada is concerned. The district covered by sugar commodity tariffs stops at North Bay, on the G.T.R., and at Sudbury, on the C.P.R. The effect of the McAdoo order is to increase the rates on sugar between points in the U.S. covered formerly by commodity tariffs to a greater extent than 25%. For example, the former commodity rate on sugar from New York to Detroit was 24½¢. Under the McAdoo order it now becomes 35¢, an increase of 42%. From New York to Chicago the commodity rate was 31½¢; new rate, 45¢; an increase of 43%. The New York to St. Paul and Duluth rate was 38½¢; new rate, 65¢; an increase of 69%.

"As the commodity rates in Eastern Canada were not based on any fixed proportion of the 5th class, the percentage of the resulting increase would change in almost every instance. As similar increases were made in both countries before the McAdoo order, the parity of treatment in increases will be obtained by providing for an increase of 25%, except that in Canada, where the Canadian Freight Classification applies, the 5th class rate as increased would be substituted.

"The effect of the McAdoo order on the sugar movement from Montreal to Toronto would be as follows: The present rate is 18½¢ per 100 lb., while the present 5th class rate is 26½¢, and as increased under the McAdoo order would be 33¢. As a result, the rate would be increased 14½¢ per 100 lb., or 78.3%. The increase would make the freight costs 0.33¢ a pound, as against 0.185¢ a pound, and on a 10 lb. purchase by the consumer, 3.3¢, as against 1.85¢.

It is unnecessary to refer in detail to the more recent report made on the Toronto Board of Trade's complaint, but merely to repeat that an anomaly existed, in that sugar moved on a low commodity basis from Montreal and eastern refineries in the more confined area, bounded by North Bay on the G.T.R., and Sudbury on the C.P.R., while, in violence to all proper practice, the longer haul took a higher basic charge, namely, the appropriate 5th class classification. The order simply removes rate preferences and puts

the sugar movement where it legitimately belongs.

The foregoing considerations apply to the sugar situation generally. The complaint of the eastern refineries and the movement of sugar from the Maritime Provinces to Montreal and points west is now considered. The tariff situation is as follows:

St. John to Montreal—Rate effective prior to Mar. 15 .....	15¢
St. John to Montreal—Effective Mar. 15 .....	20½¢
St. John to Montreal—Present rate .....	42¢
Halifax to Montreal—Prior to Mar. 15 .....	19¢
Halifax to Montreal—Effective Mar. 15 .....	22¢
Halifax to Montreal—Present rate .....	43¢

The initial rates were frankly admitted to be rates that were put in simply for the purpose of helping the eastern refineries. They were not justified and could not be justified on any system of ratemaking, bearing in mind either a proper remuneration to the carrier or a fair proportion of the cost of transportation as against rates exacted from other shippers. These low rates were first put in from Halifax. The Intercolonial Ry. management has put in an arbitrary rate basis between Halifax and St. John, under which St. John takes a rate below Halifax of 1¢ per 100 lb. on all commodities moving in carlots. The history of the 5th class rate under which sugar would normally move from Halifax to Montreal is as follows:

Fifth-class rate, Halifax-Montreal, when first sugar rate made .....	25¢
Fifth-class rate, Halifax-Montreal, 1911 .....	28¢
Fifth-class rate, Halifax-Montreal, 1916 .....	30¢
Fifth-class rate, Halifax-Montreal, Mar. 15 .....	34½¢
Fifth-class rate, Halifax-Montreal, present rate .....	43¢

Both the low sugar commodity rates and the 5th class rates are Intercolonial rates. The C.P.R. meets the Intercolonial-St. John commodity rate. The shorter mileage from St. John to Montreal is that of the C.P.R. of 487 miles. The actual mileage on the Intercolonial is 735. While, for purposes of rate-making, railway companies are entitled to construct their rates on the shorter mileage basis, and the shorter mileage basis governs, the mere fact that there is a shorter mileage basis is not the slightest justification for putting in an unremunerative rate. The principle in the present case would go no further than to permit the Intercolonial, with its longer mileage, to meet the rates published by the C.P.R., and applicable to its shorter line. The C.P.R. supports and strongly urges the continuance of the rates reserved under the order in council.

The old commodity rates, as already stated, cannot be justified on any business railway principle. The old St. John rate of 18¢ yielded the Intercolonial 0.4898¢ a ton per mile. The 20½¢ commodity rate, which was effective prior to the effective date of the order in council, yielded a return of 0.5578 a ton per mile. It was sought to justify the rates for the purpose of building up industries in the Maritime Provinces. These provinces, however, are equally interested in the production of coal and lumber. The rate on bituminous coal from Stellarton, N.S., to Montreal, effective prior to Aug. 12 last, was 17¢; the mileage involved is 811 miles; and the resultant rate per ton per mile is 0.419¢; while sugar moving on a 19¢ rate from Halifax to Montreal, involving a mileage of 831 miles, gives a return of 0.457¢, and on the increased commodity rate of 22¢ a hundred, yields a rate per ton per mile of 0.529¢.

The value of coal moving from Stellarton may today be put at \$10 a ton. The



value of a ton of sugar can conservatively be placed at \$180. Coal rates do not stand by themselves. The price of lumber per ton is also very much less than sugar; on the movement from Elmsdale to Montreal, lumber has a commodity rate of 18c, the mileage 801, and the resultant rate per ton per mile 0.449c. To get nearer to the St. John movement, the lumber rate from St. John to Montreal is 16c, the actual mileage 731, and the resultant rate per ton per mile 0.437c. Iron and steel constitute a very important movement and a great industry of the Maritime Provinces. The general iron and steel rate from New Glasgow to Montreal was 43½c per hundred, a rate more than double the sugar rate, and yielding, on the mileage involved of some 804 miles, 1.08c a ton per mile. These illustrations are not given for the purpose of attacking either the coal, lumber, or iron and steel rates as abnormally high. As a matter of fact, they are not. The illustrations merely emphasize the fact that there was no justification for the low sugar commodity rate that could be made from any legitimate railway standpoint. I need only point out that with practically the same rate on sugar and coal, while the sugar takes generally a 5th class rating, coal belongs to the lowest classification of all, namely, 10th.

In view of the suggestion that notwithstanding the abnormal railway costs of today, that the Intercolonial should put in a particularly low rate, I now consider the question as to whether the Intercolonial can afford to make sacrifices in its revenue or not. Comparisons based upon different rates per ton per mile are merely illustrative; they are not absolute. A company whose business consists of an abnormally large proportion of carload movement, as against a company the majority of whose business consists in l.c.l. movement, can carry on business successfully at a very much lower rate per ton per mile. Again, a much higher per ton per mile return must be earned on a system whose average haul is short, than need be earned by a company whose haul is long. For example, the C.P.R.'s operations are much more profitable than the Grand Trunk's, yet the C.P.R. rate per ton per mile, as given in the railway statistics, is 0.676, while the G.T.R.'s is 0.738. The C.P.R., however, enjoys an average haul of 477 miles, while the G.T.R.'s is but 195 miles. Subject to these qualifications, and applying the rate as given, I find from the railway statistics of 1917, that the ton miles on the Intercolonial amount to 1,900,097,294. The rate per ton mile of the Intercolonial is shown as 0.576, with a resultant total earning of \$10,946,071. The following table applies to the Intercolonial's total of ton miles and the ton mile earnings not only of the Intercolonial, but of the different systems:

	Rate.	Results.
Intercolonial .....		\$10,946,071
Intercolonial freight carried		
at C.N.R. rate of.....	0.688	13,072,669
At C.P.R. rate.....	0.676	12,844,657
At G.T.R. rate.....	0.738	14,022,718
At average Canadian rate	0.690	13,110,671

It is perfectly apparent that the Intercolonial returns are abnormally low. The increases which the adoption of the other rates per ton per mile would yield are as follows:

Per ton per mile basis.	Increased revenue	Increase in per cent.
Canadian Northern ..	\$2,126,598	19
Canadian Pacific.....	1,898,586	17
Grand Trunk .....	3,076,647	28
Average .....	2,164,600	19

The average haul on the different systems, as shown by the statistics, work out as nearly as may be as follows:

Intercolonial .....	266 miles
Canadian Northern .....	319 miles

Canadian Pacific .....	477 miles
Grand Trunk .....	195 miles
Average, all lines.....	255 miles

As a ton mile rate must increase with a decreasing mileage, it would not be at any rate unreasonable to compare the Intercolonial ton mile rate with the average rate in Canada, the average haul in Canada being 255 miles, against 266 miles on the Intercolonial, and on this basis the earnings of the Intercolonial are entirely too low. The status of the Intercolonial can also be approached from the basis of its operating ratios in comparison with those of other lines. I again use the statistics of 1917. The ratios are as follows:

Intercolonial .....	90.9
Canadian Northern .....	71.7
Canadian Pacific .....	65.7
Grand Trunk .....	71.9
Average, all lines.....	71.7

These operating ratios are capable of an exact definition when the system's whole business is considered. In the absence of a system of accounting which distinguishes freight costs from passenger costs, in the same way that passenger earnings are distinguished from freight earnings, the ratios can be applied only illustratively to either movement. Taking, however, the different ratios and applying them to the Intercolonial line freight movement, the net freight operating revenue would vary as follows:

At ratio of	Revenue.
Intercolonial .....	\$ 996,092
Canadian Northern .....	3,207,198
Canadian Pacific .....	3,754,502
Grand Trunk .....	3,185,306
Average, all lines.....	3,207,198

These seems to be some issue as to what the exact Intercolonial operating mileage is. It is given in one figure in the statistics and in another figure in the Railways Department report. For the purposes of the following table, I have taken the mileage operated as 1563, and the results of earnings per mile of line as applied to the Intercolonial and based on the foregoing table, are as follows, viz., net freight operating receipts per mile of line:

On Intercolonial ratio.....	\$ 637
On Canadian Northern ratio.....	2,051
On Canadian Pacific ratio.....	2,402
On Grand Trunk ratio.....	2,037
Average all lines.....	2,051

I do not consider at all the question as to whether the Canadian taxpayer is or is not entitled to any return from his investment in the Intercolonial, but unless that investment must constantly grow, without at the same time a proportionate increase in value, substantial surpluses have each year to be earned, reserves must be set aside, or else the capital account must constantly be unduly inflated. Railways from time to time must be practically renewed, in order to keep the systems on a proper basis. I think it is practically conceded that with interest on only a 4% basis, 2% on the actual investment ought to be yearly set aside. Eliminating all question of interest charges and payments of past deficits, the necessity of such a reserve is easily shown by taking the cost per mile of the Intercolonial to the country. In 1899 it was \$37,957, in 1911 it was \$57,419, and the cost per mile today on the mileage actually owned is over \$79,000; the cost of the road to Mar. 31, 1917, being returned as \$120,275,032. A percentage of this increase can undoubtedly be justified, but it is equally certain that a very large percentage of it cannot be justified on any basis of normal values and business accounting. Under the circumstances there is no question that any rate reductions on the Intercolonial are really not made at the expense of that system, but at the expense of Canadian taxpayers generally.

Mr. Chrysler urged that different treatment had been accorded under the McAdoo order to refiners in the different districts. He is absolutely correct. The adoption of the 5th class was made in official classification territory. This official classification territory covers territory contiguous to Eastern Canada. He pointed out that the refiners at New Orleans were specially provided for by the McAdoo schedule, and argued that their commodity rates and differentials were preserved. The New Orleans refineries did not lie in official classification territory, consequently the matter had to be dealt with on a different basis. All the eastern refineries in Canada, however, are in the same classification territory. The results, however, in New Orleans show that increases were made on very much the same parity, although on a different basis. The evidence shows that the old rate, New Orleans to Chicago, was 24.3c, new rate 45c, an increase of 85.2%; to St. Louis, old rate, 18.3c, new rate 44.5c, an increase of 143%; to Cincinnati, old rate 19.8c, new rate 46c, an increase of 132%; to East Burlington, old rate 28.8c, new rate 50c, an increase of 73.6%.

Mr. O'Grady, of the St. John Refinery, urged that the Montreal rate should be reduced to 27c. He leaves the matter in this way:

"The proposal of the railway company is 42c, St. John to Montreal, which you think should be reduced to 27c. You get at that reduction by taking, as I understand you, the new New York-Montreal rate on raw sugar at 21½c and add to it the 5½c which you think you should absorb, thus making a 27c rate?"

"Mr. O'Grady: 'Yes, sir. That is the basis we have been competing on ever since we started.'"

While the eastern refiners are willing to accept a 27c rate to St. John, they insist that the differential of 11½c should be continued on movements west. How this would work out can be illustrated by the Toronto movement. The record covering the question reads as follows:

"Chief Commissioner: 'Your Toronto rate today is what?'"

"Mr. O'Grady: '30 cents.'"

"Chief Commissioner: 'The Montreal rate is, what, the last rate to Toronto?'"

"Mr. Tilston: '18½c.'"

"Chief Commissioner: 'My recollection is that the Montreal to Toronto rate is 18½c.'"

"Mr. Tilston: 'That is correct.'"

"Chief Commissioner: 'Your rate to Toronto is 30c, Mr. O'Grady?'"

"Mr. O'Grady: 'Yes.'"

"Chief Commissioner: 'That gives you a differential, as you put it, of 11½c?'"

"Mr. O'Grady: 'Yes.'"

"Chief Commissioner: 'And the new Montreal to Toronto rate is what?'"

"Mr. Tilston: 'Standard 33.'"

"Chief Commissioner: 'It goes 33c as against 18½c.'"

"Mr. Tilston: 'Yes.'"

"Chief Commissioner: 'As I understand your submission, Mr. O'Grady, you want your St. John rate to have the same differential of 11½c. That would make your St. John-Toronto rate 44½c.'"

"Mr. O'Grady: 'Yes.'"

It will be observed that the new St. John rate of 44½c would be made up by the continuance of the old arbitrary or differential of 11½c from St. John to Montreal and the addition of the new 33c rate to Toronto. The result is that while the rate from Montreal to Toronto would be increased by approximately 80%, there would be no increase whatever in that portion of the through rate which is represented by the St. John-Montreal haul, although there is, of course, a substantial increase, treating the matter in percentages, in the through rate, the increase being some 41%. But the rate, St. John to Montreal, is even more out of line than the Montreal to Toronto rate. Both were unduly low, but the Intercolonial rate was much more out of line. The weaknesses and injustices of the tariff situation would be merely accentuated by the adoption of this suggestion. Traffic is infinitely heavier between Montreal and



Toronto and points west than it is between St. John and Montreal. Usually rates relate to traffic, to its volume, and to its earnings. To carry out Mr. O'Grady's suggestion would be to do violence to all cardinal principles. Further, if a proportionate rate basis was put in on any such theory, the Dominion Sugar Refineries, situate at Wallaceburg, Chatham and Kitchener, with far shorter hauls to Toronto, would naturally demand similar treatment to that which St. John would receive. The Montreal refiners, as well as the Dominion Sugar Co., do not object to the advance in rates, but they are insistent that if concessions are given to one refiner they should be given to all, and that the inequalities of the past cease. Mr. Hauson, who appeared for the Dominion Sugar Co., is reported as follows:

"Our raw sugar rate from New York to Wallaceburg or Chatham is 27c, which I believe is as high or higher than the rate paid by any of the other Canadian refiners. I wish to endorse the statements made by Mr. Tilston. Our company is fully in accord with those sentiments. We consider that it would be a mistake to re-open the order of July 27. I would like further to add that should the Atlantic seaboard refineries be given any consideration by the board, we would respectfully request the board to give us similar consideration from Wallaceburg and Chatham to Montreal and points east."

The statements made by the Montreal refiners are to the effect that the order for the first time gives them fair rates, having regard to hauls from other refineries, and that for the first time they properly enjoy their geographical and commercial position, not only as against Atlantic refineries, but also as against western refiners. The claim is, however, advanced that because investments were made in refineries in Halifax and St. John, when a certain scale of freight rates were in force, the freight rate situation cannot be disturbed; that the relationship of rates, not in percentages, but as to the actual spread, must remain constant. This argument cannot be regarded as sound, either under the provisions of the Railway Act or from any accepted economic commercial standpoint. There is only one thing certain about freight rates and that is, that the carrier, under the act, will not be permitted to make an undue profit. Just as soon as rates are unreasonably high they must be reduced, and, conversely, just as soon as rates are unreasonably low, they ought to be raised to a fair, equitable, and just basis, without regard to one section of the country or the other, but having regard to the inhibitions of the Railway Act, which prohibit one locality being discriminated against in ease of another. To accept the proposition, as a logical result, the principle would not only apply to railways, but would also mean that the industry's tax rate could not be increased and its cost of doing business locally ought not to be advanced. As a further corollary, any protective customs tariff in force when the investment was made must always be regarded as fixed, unless changed in the interests of the industry as against its foreign rival.

Mr. Chrysler argues that the Intercolonial is removed from the inhibitions of the Railway Act. In this he is absolutely right. The effect of the argument is that any illegal and improper preference under the Railway Act may safely be practised by the Intercolonial. The position used to be just the same, as far as private railway companies were concerned, before the act was passed. Discriminations and preferences could be and were from time to time practised. I do not for one moment, however, suppose, that as Parliament by the Railway Act has adopted the principles of equality in railway rates not only as between shippers, but as be-

tween localities, that these principles ought not to be considered because the Intercolonial, as well as a private corporation, is involved. Dealing with the matter entirely as a railway question, there is no just ground from which the Halifax and St. John refineries can escape paying the appropriate 5th class rates and contributing, in equal proportions with the other refineries, to the cost of the services which they enjoy, differing as that cost must differ, having regard to the length of the haul. If there should be a different rate system adopted in the different localities for the transportation of sugar, from a railway standpoint the lower rate basis would have to be given to those territories in which traffic and railway profits are the greater. Railway earnings are much larger in the prairie provinces and in Ontario than they are in New Brunswick and Nova Scotia, but in my view there is no question that a common basis should apply in the territories in question. I have so far dealt with the matter on a railway basis pure and simple. As I see it, this basis is not the only basis which of necessity should control the situation. The order in council is the result of war troubles and war expenditures. Both the St. John and the Halifax refineries have had an unduly large share of the war burden thrown upon them. Halifax and St. John have, geographically, under ordinary business conditions, certain advantages which Montreal has not. On the other hand, Montreal has advantages which they have not. St. John, for example, is still getting a packet service for 25% of its raw sugar without any additional charge over and above the 50c New York ocean rate from the West Indies. In normal times its rate on the balance of its raw material is 6c over New York, with the result that in so far as 25% of its sugar is concerned, it is on the New York basis, and as to 75% of it, 6c over. In so far as its whole supply is concerned, it would, therefore, average 4½c over New York. As a general thing, Montreal buys its raw sugars in the New York market, although in the past it has got raw sugar direct. The present New York rail rate to Montreal is 21½c, but the extra 6c rate which is charged on the vessels from New York to St. John, as the result of the war and vessel shortage, has been increased to 20c; so that as a consequence, at St. John today, instead of paying an average of 4½c over New York, it pays 15c, a difference of 11½c a hundred.

While no sugar now moves from St. John to Montreal, under the policy enforced as a result of which St. John gets the benefit of as low an import rate as the lowest port in U.S. territory, and thus obtains just as much traffic as is possible to secure for it, the St. John-Montreal rate on raw sugar is but 19c. It may be noted that there is a shrinkage from 106 lb. to 100 lb. in refining the sugar. I at one time thought that the rates on refined sugar might be graded in relation to the raw sugar, properly weighing the increased value of the commodity and the shrinkage in the material. I find, however, that the prices vary so much from time to time that it would be impracticable to so base the rate. The present price of raw sugar in Montreal may be taken at 5c, while the refined sugar may be taken as 9c, although the average is somewhat higher. It should further be borne in mind that on no other commodities are rates so graded. With St. John obtaining its raw sugar on a much lower basis than Montreal and enjoying the benefits of the export business, these advantages may well offset, and probably do

offset, the fact that Montreal is much nearer the larger consuming centres of the country. The movement to the large consuming western territory can best be illustrated by the rates to Winnipeg, effective under the order in council. The rate, Montreal to Winnipeg, is 87c, and from St. John to Winnipeg is \$1.03½. Under normal conditions, transportation costs over New York work out, as between the rival refineries, as follows:

	St. John refinery.	Montreal via St. John.
Freight on raw.....	4.50	23.50
Freight, refined .....	103.50	87.00
Total .....	\$1.0800	\$1.1050

For the Toronto market the position is:

	St. John refinery.	Montreal
Freight, raw .....	4.50	23.50
Freight, refined .....	50.50	33.00
Total .....	.5500	.5650

The Montreal cost on the raw material over New York is made up of the 4.50c St. John over New York, plus the St. John import rate of 19c. As Montreal, as a matter of fact, buys its raw sugar in the New York market and the rail rate to Montreal is 21½c, the real relative position in these two large typical consuming centres is as follows at Winnipeg: St. John freight, \$1.08; Montreal freight, \$1.08.50; at Toronto, St. John freight 55c, and Montreal freight 54c. These results could not have been made fairer if the order in council had been considered from the refiners' standpoint, apart from all question of railway necessity. The position today, therefore, is that while the new rate preserves to Montreal its natural geographical advantage on the manufactured article to which it is entitled, the natural geographical advantage on the raw material which Halifax and St. John normally enjoy is taken away from them as a result of war conditions. It is quite true that the rates on raw sugar have gone up at the other refineries, but on the other hand the Dominion Sugar Refinery uses beet root in a large proportion. This proportion varies, but I am fairly safe in saying that at present a fair ratio would range from at least 33 to 40%.

As the order in council is the result not only of a pressing railway condition, but also has to do with war conditions, and as these war conditions work peculiar hardship as against the Atlantic refineries and not to anything like the same degree as against the Dominion and the Montreal refineries, I would recommend that, as a temporary measure of fairness, while traffic conditions remain as they are, the St. John-Montreal rate be reduced 10c, making that rate 32c, and the Halifax rate be reduced 11c, making that rate 33c; and that for all points west through rates from St. John and Halifax for the time being move on the arbitraries suggested by Mr. Silver of the Acadia Sugar Refinery, over the Montreal rate, and arrived at by increasing the old Halifax arbitrary of 12.50c and St. John of 11.50c, by 25%. In making these recommendations, I have carefully considered the claims of the Dominion and Montreal refineries that any exceptional treatment extended to the more eastern refineries should also apply to them. There is no question of the importance of the beet root industry, both from the standpoint of the Ontario farmer and the fact that the more raw material produced in the country the less will be imported, to the financial gain of the country as a whole. Ordinarily, I am free to admit that any reduction in a fair tariff, free from discrimination, accorded to St. John and Halifax, ought, and indeed under the Rail-



way Act must, be accorded Wallaceburg and Chatham. The conditions of today are extraordinary, and the measure of relief suggested for the eastern refiners cannot, under present conditions, work any hardship either against those of Ontario or Montreal.

I now deal with the complaint of the British Columbia Sugar Refineries at Vancouver. The C.P.R. had largely to do with the inception of this refinery, and for the purpose of developing the industry, put into effect low commodity rates. For local movements the commodity moved on the appropriate 5th class scale, but a commodity blanket rate was made effective from Banff east in prairie territory. As a result of the establishment of the refinery, raw sugars of the Orient are refined in Canada. The raw sugar is subject to a duty of \$1.37½ per 100 lb., the duty on the refined product being \$2.07½. As a result, the movement of sugar from the Pacific has been practically that of the refinery in question, which has been very successful. The change brought about in rates under the order is indicated by the following table:

Vancouver-Calgary rate of 86½ becomes \$1.05.  
 Vancouver-Medicine Hat rate of 86½ becomes \$1.21½.  
 Vancouver-Moose Jaw rate of 86½ becomes \$1.42½.  
 Vancouver-Regina rate of 86½ becomes \$1.44.  
 Vancouver-Brandon rate of 86½ becomes \$1.50.  
 Vancouver-Portage la Prairie rate of 86½ becomes \$1.59.  
 Vancouver-Winnipeg rate of 89½ becomes \$1.59.

Many complaints have been made from time to time by the Montreal refineries against the low commodity rates enjoyed by the British Columbia Sugar Refineries. At one time the rates broke as far east as Winnipeg. Under a judgment of the board, rates were equalized at Portage la Prairie. The rates referred to as equalizing at that point were all-rail rates, but as a matter of fact the rail and water breaking point, which constitutes the real movement, was at Wapella, Sask., just past the Manitoba boundary. The complaints, however, have continued and the matter was pending for judgement at the time the order in council was made. Under the rate basis applicable in the different territories under consideration, the prairie territory enjoying a lower rate basis than British Columbia (owing to the great cost of railway construction and of railway operation in B.C.), the all-rail rate today from Fort William west would meet the rate from Vancouver east between Medicine Hat and Calgary, while the rate from Montreal, if the commodity moved on the lower water basis in eastern territory, and thus be a rail-lake and rail movement, would now break at about Swift Current, Sask. The eastern refineries have always argued that they were entitled to the rates being so adjusted. On the other hand, the British Columbia Refineries has always taken the position that its particular movement ought not to be considered on a mileage basis, and that the rate, having voluntarily been put in by the C.P.R., should stand. In the past the C.P.R. was the only railway company interested. It certainly required no increased revenues. The Canadian Northern today is operating out of Vancouver. Its deficit for the current year will not be short of ten million dollars, and to this deficit would have to be added the annual cost of the payment the government makes under the arbitration proceedings, which cannot well be stated as being less than \$550,000. But the Canadian Northern rates cannot be raised unless the rates of the Canadian Pacific today are not those it was enjoying when the former complaint was heard. It is, however, in the interests of the rail-

ways themselves, as well as in the interests of the public, that a substantial movement of sugar should be made from the west east. To break rates at Bassano, which is practically Calgary, would unduly and unfairly shut the B.C. Refineries out of a market which is contiguous to it and hand that market over to competitors situate many hundreds of miles farther away. The position is not that of the Nova Scotia and New Brunswick refineries, which seek to have an added mileage of 487 miles in part absorbed by the railways. The position is reversed.

Under all the circumstances, recognizing on the one hand the absolute necessity of an increase in rates, and on the other hand that the markets of the British Columbia Refineries should not by a change of railway rates be largely wiped out, I beg to recommend that Regina, which is 388 miles east of Bassano, be made the breaking point, and that the requisite amending order be made. In order to cover the situation, the order should read as follows:

The commodity rates to be charged upon sugar, in carloads, from Vancouver to destinations in Alberta, Saskatchewan, and Manitoba shall be as follows:

(a) To Regina, Lanigan, Humbolt, and Melfort—the rail-lake-and-rail 5th class rates contemporaneously in effect from Montreal to the same points.

(b) To Winnipeg—the percentage of the 5th class rate from Vancouver to Winnipeg, equivalent to the ratio of the commodity rate from Vancouver to Regina, to the 5th class rate from Vancouver to Regina.

(c) Subject to the said rates as maxima, the commodity rates to destinations intermediate to the aforesaid on the direct lines of transit shall be reasonably graduated until they merge into the 5th class rates from Vancouver.

(d) To destinations off the aforesaid direct lines of transit, the commodity rates shall not exceed those for equivalent direct line distances applied to the shortest practicable routes, with reasonable additions where the direct line mileage is insufficient for the purpose.

(e) During the existence of the class freight tariffs from Vancouver and Montreal in effect at the date of this order, the commodity rates from Vancouver, graduated as aforesaid, shall not exceed 94c to Banff, \$1 to Calgary and Edmonton, \$1.05 to Lethbridge, \$1.21 to Saskatoon, and \$1.26 to Prince Albert, per 100 lb. respectively.

#### Order in Council Changing the Dates.

On Aug. 24, the Dominion Government passed an order in council under authority of the War Measures Act, 1914, ordering that the commodity rates on refined sugar in carloads be as follows:—

To Montreal for local deliveries, 32c per 100 lb. from St. John, N.B., and 33c per 100 lb. from Halifax.

To destinations in Canada, west of Montreal, the 5th class rates current from Montreal, with the addition of 14½c per 100 lb. from St. John and 15½c per 100 lb. from Halifax.

From Vancouver, B.C., the rates provided for in the order in council are those recommended by the Chief Railway Commissioner, at the end of his report as given above, in paragraphs a, b, c, d and e.

The new rates are to come into force from St. John and Halifax on Sept. 12, and from Vancouver on Sept. 23, by publishing and filing on one day's notice with the Board of Railway Commissioners, and shall remain in force for the duration of the war or until further ordered.

## The United States Railroad Administration's Work.

**Coastwise Steamships.**—The Railroad Administration has placed H. B. Walker, President of the Old Dominion Steamship Co., in charge of all coastwise steamships operated by the administration. He succeeds the administration's coastwise steamship advisory committee, of which L. J. Spence was chairman.

**Meals on Dining Cars.**—A la carte luncheon and dinners on dining cars on U.S. railways will be abandoned after Oct. 1, and table d'hôte meals of not more than four courses substituted, with the charge limited to \$1, except on a few through trains, where \$1.25 will be charged. Breakfast will be served a la carte with a restricted menu. The purpose is to economize and put meals within the reach of more people, increase the capacity of dining cars, save labor and conserve food.

**Pullman Lines.**—The operating department of the Pullman Co., now under U.S. Government control, is known as the Pullman Car Lines. L. S. Taylor, heretofore Controller, Pullman Co., has been appointed Federal Manager of the Pullman Car Lines, with office in the Pullman Building, Chicago. He has jurisdiction over all departments, reporting to the Director, Division of Operation, U.S. Railroad Administration.

**Garnisheeing of Wages, Etc.**—The Director General has issued the following order:—"Whereas proceedings in garnishment, attachment, or like process by which it is sought to subject or attach money or property under federal control or derived from the operation of carriers under federal control under the act of Congress of Mar. 21, 1918, are inconsistent with said act, and with the economical and efficient administration of federal control thereunder; and whereas such proceedings are frequently commenced, particularly for the garnishment or attachment of amounts payable, or claimed to be payable, as wages or salaries of employes, which practice is prejudicial to the interests of the Railroad Administration in the operation of the lines and systems of transportation under federal control, and is not necessary for the protection of the rights or the just interests of employes or others; and whereas if any rules or regulations become necessary to require employes to provide for their just debts, the same will be issued hereafter; it is therefore ordered, that no moneys or other property under federal control or derived from the operation of carriers while under federal control shall be subject to garnishment, attachment, or like process in the hands of such carriers, or any of them, or in the hands of any employe or officer of the United States Railroad Administration.

E. B. Tilt, formerly Engineer of Tests, Angus Shops, C.P.R., who returned recently to Montreal from Spain, where he was for some time as President and General Manager, Sociedad Hispano-Americano (Gaston Williams) writes: "I have been making an effort to catch up with the reading of the copies of Canadian Railway and Marine World which came here after I requested you to change my address, so that I may get up to date on current transportation matters. Canadian Railway and Marine World was among my most welcome visitors in Madrid and kept me most completely in touch with the railway and marine situation in Canada."



### Cross Ties Bought in Canada in 1916 and 1917.

The following bulletin, prepared by the Interior Department's Forestry Branch, is based on reports received from 41 steam railways and 25 electric railways which bought ties in 1917. The average prices in the tables are based on the cost at the point of purchase, and may or may not include long-haul transportation charges. Only in the cases of those woods which are used in large quantities can value given be taken to represent the relative value of the wood.

A total of 7,661,715 ties was bought in 1917, a decrease of 177,800, or 2.3%, compared with 1916.

Of the total ties bought, 649,227 were treated with preservative to withstand decay. This is 8.5% of the total, compared with 2.5% in 1916 and 5% in 1915.

Jack pine heads the list in number of ties cut with 40.2% of the total. Jack pine has held this position since 1911, when it displaced eastern cedar. Eastern cedar still holds well on to second place and shows a slight increase as compared with 1916.

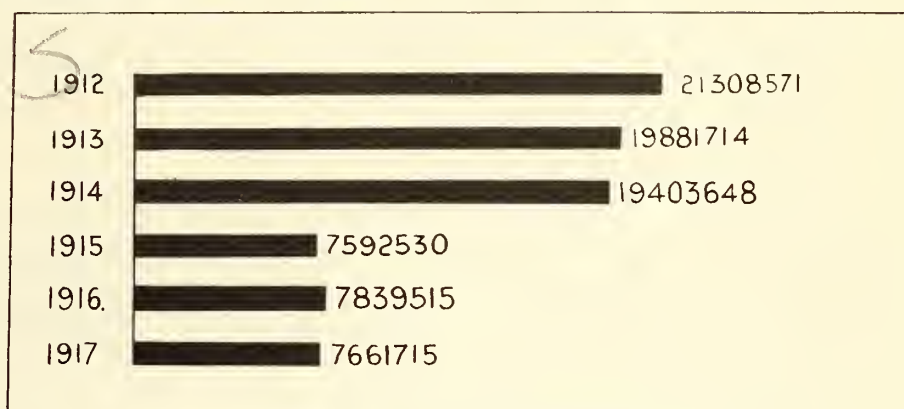
The average value was 51c a tie in 1917, compared with 42c in 1916. Electric railways bought 4.9% of the total in 1917 compared with 3.4% in 1916 and 2.5% in 1915. The electric railways paid an average of 56c a tie, while the steam railways paid an average of 51c.

The number of ties imported in 1917 was 1,213,025, valued at \$971,254, compared with 622,819 imported in 1916, valued at \$424,599. The majority of these ties were of species of wood either not native to or not abundant in Canada, such as oak, hard pine, chestnut, and gum.

### Ties Bought, 1916 and 1917, by all railways.

Kind of Wood.	1916.				1917.			
	Number.	Value.	Av. Value.	Per Cent.	Number.	Value.	Av. Value.	Per Cent.
<b>Total</b> . . . . .	7,839,515	\$3,307,319	\$0.42	100.0	7,661,715	\$3,902,189	\$0.51	100.0
Jack Pine . . . . .	3,708,781	1,461,114	.39	47.3	3,077,228	1,280,095	.42	40.2
Eastern Cedar . . . . .	1,642,836	737,253	.45	21.0	1,674,343	896,601	.54	21.9
Oak . . . . .	353,751	253,450	.72	4.5	937,630	811,749	.87	12.2
Hemlock . . . . .	631,706	231,941	.37	8.1	610,628	279,366	.46	8.0
Douglas Fir . . . . .	328,714	100,946	.31	4.2	437,509	163,912	.37	5.7
Tamarack . . . . .	434,833	163,225	.38	5.5	373,218	158,420	.42	4.9
Western Hemlock . . . . .	62,749	23,657	.38	0.8	148,031	90,558	.61	1.9
Hard Pine . . . . .	126,901	84,775	.67	1.6	129,278	92,460	.72	1.7
Eastern Spruce . . . . .	351,980	147,295	.42	4.5	115,578	37,939	.33	1.1
Western Cedar . . . . .	65,472	24,094	.37	0.8	49,652	23,538	.47	0.6
Maple . . . . .	12,374	7,177	.58	0.2	28,514	21,412	.75	0.4
Western Hemlock . . . . .	62,749	23,657	.38	0.8	148,031	90,558	.61	1.9
Beech . . . . .	18,433	10,155	.55	0.2	17,803	16,050	.90	0.2
Chestnut . . . . .	77,093	52,774	.68	1.0	17,602	11,642	.66	0.2
Balsam Fir . . . . .	1,454	263	.18	*	5,847	690	.12	0.1
Elm . . . . .	4,495	2,029	.45	0.1	5,622	2,931	.52	0.1
Birch . . . . .	6,229	4,148	.67	0.1	5,245	4,238	.81	0.1
Yellow Cypress . . . . .	.....	.....	.....	.....	2,026	905	.45	*
White Pine . . . . .	.....	.....	.....	.....	1,141	393	.34	*
Gum . . . . .	2,588	1,166	.45	*	1,035	661	.64	*
Sycamore . . . . .	.....	.....	.....	.....	1,034	660	.64	*
Ash . . . . .	497	185	.37	*	550	243	.44	*
Red Pine . . . . .	8,401	1,620	.19	0.1	.....	.....	.....	.....
Western Larch . . . . .	228	52	.23	*	.....	.....	.....	.....

\*Less than one-tenth of 1 per cent.



Cross Ties Bought in Canada, 1912-1917.

### Cross-Ties Bought, 1916 and 1917, by steam railways.

Kind of Wood.	1916.				1917.			
	Number.	Value.	Av. Value.	Per Cent.	Number.	Value.	Av. Value.	Per Cent.
<b>Total</b> . . . . .	7,572,878	\$3,189,834	\$0.42	100.0	7,283,330	\$3,692,111	\$0.51	100.0
Jack Pine . . . . .	3,668,195	1,443,529	.39	48.4	3,014,987	1,246,406	.41	41.4
Eastern Cedar . . . . .	1,570,586	705,359	.45	20.7	1,568,307	840,214	.54	21.5
Oak . . . . .	339,712	241,763	.71	4.5	932,760	807,895	.87	12.8
Hemlock . . . . .	579,474	206,898	.36	7.7	601,943	274,350	.46	8.3
Douglas Fir . . . . .	279,092	86,646	.31	3.7	372,509	138,892	.37	5.1
Tamarack . . . . .	414,367	154,105	.37	5.5	366,734	154,981	.42	5.0
Hard Pine . . . . .	126,559	84,518	.67	1.7	129,278	92,460	.72	1.8
Eastern Spruce . . . . .	344,937	144,702	.42	4.6	115,678	37,939	.33	1.6
Western Cedar . . . . .	55,972	19,344	.35	0.7	49,652	23,538	.47	0.7
Maple . . . . .	12,374	7,177	.58	0.2	28,514	21,412	.75	0.4
Western Hemlock . . . . .	62,749	23,657	.38	0.8	25,924	9,274	.36	.04
Western Spruce . . . . .	.....	.....	.....	.....	22,101	7,726	.35	.03
Beech . . . . .	18,372	10,121	.55	0.2	17,478	15,895	.91	0.2
Chestnut . . . . .	76,825	52,604	.68	1.0	17,097	11,353	.66	0.2
Balsam Fir . . . . .	1,454	263	.18	*	5,847	690	.12	0.1
Elm . . . . .	4,495	2,029	.45	0.1	5,516	2,891	.52	0.1
Birch . . . . .	6,229	4,148	.67	0.1	5,245	4,238	.81	0.1
White Pine . . . . .	.....	.....	.....	.....	1,141	393	.34	*
Gum . . . . .	2,588	1,166	.45	*	1,035	661	.64	*
Sycamore . . . . .	.....	.....	.....	.....	1,034	660	.64	*
Ash . . . . .	497	185	.37	*	550	243	.44	*
Red Pine . . . . .	8,401	1,620	.19	0.1	.....	.....	.....	.....

\*Less than one-tenth of 1 per cent.

### Ties Bought, 1916 and 1917, by electric railways.

Kind of Wood.	1916.				1917.			
	Number.	Value.	Av. Value.	Per Cent.	Number.	Value.	Av. Value.	Per Cent.
<b>Total</b> . . . . .	266,637	\$117,485	\$0.44	100.0	378,385	\$210,078	\$0.56	100.0
Western Hemlock . . . . .	.....	.....	.....	.....	122,107	81,284	.67	32.3
Eastern Cedar . . . . .	72,250	31,894	.44	27.1	106,036	56,387	.53	28.0
Douglas Fir . . . . .	49,622	14,300	.29	18.6	65,000	25,020	.38	17.2
Jack Pine . . . . .	40,586	17,585	.43	15.2	62,241	33,689	.54	16.4
Hemlock . . . . .	52,232	25,043	.48	19.5	8,685	5,016	.58	2.3
Tamarack . . . . .	20,466	9,120	.45	7.7	6,484	3,439	.53	1.7
Oak . . . . .	14,039	11,687	.83	5.3	4,870	3,854	.79	1.8
Yellow Cypress . . . . .	.....	.....	.....	.....	2,026	905	.45	0.5
Chestnut . . . . .	268	170	.63	0.1	505	289	.57	0.1
Beech . . . . .	61	34	.56	*	325	155	.48	0.1
Elm . . . . .	.....	.....	.....	.....	106	40	.38	*
Western Cedar . . . . .	9,500	4,750	.50	3.6	.....	.....	.....	.....
Eastern Spruce . . . . .	7,043	2,593	.37	2.6	.....	.....	.....	.....
Hard Pine . . . . .	342	257	.75	0.1	.....	.....	.....	.....
Western Larch . . . . .	228	52	.23	0.1	.....	.....	.....	.....

\*Less than one-tenth of 1 per cent.

**The Metric System in Great Britain.**—A report presented to the Imperial Parliament recently, by the committee appointed to make suggestions as to the commercial and industrial policy to be followed after the war, contains certain conclusions relative to the adoption of the metric system in Great Britain. The committee states that having given the subject very full consideration, it is unable to recommend the compulsory adoption of the system, expresses itself as not being convinced that it is better than the present British system, and as satisfied that the practical objections are such as to outweigh any advantages claimed for it.

**The Pacific Terminal Land Co.** has been incorporated under the British Columbia Companies Act with authorized capital of \$8,000 and office at Victoria, to acquire and develop land and properties in the province, and to build wharves, tramways and logging railways, for operation by steam or electricity.

The Edmonton, Dunvegan & British Columbia Ry. special freight rates for cattle, sheep, hay and straw and haying outfits, have been arranged with the Dominion Department of Agriculture's Live Stock Branch. The shipper must have a certificate from the provincial agricultural department before he can make shipment, all charges being paid by the government.

The Peace River Development Co. is reported to have contracted to transport by water to Peace River Crossing, 200,000 bush. of grain from the Peace River Valley before the close of navigation. The grain will then be shipped by the Central Canada Ry. and the Edmonton, Dunvegan & British Columbia Ry. to Edmonton, and thence east by one of the transcontinental lines.



## Canadian Northern Railway's Temporary Passenger Station, etc., in Montreal.

The Canadian Northern Ry.'s temporary passenger station at the corner of Lagauchetiere and St. Monique Streets, Montreal, is practically completed. It is a reinforced concrete structure, with two stories above grade and one below. The

side by a retaining wall 18 ft. high, which is run back for 50 ft. The court is 33 ft. wide and is paved with brick. It will serve as a wagon approach to the incoming baggage room, which has two wide doors opening directly on the court.

At its right descends a broad staircase, leading directly to the trains. There is also an entrance to the women's waiting room from the entrance vestibule and it contains space for telegraph office and news stand. The arrangement of the en-

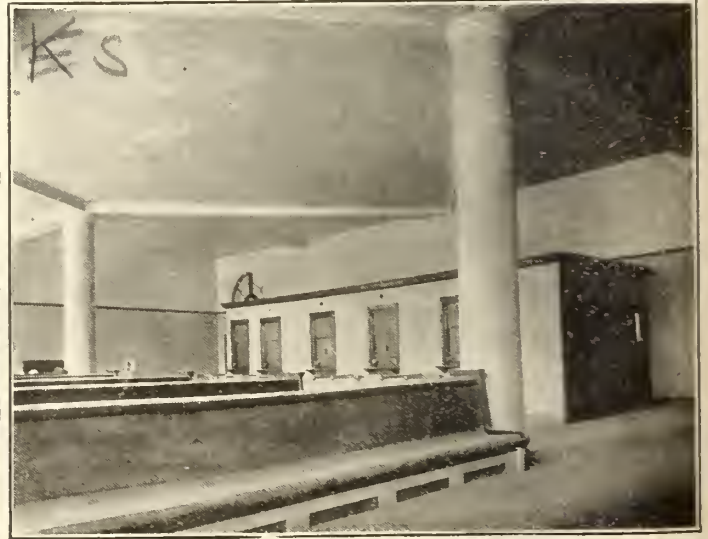


The Canadian Northern Railway's Temporary Station in Montreal, Lagauchetiere St. front.

exterior walls are lined with 6 in. terra cotta blocks, with an air space between the concrete outer wall and the lining. The main facade faces Lagauchetiere St. The building is of classic design, the passenger entrances being five large arched

A passenger entering the building from Lagauchetiere St. will go immediately into the entrance vestibule, which is about 30 x 80 ft. It will be the heart of the building, from which all its activities will radiate. It will also be used, in some de-

trance vestibule has been made with the idea of saving the traveller as many unnecessary steps as possible; he may transact all his business here, check his baggage, purchase his tickets, obtain his newspaper, check parcels and proceed di-



The Canadian Northern Ry.'s temporary station in Montreal. Rotunda and ticket wickets to left, waiting room to right.

openings above which are medallions containing the C.N.R. Co.'s insignia. A dignified entablature in cement surmounts the building on all facades. Over the passenger entrances on Lagauchetiere St. is a marquise, protecting the sidewalk from rain and snow. To the right of the building is a court, formed on its outer

gree, as a waiting room for those who have not the time nor inclination to go back to the main waiting room, which will immediately adjoin it at the rear. Upon this entrance vestibule, on the side opposite the entrance, open four windows of the ticket office. At its end, to the left, is the baggage counter and parcel room.

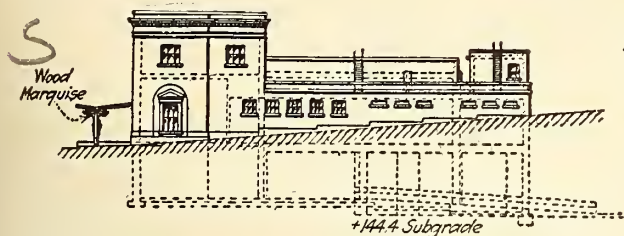
rectly to his train without traversing the main waiting room. If he arrives well ahead of train time and wishes to sit down for a while, he may cross the entrance vestibule to the main waiting room, which is immediately behind it, and is 50 x 80 ft. The beamed ceiling of this latter room is supported by two columns,



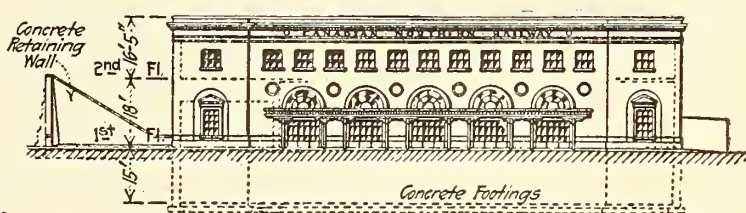
the beams of the ceiling radiating from the column heads, forming a diamond pattern. Between the main waiting room and the entrance vestibule are ticket offices, enclosed with terra cotta walls and ornamented with marble slabs and bronze

area of 2,100 sq. ft. As before stated, this room has two large doors opening out on the wagon court, and at the extreme rear there is a freight elevator, large enough to receive trucks, which will descend to the outgoing baggage room,

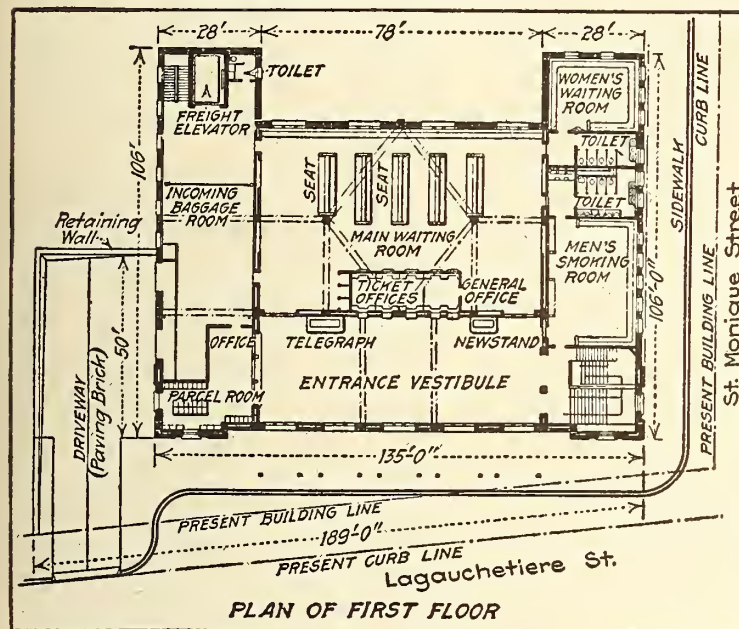
compartments, with seats arranged around the walls, the radiators being concealed in recesses behind the seats. There are drinking fountains in the main waiting room, women's waiting room, and the men's smoking room, to supply iced water.



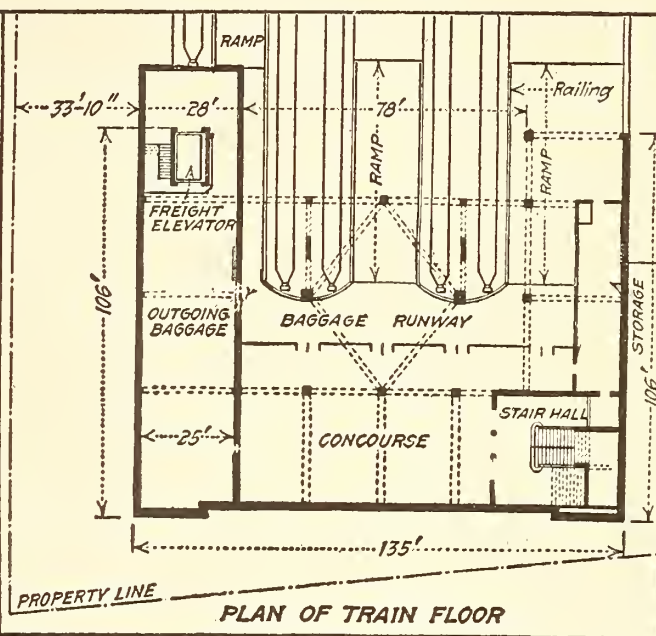
ST. MONIQUE STREET ELEVATION



LAGAUCHETIERE STREET ELEVATION



PLAN OF FIRST FLOOR



PLAN OF TRAIN FLOOR

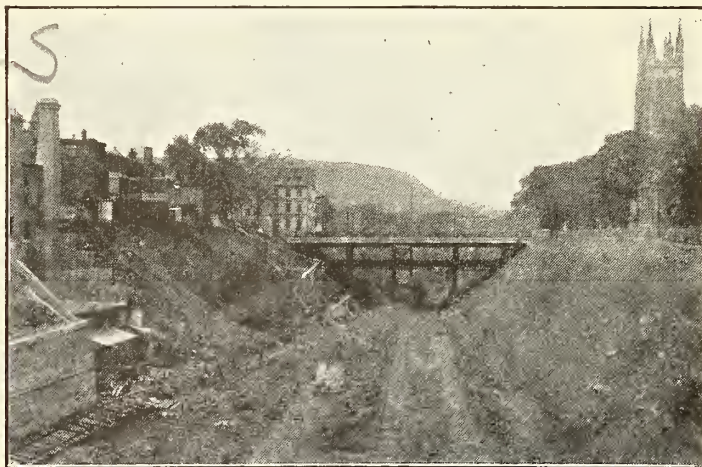
#### The Canadian Northern Ry.'s Temporary Station in Montreal.

Since the plan shown above, in the lower left hand corner of the group, was made, the space originally intended for a women's waiting room has been made into a men's smoking room, and the space originally intended for a men's smoking room has been made into a women's waiting room. The lavatory arrangements, as shown on the plan, have been reversed.

grilles. In the main waiting room the seats are of the latest model, placed back to back, with a radiator between each pair. This will give an efficient heating

immediately below, at the train level. There is a staircase in the incoming baggage room, which also leads down to the train level.

From the women's waiting room are doors leading to the entrance vestibule and to the staircase hall. This hall, at the right hand end of the entrance vestibule



#### The Canadian Northern Railway's temporary station in Montreal.

The left view shows the rear of the station, from Dorchester St. Bridge, the right view is looking towards Mount Royal tunnel portal, from the rear of the station.

system and at the same time all the radiators are concealed. Along the tops of the seats are lines of electric lights with reflectors.

At the left of the main waiting room is the incoming baggage room, with an

Opposite the incoming baggage room, at the right of the main waiting room, are the men's smoking room and the women's waiting room, with lavatories between. Both of these rooms have windows facing on St. Monique St. They are good sized

contains broad concrete stairs, leading to the train level, and a narrower staircase to the offices on the second floor. Descending the staircase, the passenger will arrive in the lower staircase hall, which in turn opens to the concourse. The con-



course contains approximately 3,500 sq. ft., and is separated from the train room by an iron and glass screen, immediately inside of which is the baggage runway, connecting to the outgoing baggage room at the left. The outgoing baggage room is immediately below the incoming baggage room on the first floor, and is of the same dimensions, and as previously stated, is connected with it by a staircase and

large freight elevator.

There are five tracks arranged in the present construction. From the baggage runway, ramps with a grade of 5% descend to the platform level.

To the right of the baggage runway are the machinery and storage rooms, and here are installed the apparatus for heating the water supply to the lavatories and cooling the drinking water. The

heating plant for the building is installed in a separate structure behind the outgoing baggage room.

Along the Lagauchetiere St. front, on the second floor level, is approximately 4,000 sq. ft. of office space, which is to be subdivided later when its uses are determined. On this floor are lavatories and other facilities required for use of the office staff.

## Passenger Car Cleaning on the Canadian Pacific Railway.

By E. Eley, Master Car Builder, Eastern Lines, C.P.R.

Cleaning passenger equipment cars is one of the operations all railways have to expend large amounts of money for yearly, and clean cars is one of the things the travelling public appreciate. Those of us who travel know this from the remarks we hear from passengers. Very few of them, however, know what a vast amount of labor must be spent to keep cars clean and in a sanitary condition.

In this paper I will endeavor to conduct them through a train just arriving from a five days trip across the continent. We will start at the rear end and walk through, noting its condition. If it is in the dry season and ties have been put in the track recently, we have dust covering everything, and it has got into the plush seat covering, carpets and bedding. Beside this, there is the usual amount of paper, orange peel, bottles, etc.

Before we can start our cleaning we find some of the cars are due to be fumigated, which is done once a month; upper berths have to be opened, and blankets, pillows, berth curtains and mattresses spread out so that the fumes will penetrate every part of the equipment, locker doors and lavatories must be opened and all windows and ventilators closed. For an ordinary fumigation, one sheet is used, saturated with formaldehyde and hung up in the centre of the car. The car is then closed up, locked and left for at least an hour and a half, after which it is opened and ventilated for the cleaners to go in. For a thorough fumigation, which is used in cases of actual infection, three sheets are used, saturated with formaldehyde, and hung up, one in each end, and one in the center of the car, and the car left closed at least three hours, after which it may be opened and ventilated.

From sleeping cars, carpets, bedding, seats and seat backs have to be removed from the car for cleaning and airing. To clean these, the following is the usual practice: Blankets and berth curtains are shaken, mattresses are beaten or blown with air, seats and backs are either blown with air or cleaned with vacuum. The carpet is first swept off and then blown with air. All this equipment is then laid on racks or trestles until the interior of the car is cleaned thoroughly and made ready to receive it again.

The interior of the car is cleaned from the headlining to the floor. First we have to get rid of the dust. Deck sash are opened and dust wiped out with a disinfectant solution in the water, dust is got out from between and above the window sash by hammering with the hand, and window sticks covered with a cloth. When we have got down all the dust we can, the floor is swept out. We start again at the headlining and wash it, including the deck sash down to the deck sash rail. All the woodwork below this has to be wiped down, and if necessary washed with castile soap and warm water, and finally the floor and steam pipes are washed with a disinfectant solution in the water; this

includes toilets under washstands, and lockers. Now it is ready to receive the bedding, etc. When this is stowed away, seats and backs are replaced. The woodwork is gone over and polished, sometimes using a renovator; nickel and mirrors are all cleaned and polished, the carpet is laid, and the final finishing touches are given to the car. Passage ways and vestibule floors are scrubbed and a canvas strip laid down and left there until the train is ready to back into the station. This work takes about 35 hours, and with the exception of washing the headlining and polishing the woodwork, where a renovator is used, is performed by two men and a woman, and costs about \$15.50 a car.

This work is performed on observation, sleeping and tourist cars, once in seven days, or in the case of transcontinental trains they are stripped at Montreal or Toronto and Vancouver, which is once in six days. On shorter runs the cleaning given this equipment between strippings is an ordinary cleaning, consisting of sweeping carpets, dusting and wiping woodwork, cleaning windows, mirrors, nickel, etc., and finally vacuuming the cushions, backs and carpet, scrubbing floors in passage ways and vestibules.

We will now take the day cars. We do not remove seats or seat backs from them, windows are opened and the car is swept out then dusted down, headlining washed if necessary, floor and steam pipes scrubbed with a disinfectant solution, and, if necessary, all, or part of the interior, washed down, windows, mirrors and nickel cleaned and polished, seats and backs in the first class are vacuumed and aisle strip blown with air, and laid, and the car is ready for service. If cars are cleaned in the morning and do not leave until night, they quite frequently have to be dusted again just prior to departure.

In the baggage and express cars, the fish racks are lifted and pits swept out, and then rack and pits are scrubbed with clean water without disinfectant, then pits and racks are sprinkled with lime and racks replaced. As necessity requires, these cars are washed down from roof to floor, as being on the front end of trains they get very dirty from smoke from the locomotive. The reason we do not use disinfectant in the water for scrubbing baggage cars is, it would taint some of the commodities carried in them.

Mail cars are cleaned in the same way, except that the floors are scrubbed with disinfectant in the water. This completes the inside cleaning. The outside is cleaned by washing or wiping, according to weather conditions, but the best results are obtained by wiping when it is possible to do so. The windows are occasionally gone over with a little muriatic acid in water whenever necessary to cut the dirt or scum which accumulates, and then washed with clear water. vestibules and steps are wiped down and brass work polished. This is an ordinary cleaning

which they get every time they are in the terminal, but even with this cleaning, in two or three months they get dirty, to such an extent that the numbers cannot be seen, then they are given a terminal cleaning, which consists of scrubbing them with some approved cleaner and thoroughly washing it off, and the car looks as though it had only just come out of the shops.

The people who perform this work are composed of all nationalities, some of them make pretty good car cleaners and others never will. This, then, is the element with which we have to get this work done, and you can readily see it requires the closest supervision to get it done properly. I once saw a woman who was on the terminal cleaning, and using our standard cleaner, put her brush into some fine sand and start to scrub some spots on the outside of the car to remove some excreta which had become dried on so hard that it was almost impossible to remove it without taking off the varnish. She was a foreigner and no doubt in her own home in the country she came from the practice was to use sand and water to scrub the floors. You can readily understand what it means to educate such people and make car cleaners of them.

To supervise work of this nature requires men of energy and patience, and they, like people working under them, require special training, otherwise the class of cleaning deteriorates, then it becomes necessary to make a crusade on better cleaning, and some of our foremen will tell you this occurs quite frequently. It has always been our desire to give our patrons clean and sanitary cars to travel in, and few of them realize the amount of labor which is expended on the equipment for their comfort.

The foregoing paper was read before the Canadian Railway Club in Montreal.

**Steel Rail Deliveries.**—We were officially advised Sept. 9 that the Dominion Iron & Steel Co., Sydney, N.S., had rolled 72,708 tons of steel rails out of the 100,000 tons ordered by the Dominion Government and that 62,973 tons had been shipped to railways as below:

	Tons.	Lbs.
Canadian Govt. Rys. ....	11,280	600
Canadian Northern Ry. ....	17,349	1,690
Canadian Pacific Ry. ....	23,679	540
Grand Trunk Ry. ....	10,314	840
Toronto, Hamilton & Buffalo Ry.	351	1,910

The Dominion Transportation Co. has been incorporated under the British Columbia Companies Act, with authorized capital of \$10,000 and office at Victoria, to carry on business as general carriers, railway and forwarding agents and warehousemen, and to operate touring and sight-seeing cars and other similar public conveyances.

The Algoma Central & Hudson Bay Ry. announced Sept. 1, that with the exception of two and a half townships, all its land grants will be thrown open for prospecting purposes for two years.



## Maintenance of Way Flagging Rules for Impassable Track.

The Canadian Railway War Board applied to the Board of Railway Commissioners recently for an order to amend general order 188, re uniform maintenance of way flagging rules for impassable track, so as to provide for the use of the Brennan signal, or a device of a similar character, in lieu of manual flagging as required by general order 188. The board passed general order 248, Aug. 19, amending general order 188 in several particulars. As amended it now reads as follows:

1. Before undertaking any work which will render the main track impassable, or if rendered impassable from any cause or defect, trackmen, bridgemen, or other employees of the company shall protect the same as follows:

2. (a). On double track; (b) on three or more tracks; (c) in mountain territory; and (d) on all lines with frequent or fast train service—

Send out a flagman in each direction with stop signals, at least 1,500 ft. in daytime, if there is no down grade toward the obstruction within one mile, and there is a clear view of 6,000 ft. from an approaching train; 3,600 ft. at other times and places, if there is no down grade toward the obstruction within one mile; 5,400 ft. if there is a down grade toward the obstruction within one mile. The flagman must, after going the required distance from the obstruction to insure full protection, take up a position where there will be an unobstructed view of him from an approaching train of, if possible, 1,500 ft., first placing two torpedoes on the rail (not more than 200 nor less than 100 ft. apart), on the same side as the engineer of an approaching train, 300 ft. beyond such position. The flagman must display a red flag by day and a red light by night, and remain in such position until recalled or relieved.

3. On other lines—

(a) By day place a red flag and, in addition, by night a red light, on the same side of the track as the engineer of an approaching train, at a point 600 ft. from the defective or working point, with two torpedoes placed on the rail opposite each other so as to cause but one explosion, 150 ft. in advance of the red signal, and provide further protection as follows:

(b) By day place a red flag, and, in addition, by night, a red light, on the same side of the track as the engineer of an approaching train so that it will be clearly in his view, at least 3,600 ft. from the defective or working point, if there is no down grade toward the obstruction; 5,400 ft. if there is a down grade within one mile of the obstruction, or as much farther as may be necessary to ensure full protection.

(c) Place two torpedoes (not more than 200 nor less than 100 ft. apart) on the rail on the same side as the engineer of an approaching train, 300 ft. in advance of the red signal.

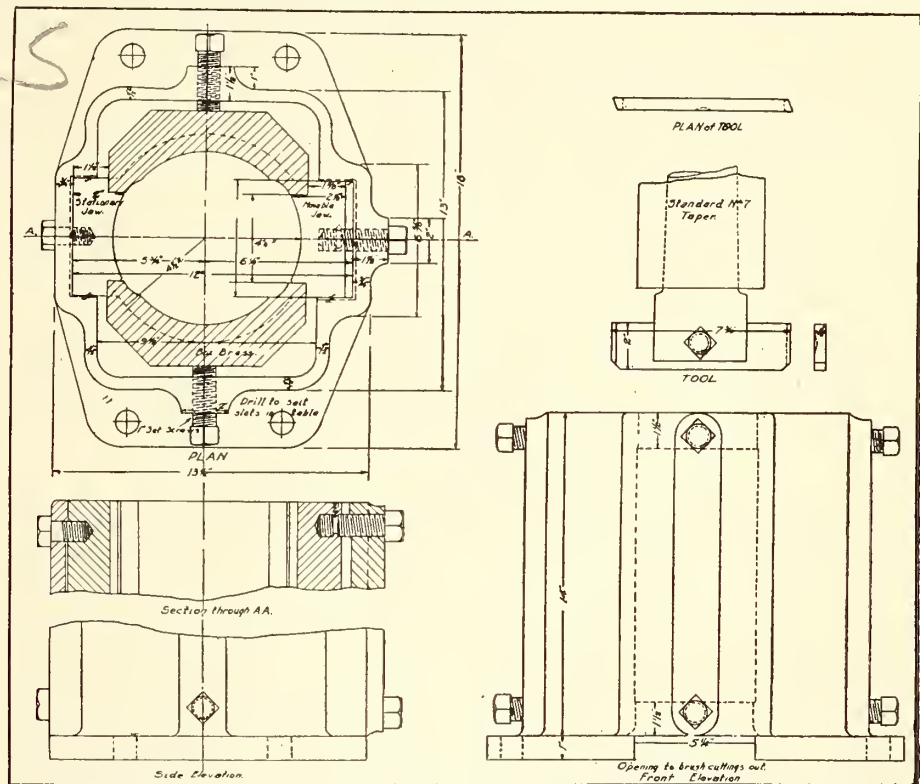
(d) Between sunset and sunrise, and during stormy, foggy, or smoky weather conditions, flagmen must be placed instead of the outer signals referred to in clause (b).

4. Trains stopped by flagman, as per rule 2 and rule 3 (d), shall be governed by his instructions and proceed to the working point or working point signal, as the case may be, and there be governed by signal or instructions of the foreman in charge.

5. Trains stopped by red signal, as per

rule 3 (c), shall replace the torpedoes exploded and proceed to the working point signal, and there be governed by signal or instructions of the foreman in charge, unless in the meantime stop signal has been removed.

6. In the event of train order protection being provided, the defective or working point must be marked by signals placed in both directions as follows: Yellow flags by day and in addition yellow lights by night, 3,600 ft. from the defective or working point; red flags by day, and in addition red lights by night, 600 ft. from the defective or working point, on the same side of the track as the engineer of an approaching train; except on double track, where trains run to the left, in which case signals shall be placed to the left hand side as seen by an engineer of



### Jig for holding trailer truck brasses for boring.

The illustration above shows a jig used at the C.P.R. Shops, Ogden, Alta., for boring trailer truck brasses. The face plate of the duplex rod boring machine is drilled to take the cap studs for holding the jig.

an approaching train, and there is a clear view of at least 1,200 ft.

7. When weather or other conditions obscure day signals, night signals must be used in addition.

8. "Frequent service" shall mean nine or more trains a day and "fast train service" shall mean a service at a speed of 35 miles or more an hour.

9. That the Brennan signal device, as approved by the board, or a signal of an equally serviceable type attached to the base of the rail, to be approved by the board, be used to display the signals directed to be provided under rules 3 (b) and 8 (yellow signal) of this order and rule 35 (yellow signal) of the Uniform Code of Operating Rules.

10. Flagmen must each be equipped for day time with a red flag and 4 torpedoes, and for night time, and when weather or other conditions obscure day signals, with a red light, a white light, 4 torpedoes, 3

red fusees, and a supply of matches.

The foregoing rules be printed in railway companies working time tables for the guidance of all employees. Subdivisions to be named, setting out which of the rules are applicable to each.

General orders 161, Feb. 23, 1916, and 216, Jan. 24, 1918, are rescinded.

**Increased Locomotive Production.**—At a meeting of representative locomotive builders in Washington, D.C., recently, with representatives of the War Industries Board the Railroad Administration, and government departments, one of the heaviest problems connected with the direction of war work—an adequate supply of railway locomotives—was solved. Plans were worked out whereby the output of the U. S. locomotive manufacturing plants will be doubled, the increase being from more than 3,000 on a pre-war basis to more than 6,000 completed locomotives. An equitable distribution of the output to meet the military needs in France and the



# Canadian Northern Railway's Bridge over the St. Maurice River at Grand Mere.

A new bridge, replacing the old cantilever, has been completed recently on the Canadian Northern Ry. Eastern Lines, over the St. Maurice River, about a mile east of Grand Mere, Que. The bridge, as seen in the plan, fig. II., consists of two 100 ft. deck plate girder spans, two 115 ft. deck truss spans, one 250 ft. deck truss span and one 38 ft. deck plate girder span. The old cantilever bridge, shown as fig. I, was built by the Dominion Bridge Co., in 1895, and was flanked on the western side by a 100 ft. deck lattice span, the remaining portions of the depression being served by wooden trestles. In 1910 the western wooden trestle was burned and the lattice span wrecked by a train, the bracing of the west anchor arm of the cantilever being at the same time slightly damaged. To take the place of the destroyed trestle and lattice span, a

erection stresses were nowhere large enough to affect the sections of the truss members, so that no extra metal was necessitated by erecting in this manner. The west truss span was erected first. A timber bent was built at the center of this span and the truss was assembled by means of a Bay City derrick car working from the old bridge. A 12-ton stiffleg derrick was then set up on the span, on trucks which ran on the top chords, and with this derrick the west half of the channel span was erected, cantilevering out from pier 3. The 115 ft. span was used as an anchor arm and additional counterweight over and above the weight of the steel was secured by anchoring the free end of this truss span to pier 4, using, for this purpose, two 2 in. dia. bolts 17 ft. 2 in. long, at each corner. The east half of the bridge was then erected in

lowered still more, the diagonal connection and top chord splices were bolted. As soon as the top chords touched at the center the loosening of the anchorage was stopped and the span was left partially suspended until all the splice rivets were driven in the bottom chord. This method insured tight joints in the bottom chord splices and secured a very satisfactory camber. The ends of the anchor spans were then jacked up and the erection links removed. The top chords, being now in compression, were riveted under the best possible condition. All the end bottom struts were designed to permit of jacking, so that the pier members may be repaired or renewed at any time. The deck steel was put in the anchor spans as they were erected, but the stringers and stringer bracing of the channel span were omitted until the anchor spans were jacked up

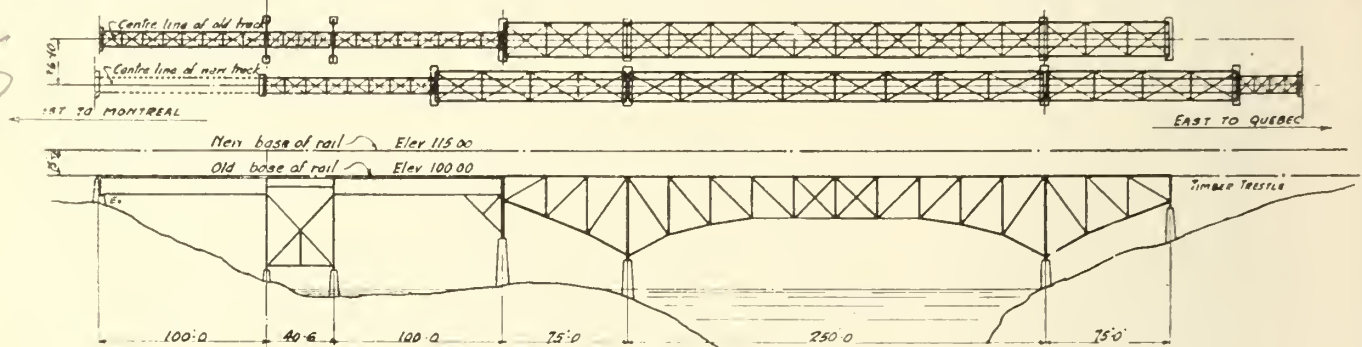


FIG I ELEVATION OF OLD BRIDGE

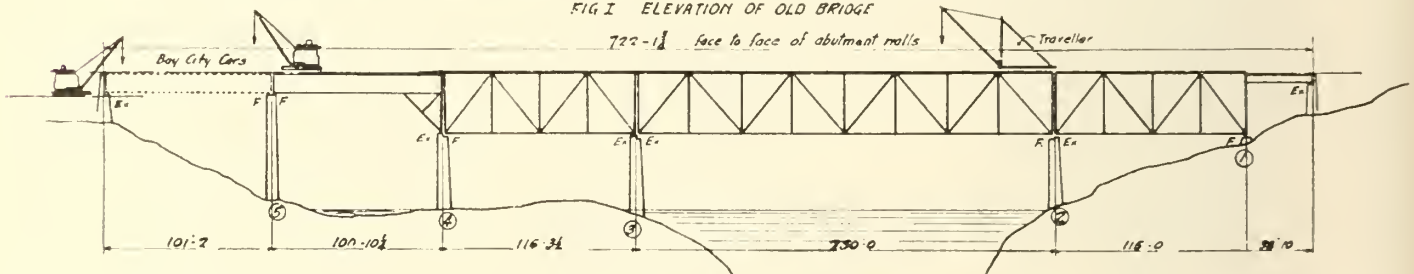


FIG II ELEVATION OF NEW BRIDGE.

Canadian Northern Railway's Old and New Bridges Over St. Maurice River at Grand Mere, Que.

steel trestle, consisting of 2 bents and 3 deck plate girder spans, was constructed by the Dominion Bridge Co. In 1915 the sway and stringer bracing of the main cantilever were reinforced and in this condition the old structure served to carry the traffic until the summer of 1918.

In order to reduce the excessive grade at this point the track has been raised 15 ft., which makes the distance from base of rail to ground line for the intermediate piers about 70 ft., and in order to minimize the height of the piers the trusses were made deeper than would otherwise have been necessary. The truss spans only are new this year, the eight-year-old girders from the trestle mentioned above being used on new piers. The side truss span has 4 panels at 28 ft.—1½ in., and is 35 ft.—9½ in. deep, while the channel span has 8 panels at 30 ft. 9 in. and is 36 ft. deep to the center of gravity of chords. The chords and diagonals of the trusses are built up box sections, while the posts are I sections, composed of a web plate and four angles. The pier members are steel castings, with pin bearing between truss and shoes. There are the usual two lines of plate stringers heading into the floorbeams.

The piers being about 50 ft. high and the river very deep, erection by the cantilever method was naturally adopted. The

precisely the same manner.

The cantilever portion was connected to the anchor span of the top chords by four 12 x 1 in. plate links on 5 in. dia. pins, and at the bottom chords were held apart by cast steel rocker blocks. These links were made ¼ in. short of the normal length, in order that the ends of the cantilevers at the center of the channel would be elevated above normal to facilitate making the center connection. The expansion pier members were arranged to accommodate the expansion of the bottom chords during the change from the cantilever to the simple span conditions. To permit of a final adjustment in case the chords did not meet at the center of the channel span, both pier members on pier 3 were on rollers, on which the west half, both cantilever and anchor span, could be moved a few inches forward or backward as might be necessary. However, no such adjustment was necessary, as when the last section of bottom chord was lowered into place it fitted perfectly and the bolts connecting it to the center bottom lateral plate were put in place without difficulty. The anchorages were then gradually loosened, allowing the middle of the channel span to descend, and as the holes in the gusset plate came to a match with those in the web of the bottom chord the bolts were entered, and, the span being

and the cantilever condition removed, thereby minimizing the erection stresses. In the meantime, these stringers were placed on the ends of the anchor spans, giving additional counterweight, as it was considered advisable to keep the strain on the erection anchors in the concrete piers as low as possible.

After the trusses were completed the 40 ft. deck plate girder span was removed from the trestle posts, fitted with new pier members and placed in position at the east end of the bridge. Traffic was carried across the opening thus created in the old structure by 3 beam spans supported on a timber tower, which was built before the girders were removed. Moving the two 100 ft. girder spans was accomplished on Sunday, April 14, trains being run over the old bridge on the Saturday and over the new one on the Monday. These spans, being too heavy to be handled as a whole, were cut apart, and the separate girders removed by means of two 30-ton derrick cars, which have a capacity of 16 tons at 25 ft. radius. One car worked on the west end of the old bridge, and the other on the new truss spans. The girders weighed 31 tons each and special care had to be taken in hitching to these so that the cars would not be overloaded. The first steel was erected on Feb. 1, the channel span was connected



at the center on April 2, and riveting of the trusses was completed about June 3. The steel on the two 115 ft. trusses weighed 616,650 lb., in the 250 ft. span 936,000 lb., and the total steel in the structure, including girder spans, about 1,890,000 lb. The superstructure was designed and built by the Dominion Bridge Co.,

the writer having special charge of the design and the development of the erection scheme. The whole work was subject to the approval of W. P. Chapman, Engineer of Bridges, C.N.R., and C. H. Connell, Engineer, Quebec Division, C.N.R.—By H. M. White, of Dominion Bridge Co., in Contract Record.

## Birthdays of Transportation Men in October.

Many happy returns of the day to:

J. L. Abell, Chief Dispatcher, Sudbury Division, Algoma District, C.P.R., Sudbury, Ont., born at Morganfield, Ky., Oct. 3, 1884.

E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., Montreal, born at Thorold, Ont., Oct. 16, 1877.

Major Graham A. Bell, C.M.G., acting Deputy Minister of Railways and Canals, Ottawa, Ont., born at Perth, Ont., Oct. 13, 1874.

L. S. Brown, General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., born at Nelson, N.B., Oct. 19, 1864.

F. F. Busteed, formerly Engineer in charge of C.P.R. revision and second tracking, west of Calgary, Kamloops, B.C., born at Battery Point, Que., Oct. 10, 1858.

J. M. S. Carroll, Sales Manager, Canadian Consolidated Rubber Co., Montreal, born at Ballarat, Australia, Oct. 22, 1875.

C. E. Cartwright, ex-Division Engineer, C.P.R., Vancouver, B.C., born at Toronto, Oct. 13, 1864.

A. F. Dion, Traffic Manager, Quebec Harbor Commission, Quebec, born at L'Islet, Que., Oct. 1, 1871.

J. W. Doyle, General Manager, Cape Breton Ry., St. Peters, N.S., born at Summerside, P.E.I., Oct. 12, 1872.

L. V. Druce, Division Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., born at London, Eng., Oct. 20, 1873.

R. G. Edwards, Assistant Superintendent, Trenton Division, Ontario District, C.P.R., Havelock, Ont., born at Maitland, Ont., Oct. 10, 1883.

C. E. Friend, General Auditor, Canadian Northern Ry., Winnipeg, born at Brighton, Eng., Oct. 12, 1871.

W. P. Fitzsimmons, Commissioner of Industries, G.T.R., Montreal, born at Detroit, Mich., Oct. 27, 1868.

C. N. Ham, Secretary, Express Traffic Association of Canada, Montreal, born at Winnipeg, Oct. 21, 1884.

G. Hodge, Assistant to General Manager, C.P.R., Montreal, born there, Oct. 2, 1874.

J. H. Hughes, Assistant Superintendent, Ottawa Division, Quebec District, C.P.R., Montreal, born at Charlottetown, P.E.I., Oct. 7, 1865.

H. Irwin, Consulting Right of Way and Lease Agent, C.P.R., Montreal, born at Newgrove, County Down, Ireland, Oct. 27, 1847.

W. B. Johnson, Master Mechanic, District 6, Intercolonial Division, Canadian Government Railways, Truro, N.S., born there, Oct. 8, 1872.

K. deS. Joseph, Assistant Trainmaster, C.P.R., Sudbury, Ont., born at Quebec, Que., Oct. 6, 1892.

W. B. Lanigan, Freight Traffic Manager, C.P.R., Montreal, born at Three Rivers, Que., Oct. 12, 1861.

O. M. Lavoie, Superintendent of Car Service, Eastern Lines, C.P.R., Montreal, born at St. Cyril de Wendover, Que., Oct. 16, 1884.

F. McDowell, Storekeeper, Canadian Northern Ry., Winnipeg, born there, Oct. 22, 1883.

A. E. McMaster, Secretary and Treasurer, Port Arthur Shipbuilding Co., Ltd., Port Arthur, Ont., born at Perth, Ont., Oct. 22, 1885.

Sir William Mackenzie, ex-President, Canadian Northern Ry., Toronto, born at Kirkfield, Ont., Oct. 30, 1849.

C. Malcolm, chief clerk, Auditor of Stores and Mechanical Accounts, Alberta Division, C.P.R., Calgary, Alta., born at Tatamagouche, N.S., Oct. 18, 1881.

R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., born in Montgomeryshire, Wales, Oct. 9, 1850.

C. R. Moore, Assistant to Vice President in charge of operation, G.T.R., Montreal, born at Hamilton, Ont., Oct. 12, 1867.

Hugh Paton, President, Shedden Forwarding Co., Montreal, born at Johnstone, Renfrew, Scotland, Oct. 5, 1852.

J. W. Porter, Chief Engineer, Hudson Bay Ry., Pas, Man., born at Aberdeen, Scotland, Oct. 15, 1877.

T. F. Rahilly, Superintendent, Algoma Eastern Ry., Sudbury, Ont., born at Diorite, Mich., Oct. 6, 1892.

H. G. Reid, Superintendent of Rolling Stock, Western Lines, Canadian Government Railways, Transcona, Man., born at Pembroke, Ont., Oct. 27, 1863.

W. S. Rollo, agent, G.T.R., St. Johns, Que., born at Dundee, Scotland, Oct. 8, 1852.

O. J. Rowe, Local Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., born at Binghamton, N.Y., Oct. 11, 1879.

J. K. Savage, Superintendent, Smiths Falls Division Quebec District, C.P.R., Smiths Falls, Ont., born at Forreston, Ill., Oct. 5, 1876.

Lord Shaughnessy, K.C.V.O., President and Chairman, C.P.R., Montreal, born at Milwaukee, Wis., Oct. 6, 1853.

T. Duff Smith, Fuel Agent, Grand Trunk Pacific Ry., Winnipeg, Man., born at Barking, Essex, Eng., Oct. 2, 1868.

E. Sterling, Assistant Superintendent, Interurban Lines, British Columbia Electric Ry., New Westminster, born at Thornbury, Ont., Oct. 3, 1875.

K. Stewart, Assistant Superintendent, District 4, Intercolonial Division, Canadian Government Railways, New Glasgow, N.S., born at Little River, N.S., Oct. 21, 1868.

C. E. Stockdill, Assistant to Vice President and General Manager, Western Lines, C.P.R., Winnipeg, born at London, Ont., Oct. 25, 1881.

D. A. Story, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B., born at Halifax, N.S., Oct. 26, 1853.

E. N. Todd, General Freight Agent, Eastern Lines, C.P.R., Montreal, born at Huntingdon, Que., Oct. 17, 1879.

J. H. Valleau, Secretary-Treasurer, Thousand Islands Ry. and Oshawa Ry., Gananoque, Ont., born at Selby, Ont., Oct. 14, 1889.

J. A. Vallerand, Superintendent and General Freight and Passenger Agent, Roberval-Saguenay Ry., Chicoutimi, Que., born at Quebec, Que., Oct. 21, 1878.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Sept. 6, 1918.		Wheat.	Oats.	Barley.	Flax.	Totals.
Port William—		Bush.	Bush.	Bush.	Bush.	Bush.
C.P.R. ....	65,363	69,810	18,317	6,214	159,704	
Consolidated Elevator Co. ....	22,269	91,006	12,510	12,963	94,210	
Empire Elevator Co. ....	26,028	87,230	15,300	2,643	79,145	
Ogilvie Flour Mills Co. ....	56,166	82,222	31,199	.....	169,587	
Western Terminal Elevator Co. ....	41,016	70,804	10,050	11,208	51,046	
G.T. Pacific ....	1,239	271,533	34,144	5,904	312,820	
Grain Growers' Grain Co. ....	55,059	436,851	51,834	.....	433,626	
Port William Elevator Co. ....	45,881	280,582	13,116	4,793	252,610	
Eastern Terminal Elevator Co. ....	12,345	30,760	9,605	.....	28,220	
Northwestern Elevator Co. ....	8,123	6,264	811	.....	1,048	
Port Arthur—						
Port Arthur Elevator Co. ....	16,728	522,267	94,662	17,545	617,746	
D. Horn & Co. ....		Closed for summer.				
Canadian Government Elevator ....	37,312	201,163	11,391	36,178	211,420	
Thunder Bay ....	1,893	294,305	38,065	4,464	334,941	
Davidson & Smith ....	5,198	150,159	72,498	.....	227,855	
Saskatchewan Co-op. Elevator Co. ....	2,292	120,946	18,183	7,510	148,931	
Total Terminal Elevators ...		136,396	2,715,802	431,685	109,422	3,120,513
Saskatoon Can. Govt. Elevator ....		6,873	62,709	2,952	1,198	73,732
Moose Jaw Can. Govt. Elevator ....		Not reported.				
Calgary Can. Govt. Elevator ....	3,627	95,981	12,578	83	112,269	
Vancouver Can. Govt. Elevator ....	48,762	4,282	.....	.....	53,044	
Total Interior Terminal Elevators..		59,262	162,972	15,530	1,281	239,045
Midland—						
Aberdeen Elevator Co. ....	5,172	14,507	.....	.....	19,679	
Midland Elevator Co. ....	.....	8,350	438	.....	8,788	
Tiffin, G.T.P. ....	6,993	3,050	.....	.....	10,043	
Port McNicol ....	29,137	8,810	.....	.....	37,947	
Goderich—						
Elevator & Transit Co. ....	79,829	517,189	.....	.....	597,018	
Western Canada Flour Mills, Ltd. ....	.....	26,568	.....	.....	26,568	
Kingston—						
Montreal Transportation Co. ....		Not reported.				
Commercial Elevator Co. ....	30,212	33,095	248	.....	63,555	
Prescott-Montreal Transportation Co., Ltd. ....		.....	.....	.....	.....	
Montreal						
Harbor Commissioners No. 1 ....	154,534	580,785	171,070	.....	906,389	
Harbor Commissioners No. 2 ....	40,380	183,964	89,246	.....	313,590	
Montreal Warehousing Co. ....	45,088	31,997	118,517	.....	195,602	
Quebec Harbor Commissioners ....	81,394	397,130	48,556	26,486	553,566	
West St. John, N.B. ....	99,066	.....	.....	.....	99,066	
Total Public Elevators .....		571,805	1,805,446	428,075	26,486	2,831,811
Total quantity in store .....		494,671	4,684,219	875,290	137,189	6,191,369
† Wheat overshipped.		*Corn.				



## Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper has a continuous record of the Board's proceedings. No other paper has done this.

General order 247. Aug. 6.—Approving standard stop signal at railway grade crossings protected by watchmen.

General order 248. Aug. 19.—Amending rules approved by general order 188, Apr. 23, 1917, re uniform maintenance of way flagging rules for impassable tracks. This order is given in full on another page.

General order 249. Aug. 31.—Approving standard freight tariffs of maximum mileage tolls of 38 railways filed on basis prescribed by order in council 1863, July 27, re increased freight rates.

27546. Aug. 2.—Ordering C.P.R. to re-establish local service in effect between Tweed and Toronto prior to Jan., 1918, between Apr. 15 and Dec. 1 each year.

27547. Aug. 12.—Ordering Grand Trunk Pacific Ry. to build farm crossing for Geo. Robinson, Leaman, Alta.

27548. Aug. 12.—Authorizing C.P.R. to build two spurs for Spanish Mills Co., Lewis Tp., Algoma District, Ont.

27549. Aug. 13.—Ordering Canadian Northern Ry. to install one pen stock yard at Fiske, Sask., to be completed by June 1, 1919.

27550. Aug. 13.—Declaring on complaint of David Spencer, Ltd., Vancouver, B.C., that proper rates on shipments of hats and caps other than millinery taking 1st class rating in current Canadian Freight Classification, were appearing in item 240, Canadian Freight Association's west-bound tariff 1, effective Sept. 20, 1916.

27551. Aug. 14.—Dismissing application of Colchester South Tp., Ont., to make highway crossing over Pere Marquette Ry. at Oak St., Harrow, Ont.

27552. Aug. 13.—Approving agreement between Bell Telephone Co. and Goulais Bay Telephone Club, Algoma District, Ont.

27553. Aug. 14.—Authorizing Toronto, Hamilton & Buffalo Ry. to build branch for Ford-Smith Machine Co., Hamilton, Ont.

27554. Aug. 15.—Authorizing New York Central Rd. to extend passing siding at Beauharnois, Que., about 1,500 ft. north of Beauce highway crossing.

27555. Aug. 13.—Approving agreement between Bell Telephone Co. and Bowesville Telephone Co., Carleton County, Ont.

27556. Aug. 14.—Relieving Canadian Northern Ry. from erecting fences, gates and cattleguards at points on its Blue River and Lucerne Subdivisions in British Columbia and Alberta.

27557. Aug. 14.—Dismissing Beverly Coal Co.'s application for running rights over portion of spur between Grand Trunk Pacific Ry. and Humblerstone Coal Co.'s line to proposed Beverly Mine spur, Alta.

27558. Aug. 13.—Ordering Toronto, Hamilton & Buffalo Ry. to stop train 71 at Smithville, Ont., for milk shipments.

27559. Aug. 14.—Proportioning cost of installing transfer track at Yorkton, Sask., between the C.P.R. and Canadian Northern Saskatchewan Ry.

27560. Aug. 13.—Ordering Canadian Northern Ry. to build standard portable station at Fallowfield, Ont., to be completed Sept. 30.

27561. Aug. 19.—Authorizing Canadian Northern Ry. to build spur for Imperial Oil, Ltd., Vermilion, Alta., and to cross Railway St.

27562. Aug. 16.—Authorizing Canadian Northern Ry. to build spur for Canadian Consolidated Rubber Co., St. Jerome, Que.

27563. Aug. 19.—Authorizing G.T.R. to build spur for Dupont Fabrikoid Co., New Toronto, Ont.

27564. Aug. 19.—Approving agreement between Bell Telephone Co. and North Gosfield Tp., Ont.

27565. Aug. 16.—Authorizing Saskatchewan Government, on behalf of Mervin Rural Municipality, Sask., to make highway crossing through Canadian Northern Ry. station grounds at Turtleford, Sask.

27566. Aug. 17.—Authorizing G.T.R. to build spur for Woods Mfg. Co., east of Logan Ave., Toronto.

27567. Aug. 16.—Approving Canadian Northern Quebec Ry. plan of proposed bridge reconstruction over Riviere a Pierre, Lake St. John Division, 57 miles from Quebec.

27568. Aug. 16.—Dismissing complaint of Minnesota & Ontario Power Co., International Falls, Minn., against increased rates on pulpwood from Canadian Northern Ry. station to International Falls, Minn.

27569. Aug. 21.—Authorizing Canadian Northern Ry. to open for traffic its branch to Cardiff Mines, Alta.; trains not to exceed 15 miles an hour; fencing to be completed by Nov. 1.

27570. Aug. 21.—Authorizing G.T.R. to build three spurs for Motor Trucks, Ltd., Brantford, Ont.

27571. Aug. 21.—Relieving C.P.R. from providing further protection at Lachardies Crossing, near Kirks Ferry, Que.

27572. Aug. 23.—Extending to Apr. 10, 1919, time within which overhead bridge may be completed across C.P.R. on Hamilton St., Regina, Sask.

27573. Aug. 22.—Authorizing Canadian Northern Ry. to rebuild bridge over Riviere a Pierre, Lake St. John Division, 59.5 miles from Quebec.

27574. Aug. 22.—Authorizing Canadian Northern Ry. to rebuild bridge over Miquick River, Lake St. John Division, 75 miles from Quebec.

27575. Aug. 21.—Authorizing G.T.R. to build extension of spur for Battle Creek Toasted Corn Flake Co., London, Ont.

27576. Aug. 21.—Authorizing C.P.R. to build extra track across road allowance between southeast  $\frac{1}{4}$  Sec. 4 and southwest  $\frac{1}{4}$  Sec. 3, Tp. 23, Range 14, west 2nd meridian, Sask.

27577. Aug. 21.—Authorizing G.T.R. to rebuild bridge carrying Birchmount Ave., Scarborough Tp., York County, Ont., over its main line at mileage 326.5 from Montreal.

27578. Aug. 22.—Relieving Canadian Northern Ry. from erecting fences, gates and cattleguards at about 84 points, and temporarily relieving C.N.R. from erecting fences, gates and cattleguards at about 44 other points on its Kamloops Subdivision until land in the vicinity becomes settled or improved.

27579. Aug. 26.—Authorizing Point Grey Municipality, B.C., to make highway crossing over Vancouver & Lulu Island Ry.

27580. Aug. 23.—Authorizing C.P.R. to build spur for Rob Roy Mills, Ltd., Durham, Ont.

27581. Aug. 23.—Authorizing British Columbia Public Works Department to make highway crossing at grade over C.P.R. near Tappen, B.C.

27582. Aug. 26.—Dismissing application of New Minas Fruit Co., White Rock, N.S., to continue service on applicant's siding without charge in excess of regular freight rate.

27583. Aug. 21.—Ordering Michigan Central Rd. to divert North Talbot Road, Maidstone Tp., Ont., to Naylor Side Road, north of its tracks and to install two automatic bells.

27584. Aug. 24.—Approving clearances at C.P.R. sidings serving Canadian General Electric Co., Peterborough, Ont.

27585. Aug. 26.—Approving plans of C.P.R. and Grand Trunk Pacific Ry. interchange track at Forrest, Man.

27586. Aug. 30.—Authorizing Canadian Northern Ry. to rebuild bridge over Batiscan River at Beaudet, Que.

27587. Aug. 30.—Ordering Grand Trunk Pacific Ry. to make highway crossing at Telkwa, B.C., 90 ft. east of present crossing.

27588. Aug. 13.—Approving location and plans of G.T.R. station and facilities at Glen Robert, Ont.

27589. Aug. 22.—Authorizing Cleveland Municipality, Ont., to close two highway crossings over G.T.R. near Richmond station.

27590. Aug. 23.—Approving plan of half interlocking plant at crossing of C.P.R. and St. John Ry., on Main St., Fairville, N.B.

27591. Aug. 21.—Amending order 27530, Aug. 2, re C.P.R. and Canadian Northern Ry. train connections at Montfort Jct., Que.

27592. Aug. 26.—Amending order 26627, Oct. 10, 1917, re C.P.R. train service at Minnitaki, Ont.

27593. Aug. 21.—Authorizing Canadian Northern Ry. to rebuild bridge over Batiscan River Falls, 110 miles from Quebec.

27594. Aug. 20.—Authorizing C.P.R. to build spur for Albert Kerr Co., York Tp., Ont.

27595. Aug. 31.—Amending order 27523, Aug. 7, re G.T.R. spur for W. Harris & Co., Toronto.

27596. Sept. 3.—Authorizing Saskatchewan Highways Department, on behalf of Blaine Lake rural municipality 434, to make highway crossing over Canadian Northern Ry., north of n.e.  $\frac{1}{4}$  Sec. 16, Tp. 45, Range 6, west 3rd meridian.

27597 to 27603. Sept. 3.—Approving Canadian Northern Ry. revised location at 7 points in Alberta.

27604, 27605. Sept. 3.—Approving Canadian Northern Ry. revised location at 2 points in Alberta.

27606, Sept. 3.—Authorizing Saskatchewan Highways Department, on behalf of Meota rural municipality no. 468, to make crossing over Canadian Northern Ry. north of Sec. 5, Tp. 47, Range 17, west 3rd meridian.

27607. Aug. 31.—Approving plan, dated Toronto, Aug. 16, showing proposed repairs to Canadian Northern Quebec Ry.'s Batiscan River Bridge, second pier from west end, at mileage 65.8, Joliette Subdivision, Que.

27608. Aug. 26.—Ordering Dominion Atlantic Ry. to build siding for Wolfville Fruit Co., Wolfville, N.S., at no greater cost to applicant than it would have to pay for siding accommodation had D.A.R. site been used.

27609. Aug. 30.—Approving revised plans, dated Apr. 2, showing electrification of Sec. 1, Mount Royal Tunnel & Terminal Co.'s railway from La-gauchetiere St. to east portal of tunnel.

27610. Sept. 3.—Extending to Oct. 1 time within which C.P.R. shall build two-pen stock yard at Cairns, Alta.

27611. Sept. 4.—Approving Canadian Northern Western Ry. revised location in n. w.  $\frac{1}{4}$  Sec. 7, Tp. 57, Range 7, west 5th meridian, Alta.

27612 to 27615. Approving Canadian Northern Ry. revised location at 5 points in Alberta.

27616. Aug. 22.—Ordering C.P.R. to install gates at Cote de Liesse Road, Dorval, Que., to be operated from the central tower by day and night watchmen; construction to be paid—20% by rail-

way grade crossing fund, 35% of balance by Dorval, 15% by Parish de la Presentation de la Ste. Vierge, and remainder by C.P.R.; maintenance to be paid, 50% by C.P.R., 35% by Dorval, and 15% by the parish; gates be installed within 30 days from date.

27617. Sept. 4.—Authorizing London & Port Stanley Ry. to build sidewalk along right of way, from Terrace St., north along east side of track, and across Thames River; thence west, under track and north, on west side of track to Trafalgar St., London, Ont.

27618. Sept. 4.—Amending order 27464, July 23, re removal of G.T.R. siding for Lindsay Factories, Ltd., Toronto.

27619, 27620. Sept. 3.—Approving Canadian Northern Ry. revised location at 3 points in Alberta.

27621. Sept. 4.—Ordering C.P.R. to stop train 4 at Ducks station, B.C., for safe delivery of parcel post matter.

27622. Sept. 4.—Extending to Oct. 1 time within which Canadian Northern Ry. shall erect station building at Sangudo, Alta.

27623. Sept. 3.—Ordering Canadian Northern Ry. to stop local trains 7 and 8 on flag at Clarence, Ont.

27624. Sept. 3.—Extending to Sept. 30 time within which C.P.R. shall complete removing old piles and abutments from bed of Big Creek, in Tilbury North Tp., Ont.

27625. Sept. 5.—Authorizing C.P.R. to divert road allowance between Secs. 8 and 9, Tp. 3, Range 1, west principal meridian, Man., and take certain lands for eliminating grade crossing and protection from snow.

27626. Aug. 30.—Approving agreement, Aug. 13, between Bell Telephone Co. and Burgessville Telephone Co. of Ontario.

27627. Aug. 17.—Ordering that A. B. Pottenger, District Registrar of Supreme Court of British Columbia, Vancouver, be appointed to enquire and report on cost of building Hastings St. viaduct over Vancouver, Victoria & Eastern Ry. in Vancouver.

27628. Sept. 5.—Relieving Great Northern Ry. from providing further protection at first crossing east of Lincoln station, B.C.

27629. Sept. 4.—Approving C.P.R. plans B-1-1549 and B-10-56, Aug. 3 and Aug. 2, showing proposed replacement of wooden trestles at bridges 36.4 and 36.97 over Frenchman River, Govenlock Subdivision, Sask.

27630. Sept. 5.—Authorizing C.P.R. to build Y crossing at grade over surveyed road at mileage 49.4, Maple Creek Subdivision, Sask.

27631. Sept. 5.—Authorizing C.P.R. to cross Minerve St., Vulcan, Alta., at grade.

27632. Sept. 5.—Authorizing Canadian Northern Ry. to cross highway between Secs. 16 and 17, Tp. 5, Range 5, west 3rd meridian, Sask.

27633, 27634. Sept. 4.—Extending to Oct. 15 time within which G.T.R. shall install gates at St. Philippe St. and St. Marguerite St., Montreal, day and night watchmen to be employed.

27635. Sept. 7.—Authorizing C.P.R. to build spur for B. J. Carney & Co., from mileage 2.27, Okanagan Subdivision, B.C., to edge of Mara Lake, with parallel siding.

27636. Sept. 5.—Extending to Dec. 31 time within which C.P.R. shall complete spur for E. W. Gillett Co., and revise present sidings on Liberty St. and Pardee Ave., Toronto.

27637. Sept. 5.—Authorizing C.P.R. to build spur for Garden City Feeder Co., Regina, Sask.

27638. Relieving Canadian Northern Ry. from erecting fences, gates and cattleguards between mileage 1 and 116 on its Port Mann Subdivision, B.C.

27639. Sept. 5.—Authorizing C.P.R. to build spur for W. Rankins, at mileage 56.6 on Kootenay Central Subdivision, B.C.

27640. Sept. 5.—Authorizing C.P.R. to build spur for Adams River Lumber Co., Chase, B.C.

27641. Sept. 6.—Authorizing Canadian Northern Ry. to divert North Road and water course at Portage Lake, McDougall Tp., Ont.

27642. Sept. 5.—Authorizing Canadian Northern Ry. to cross highway between Secs. 9 and 16, Tp. 51, Range 5, west 3rd meridian, Sask.

27643. Sept. 4.—Amending order 26205, Dec. 3, 1917, re installation of gates at crossing of Walker Road, Walkerville, Ont., G.T.R. and Pere Marquette Ry.

27644. Sept. 7.—Relieving Canadian Northern Ontario Ry. from speed restriction imposed under order 22113, July 2, 1914, between mileage 174 and 175.25, and 181 and 181.25 from Toronto.

27645. Sept. 7.—Relieving Grand Trunk Pacific Ry. and Canadian Northern Ry. from speed limitation of 18 miles an hour on tangents and 12 miles on curves, imposed by order 26972, Feb. 9, on joint section from Lobstick Jct., to Chip Lake, Alta.

27646. Sept. 9.—Approving Montreal & Southern Counties Ry. timetable effective Aug. 11, company to stop all trains during winter and all trains except limited trains 135, 139, 443, 136 and 430 during summer at St. Hubert Road; all local trains to stop at Springfield Park; and rescinding orders 26286, 26325 and 26540.

27647. Sept. 7.—Removing speed restriction of 8 miles an hour imposed by order 27283, June 5, on Canadian Northern Quebec Ry. from point in St. Theophilus Parish to point in St. Flore Parish, 3516.3 ft.



27648. Sept. 9.—Authorizing J. B. Carr, Hunt-  
ington, Que., under G.T.R. supervision, to extend  
drain under railway embankment to line ditch on  
south side of track, as shown on plan.

27649. Sept. 7.—Authorizing Canadian North-  
ern Ry. to build across road allowance between  
Secs. 11 and 12, Tp. 27, Range 1, west 3rd meri-  
dian, Sask.

27650. Sept. 8.—Authorizing C.P.R. to build  
spur for Slobinsky Bros. & Sons, Winnipeg.

27651. Sept. 9.—Authorizing C.P.R. to extend  
spur for Gordon, Ironsides & Fares, Packers, Ltd.,  
between Knox and Maude Sts., Winnipeg.

27652. Sept. 9.—Authorizing G.T.R. to build  
spur for City of Ottawa, Ont.

27653. Sept. 12.—Authorizing Canadian North-  
ern Ontario Ry. to build temporary siding across  
Blackstone Road, Foley Tp., Ont.

27654. Sept. 11.—Authorizing Canadian North-  
ern Ry. to extend siding across highway at Aner-  
ley, Sask.

27655. Sept. 10.—Authorizing C.P.R. to build  
spur for Laing Produce & Storage Co., Ltd.,  
Brockville, Ont.

27656. Sept. 10.—Relieving Canadian Northern  
Ry. from erecting fences, gates and cattleguards  
on its Boston Bar Subdivision, between mileage  
0.29 and 123.19 B.C.

27657. Sept. 12.—Authorizing Mount Royal Tun-  
nel & Terminal Co. to cross under Portland Ave.,  
Mount Royal, Que.

27658. Sept. 11.—Authorizing G.T.R. to build  
additional track across Wellington St., Exeter, Ont.

27659. Sept. 12.—Authorizing C.P.R. to divert  
road allowance at mileage 76.1, Broadview Subdi-  
vision, Sask.

27660. Sept. 12.—Approving revised location  
and diversion of Canadian Northern Quebec Ry.  
from mileage 60.5 from Joliette, southwesterly to  
Canadian Northern Ontario Ry. in Chatham Tp.,  
Que., and authorizing it to make connection there.

27661. Sept. 12.—Authorizing C.P.R. to divert  
road allowance on south boundary of s. e. ¼ Sec.  
17, Tp. 11, Range 33, west principal meridian,  
Sask.

27662. Sept. 12.—Authorizing C.P.R. and Cana-  
dian Northern Ontario Ry. to use interlocking  
plant at Donlands, Ont.

27663. Sept. 11.—Authorizing Essex Terminal  
Ry. and Canada Southern Ry. to operate over  
crossing near Amherstburg, Ont.

27664. Sept. 12.—Ordering that Canadian Nor-  
thern Ontario Ry. station at Cote Double, Que.,  
be in accordance with C.P.R. no. 2 shelter plan  
11-15-2A; and be completed by Nov. 1.

27665. Sept. 13.—Authorizing C.P.R. to build  
spur for City of Three Rivers, Que.

27666. Sept. 14.—Relieving C.P.R. from erect-  
ing fences, gates and cattleguards on Dominion  
Atlantic Ry. between Windsor and Uniacke, N.S.,  
at certain points.

## Directors' Inspection of Canadian Pacific Railway.

The annual directors' inspection of C.P.R. lines from Montreal to the Pacific coast was commenced Sept. 8, when the President, Lord Shaughnessy, left Montreal in a special train, accompanied by Sir Herbert Holt, R. B. Angus, C. R. Hosmer and E. W. Beatty, directors. At Toronto the party was joined by two other directors, Sir Edmund Osler and W. D. Matthews, and by Dr. Allan Baine, and visited the new union station under construction; the new concrete viaducts on Leaside-North Toronto line, and other works. Port Arthur was reached Sept. 10, and a stop was made over night at Fort William, where Grant Hall, Vice President and General Manager, Western Lines, took over the charge of the party from A. D. MacTier, General Manager, Eastern Lines, who had accompanied it to that point. Winnipeg was reached on the evening of Sept. 11, where the party was joined by another director, Sir Augustus Nanton. After inspecting the company's various interests in that city, the special train resumed its journey westerly, Sept. 13, short stops being made at Brandon, Man., Moose Jaw, Sask., and Calgary, Alta., arriving at Vancouver, Sept. 15, and at Victoria by steamship Sept. 16. The return journey was started from Victoria, Sept. 18, and from Vancouver, Sept. 20. The special train travelled eastward via Calgary, Edmonton and Saskatoon. A two hour stop was made at Winnipeg, Montreal being reached on the evening of Sept. 25.

In accordance with the President's re-

quest, there were no receptions or public functions at any of the points visited. At various places short interviews were given on general subjects, very little being said about railway matters, and that of a particularly general character.

## Canadian Government Railways Construction, Betterments, Etc.

**Prince Edward Island Ry.**—The Premier of Prince Edward Island is reported to have said at Toronto, Sept. 10, that it is expected that by the end of this year a third rail will be laid between Charlottetown and Summerside and to the car ferry terminal at Borden, so as to permit the use of standard gauge rolling stock. When this is done, he said, nearly half the railway in the province will become an effective part of the Dominion Government Railways system, and when the rest of the line is similarly treated the present narrow gauge rolling stock will either be sold or scrapped.

A Charlottetown dispatch of Sept. 17 stated that the distributing of rails for laying a third track from Borden to Summerside, and from Emerald to Elliotts, had been completed, and that tracklaying was in progress.

**Halifax Ocean Terminals.**—A press report states that it is expected that the new temporary station at Halifax will be opened for passenger traffic early in November.

**Sydney Yards.**—We are officially advised that the yard extension being done at Sydney, N.S., consists of some filling by contractors working for the Dominion Iron & Steel Co., upon which the railway laid some additional storage tracks.

**Moncton Yards.**—We are officially advised that the improvements effected at the Moncton, N.B., yards, referred to in recent press reports, were ordinary maintenance work, and not in the way of extensions or new work.

**Moncton Yard Offices.**—Excavation for the new yard offices at Moncton, N.B., to replace those destroyed by fire in April, is reported to be in progress. The new building will be at the west end of the present rest house, and will contain accommodation for some other branches of the service which were not located in the old building.

**St. John, N.B.**—A press report states that a contract has been let to D. C. Clark for extensive repairs and renewals to the Intercolonial Ry. no. 9 shed on Long Wharf, St. John, N.B. The wharf itself is reported to have undergone extensive repairs during the summer. Among the other improvements reported to have been carried out at St. John during the summer are the repairing and renewal work on the Courtenay Bay branch, and the provision of additional trackage on the breakwater wharf. Other work is still in progress.

**South Devon.**—A press report states that some additional tracks are being laid between Fredericton and South Devon, and that a 2-stall locomotive house is being built at the latter place for consolidated locomotives, which are too heavy to cross the bridge there.

**Moffat-Campbellton Division.**—A line 2.7 miles long is being built from Moffat station on the Intercolonial Ry. to a junction with the International Ry. of New Brunswick, 7.4 miles from Campbellton, N.B. The contractor is R. B. Stewart, Perth, N.B. Work has been started and it is expected to have it completed this year, when traffic for the International

Ry. of New Brunswick will be run over the Intercolonial Ry. main line between Campbellton and Moffat, thence over the new line to the I. Ry. of N.B., thus permitting 7.4 miles of the latter railway to be abandoned and the track lifted. The I. Ry. of N.B. was built as a private enterprise, and was subsequently taken over by the Dominion Government as an Intercolonial branch. The present work is being done to co-ordinate the tracks of the two lines for the better working of traffic, in the same way as is being done at the St. Leonard end of the line with the National Transcontinental Ry., also a part of the Canadian Government Railway system. (Sept., pg. 394.)

## Railway Rolling Stock Orders and Deliveries.

The C.P.R. will probably order three 29 ft. vans at its Winnipeg shops.

Dominion Foundries & Steel, Ltd., has ordered 11 flat cars, 40 tons capacity, from National Steel Car Co.

Canadian Northern Railway has received 6 six-wheel switching locomotives from the Canadian Locomotive Co.

The Prince Edward Island Ry. has received 2 ten-wheel narrow gauge locomotives, from the Canadian Locomotive Co.

The Pacific Great Eastern Ry. has bought 30 stock cars, 60,000 lb. capacity, complete with M.C.B. equipment, from Gray & Son, Chicago, Ill.

The Toronto Commissioner of Works received tenders, Sept. 30, for the purchase from the city of 4 flat cars, 3 ft. gauge, 40,000 lb. capacity, weight approximately 17,200 lb.

The C.P.R. received the following additions to rolling stock from its Angus shops, Montreal, recently:—19 express refrigerator cars, 390 steel underframe box cars, and 1 decapod locomotive; also 4 vans from its Winnipeg shops.

Canadian Government Railways, since July 19, have authorized Canadian Car & Foundry Co. to repair approximately 500 cars of various designs. They are being distributed between the company's Montreal and Amherst, N.S., works.

The Grand Trunk Pacific Ry. has authorized the Canadian Car & Foundry Co. to repair 1,000 box cars, each of which will be refitted with economy reinforced ends. This work is being carried out at the company's Fort William plant.

## Grain Inspected at Western Points.

The following figures compiled by the Trade and Commerce Department's inspection branch, show the number of cars of grain inspected on railways at Winnipeg and other points in the Western Division, for August, and for 12 months ended Aug. 31, 1918 and 1917.

	Aug. 1918.	12 months Aug. 31, 1918.	12 months Aug. 31, 1917.
C.P.R. . . . .	499	91,827	131,594
C.N.R. . . . .	258	55,134	72,833
G.N.R. Duluth . . . .	714		3,519
G.T.P.R. . . . .	36	23,405	23,136
Totals . . . . .	783	171,080	231,082

A fast motor freight and express service has been inaugurated between Toronto and Hamilton. It is reported that two trips a day in each direction are being made and that seven trucks, each capable of hauling two trailers, are being used. Lighter cars are being used for the collection and delivery of the freight in Toronto and Hamilton.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alaska Ry.**—A Seward, Alaska, press dispatch stated recently that it was expected to connect up the Seward and Anchorage divisions of the United States Government line in Alaska, Sept. 16, thus completing the line from Tidewater to Seward. (Sept., pg. 390.)

**Canadian Pacific Ry.**—Two miles of new water mains are being laid at Pilot Butte, Sask., this season, J. Brodt being the contractor, and it is reported that an additional 4 miles will be laid next year.

In connection with the Johnson St. bridge at Victoria, the Premier of British Columbia and the mayor had an interview with Lord Shaughnessy, Sept. 17, at which the latter stated that the company would carry out the terms of the agreement referred to in the order in council of 1887, as it would have been carried out had a joint bridge been built at that time. The question at issue is the character of the bridge to be built, and the proportionate cost to be paid by the company and the city. (Sept., pg. 390.)

**Grand Trunk Pacific Ry.**—The Board of Railway Commissioners has approved of plans for an interchange track between the C.P.R. and the G.T.P.R. at Forrest, Man., upon the application of the latter company.

The ballasting and completing of the branch line from Talmage, on the Regina-International Boundary line, into Weyburn, Sask., which was put in hand in May, has been completed. Train service was put in operation over it Sept. 1. (Sept., pg. 390.)

**Kettle Valley Ry.**—A press report of Sept. 12, said construction on the branch line from Princeton, B.C., to Copper Mountain had reached such a stage that it was expected to have track laid on the first six miles by Nov. 1. The Canadian Copper Corporation's big concentrating plant is to be erected at this point on the branch, and it is reported that the site has been cleared. The branch is expected to be completed in its entirety early next summer. (July, pg. 285.)

**Hudson Bay Ry.**—It was reported in Ottawa, Sept. 17, that construction was being suspended. This applies more particularly to the approximately 90 miles of line from the Kettle Rapids of the Nelson River to Nelson, upon which track has yet to be laid. The difficulty of obtaining steel rails, and the fact that the terminal works at Nelson are incomplete are stated to be the causes of this suspension. Some work on the terminals will, however, it is said, be gone on with during the winter. It is stated that arrangements have been made for the Canadian Northern Ry. to provide a service over the completed portion of the H.B.R. from Pas to mileage 189, upon which a limited service has heretofore been given by the contractors.

**Michigan Central Rd.**—The St. Thomas, Ont., City Council, has authorized the company to build 12 portable houses for the use of laborers on the line. Heretofore old freight and passenger cars have been used for housing the men. (Sept., pg. 390.)

**Nakusp & Slocan Ry.**—It is reported that at a conference with the Premier of British Columbia, at Victoria, Sept. 17, Lord Shaughnessy, President C.P.R., intimated the company's willingness to hand over the railway to the province after the redemption of the outstanding bonds.

The North Shore Ry. is the title of the railway extending from Adamville Jct. on

the Intercolonial Ry., to the Beersville, N.B., coalfields, formerly operated by the Beersville Coal & Ry. Co. A new company with a reported capital of \$100,000, is getting the mining properties into order for operation, and expects shortly to have an output of over 100 tons a day. It is reported that J. D. Betts, of Joggins Mines, N.B., is to manage the company, and that the railway line will be overhauled and put in operation. The line has a total length of 14 miles and is in two sections, viz.: from Adamsville to Imperial, 10 miles, and from Hogan Jct., 7 miles from Adamsville, to Coalville, 4 miles. C. J. Burchill, K.C., Halifax, N.S., and J. T. Cumming, New Glasgow, N.S., on behalf of the new company, had an interview with the New Brunswick Government Sept. 6, with respect to the railway part of the undertaking, which was taken possession of by the government on the failure of the former owners. (Aug., 1914, pg. 372.)

**Pacific Great Eastern Ry.**—We are officially advised that the British Columbia Government has let the contract for completing a 42 mile extension of the line beyond the present track end near Clinton, B.C., to the Northern Construction Co., Vancouver. The work to be done consists of track laying for 42 miles, 6 miles of grading, putting in a few trestle bridges, and other work, all the other work having been done before the government took over the railway from Foley, Welch & Stewart.

According to press reports, the lowest tenderer was McKinnon, Cooper, Drabble & Co., Vancouver, at \$300,000; the next lowest Cotton & Co., Vancouver, at \$308,000, and the next Palmër Bros., Vancouver, at \$349,000; but for one reason or another no contract was arranged with either of them. These three bids were on the unit principle, while the remaining bids were on the cost-plus principle. An examination of these by A. F. Proctor, Chief Engineer, showed that the Northern Construction Co. estimate would work out at \$319,000, with 5½% commission, but no commission would be paid on any amount over \$319,000. The company is to furnish all the plant required, and will be allowed 25% upon all savings effected upon estimates. A. R. Mann, President Northern Construction Co., will be in charge of the work. It is not likely that any sub-contracts will be let.

The Premier of British Columbia is reported to have said in Vancouver, Sept. 12, that work had been started by the Northern Construction Co. on the line; that 90 men were then at work, and that it was expected to have steel laid on the 42 miles from Clinton by Dec. 31. (Sept., pg. 390.)

The Quebec & Saguenay Ry. is being operated to within a mile of Baie St. Paul, but it was expected that trains would be running right into the village by Sept. 30. Tracklaying and other work is being gone on with between Baie St. Paul and Murray Bay, 27 miles, and it is expected that this section of the line will be completed by Dec. 31. Tenders for the erection of 5 station buildings, 2 section houses, 1 water tank, 1 locomotive house and other minor buildings were called for a second time recently and are now under consideration. The first tenders received for these buildings were not satisfactory, hence the second call. O'Brien & Doheny, Quebec, are the general contractors. (Sept., pg. 390.)

**St. John & Quebec Ry.**—The Premier of New Brunswick is reported to have

said, Sept. 3, that the progress of construction on the extension from Gagetown to the C.P.R. near Westfield, during August, had been only fair, due to the extreme shortage of labor. Unless there was a decided increase in the number of men on the work immediately, there was little prospect of the extension being completed this year.

T. Cozzolino, representing the Nova Scotia Construction Co., general contractors, is reported to have said all the rails for the extension are on hand and that progress is being made with the work.

Another report states that Kennedy & McDonald, who are sub-contractors for the Westfield end of the line, have their work well forward and hope to complete it by Dec. 1. The Bedford Construction Co., sub-contractors for the Gagetown southerly section, have made some progress, but cannot get sufficient men. A press report states that this company has applied to the Dominion Government to obtain permission to use interned alien enemies from the Amherst, N.S., camp on the work. (Sept., pg. 391.)

**Toronto, Hamilton & Buffalo Ry.**—A fire at the shops at Aberdeen Ave., Hamilton, Aug. 27, is reported to have caused \$10,000 damage. The boiler room, air-compressor room and store room, all of frame construction, were destroyed, the machine shop only being saved.

The new freight yards at Bridgeburg, Ont., laid out at a reported cost of \$100,000, were put into operation Sept. 2. (Aug., pg. 337.)

**Railway Taxation in Montreal.**—After a lengthened argument, Justice Dugas on Sept. 19 reserved judgment in the appeal of the Canadian Pacific, Grand Trunk and Canadian Northern Railways against a judgment of the recorder's for the levy of a special tax upon their rails in the city. The city claims that it has a right under subsection 2, of article 361 of the city charter to levy this tax, which provides unmovable property subject to taxation should comprise: "rails and other constructions and apparatus of every nature used for traction purposes and constructed or placed on, over, or under property, streets, highways or elsewhere within the limits of the city." The companies contend that this is a double taxation, while the city holds that the land is one immovable and the rails another.

**Appeal Court for Labor Disputes.**—The Dominion Government has appointed Justice McLennan of the Quebec Superior Court, Montreal, as chairman of the permanent court of appeal in labor disputes. The other members of the court are:—S. R. Parsons, Toronto, and G. H. Duggan, Montreal, representing the Canadian Manufacturers' Association, and G. Franck and J. Bruce, representing the Trades and Labor Congress. The court will investigate the findings of boards of conciliation under the Labor Disputes Act, when they are unsatisfactory to either party, and its ruling will be supposed to be final.

**Railway Lands Patented.**—Letters patent were issued during August for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary & Edmonton Ry.....	480.00
Canadian Northern Ry.....	7,040.00
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.....	1,275.50
Total .....	8,795.50



## Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

**Canadian Railway Troops.**—General orders have been issued giving authority for the organization as a unit of the Canadian Expeditionary Force, part of the active militia, of the Corps of Canadian Railway Troops, and such unit is placed on active service from the date of its organization, June 5, 1918. The estab-

lishment in Canada of the depot, which was heretofore known as the Railway Construction Depot, Military District No. 2, and which was originally organized as a forestry depot, will be as laid down for a depot battalion with a strength of a headquarters and four companies. Authority has been granted for the disbandment of the Canadian Railway Construction Corps, created Mar. 5, 1915, and organized July 1, 1915.

**The Timiskaming & Northern Ontario Railwaymen's Patriotic Association,** up to the last report had contributed \$90,519.58 to the Canadian Red Cross and Canadian Patriotic Funds.

### PERSONAL NOTES.

**Lieut. R. J. Backhus,** 29th Vancouver Battalion, who has been reported killed in action, was formerly assistant to Freight Agent, Grand Trunk Pacific Ry., Victoria, B.C., and afterwards purser on the G.T.P. Coast Steamship Co.'s s.s. Prince Rupert.

**Capt. S. M. Bosworth,** mentioned in dispatches recently, is son of G. M. Bosworth, Chairman, Canadian Pacific Ocean Services, Ltd., Montreal.

**Lieut. J. Boyd,** Montreal, Canadian Overseas Railway Construction Corps, has been awarded the Military Cross for conspicuous gallantry and devotion to duty, in maintaining track until all guns and rolling stock had been removed. Under heavy fire, and being cut off, he took his party across country and back to his company. Later, when in charge of a demolition party, he destroyed all structures and track, sometimes when the enemy was close on him. He was wounded, but completed his duties before reporting for medical attention.

**Private J. R. Bryant,** who was reported recently as wounded in action, was formerly in the Stores Department, Canadian Northern Ry., Saskatoon, Sask.

**W. J. Christie,** formerly Travelling Auditor, Grand Trunk Pacific Ry., Edmonton, Alta., who went overseas as a sergeant in the 202nd (Sportsmen's) Batta-

lion, since when he has seen considerable service in France, has been given an Imperial commission in the Seaforth Highlanders.

**Lieut. H. N. Darling,** Toronto, Canadian Railway Troops, has been awarded the Military Cross. The pipe line supplying the water tanks from which the locomotives were filled was broken by shell fire. He returned with a noncommissioned officer and several men, under very heavy shell fire, and repaired the pipe line, thus enabling the locomotives to get away before the enemy's arrival. Throughout subsequent operations he displayed the greatest coolness and courage, and set a splendid example to all ranks.

**Lieut.-Col. J. S. Dennis,** Chief Commissioner of Colonization and Development,

Cross. On the leading tractor of a train, comprising two other tractors and 17 empty cars, becoming derailed, and thus preventing the salvage of the rest of the train, he immediately organized a party and proceeded to the point of derailment through a very heavy gas barrage, but owing to lack of appliances he could not re-rail the tractor. Having, however, cut the track on each side of the tractor and made a loop round it, he was able to get the rest of the train to proceed, although later its passage was again obstructed by a wrecked train, the damaged cars of which were cleared away successfully. By his ingenuity and gallant conduct he undoubtedly saved the tractors and the cars.

**Capt. J. G. McCaul,** who was awarded the Military Cross recently, was formerly in Canadian Northern Ry. service at Edmonton, Alta.

**Sergt. A. E. Moore,** who, prior to enlistment in the Canadian Expeditionary Force, was engaged in the Canadian Northern Ry. shops at Winnipeg, is reported to have been wounded in action for the second time.

**Lieut. C. E. Peers,** reported killed in action recently, was formerly Assistant Engineer, Sault Ste. Marie Canal. He left Canada on overseas service in 1916.

**Lieut.-Col. S. L. Penhorwood,** of the Forestry Service, was a guest of the King and Queen at Windsor, Eng., Sept. 22. He was formerly Manager, New Ontario Dock Co., Sault Ste. Marie, Ont., and prior to the war, was officer commanding the 51st Sault Ste. Marie Rifles. After the outbreak of war, he was selected to organize the Northern Battalion from the Algoma, Nipissing and Timiskaming Districts.

**Lieut. E. V. Power,** reported killed in



A Canadian light railway train passing through camouflage near Loos. From Canadian official photograph. Copyright reserved.

C.P.R., Montreal, who is announced to have been made a Companion of the Order of St. Michael and St. George, in connection with war mission work, which he carried out in the western states recently, is also announced to have been specially employed and attached to the staff of the Canadian Expeditionary Force in Siberia.



The Canadian Minister of Militia, Major General Mewburn, addressing a Canadian tramway corps near the western front. From Canadian official photograph. Copyright reserved.

**Lieut. C. W. W. Field,** who joined the U.S. Army in May, 1917, and who has been killed in action, was formerly City Passenger Agent, G.T.R., and Central Vermont Ry., Boston, Mass.

**Lieut. J. A. Foote,** of the Canadian Railway Troops has been awarded the Military Cross. The area where he was working was subjected to intense shell fire, and the line was broken in six places. He repeatedly reorganized his working parties, who had suffered casualties, and by his example and encouragement kept his men at work under most difficult conditions. By his efforts the line was kept open and the supply of ammunition was ensured.

**Lieut. M. Helyer,** Canadian Railway Troops, has been awarded the Military

action, was a son of N. J. Power, formerly General Auditor G.T.R., Montreal, and now residing in California.

**Lieut. G. I. Price,** St. John, N.B., Canadian Railway Construction Corps, has been awarded the Military Cross. While acting as liaison officer with four pieces of railway mounted artillery, through his untiring efforts and skill all pieces were removed without loss or damage. The track was continually being broken by shell fire, and was repaired as required.

**Lieut. W. J. Riley,** Victoria, B.C., Canadian Railway Troops, who had previously been given the military medal, has been awarded the Military Cross, for conspicuous gallantry and devotion to duty in attempting to save two 12 in. railway howitzers, and in saving a locomotive which



would have fallen into enemy hands. A number of breaks had to be repaired, and at one part of the journey the locomotive had to be taken over an 8 in. break in the rails. In spite of heavy machine gun and rifle fire, he was successful and the locomotive was then used to haul a trainload of material. He showed great courage under very trying conditions.

Lieut. Edward Slattery, holder of the distinguished conduct medal, and the military medal with two bars, who was killed in action, Aug. 30, was, before enlisting, engaged as a car cleaner in the C.P.R. Glen Yard, Montreal. He enlisted as a private, and received the military medal for bravery in July, 1917, two bars being added for his work during the Vimy Ridge encounters. The distinguished conduct medal was awarded in Aug., 1917, and he was promoted to lieutenant on the field, in April, 1918.

Lieut. E. G. Stevenson, St. John, N.B., Canadian Railway Troops, has been awarded the Military Cross for conspicuous gallantry and devotion to duty in an attempt to save two 12 in. railway howitzers. The track behind the guns had been broken and the breaks had to be repaired. This was accomplished under heavy shell fire, and the guns pushed for half a mile by hand. It was only when the shelling and machine gun fire became intense, and the infantry had to take up another position behind the guns, that the attempt had to be abandoned.

Brigadier-General J. W. Stewart, of Foley, Welch & Stewart, railway contractors, who has been associated throughout the war with the work of the Canadian Railway Troops, is mentioned as likely to be appointed Director of the whole transportation system in France and Flanders. In speaking of him recently, the Dominion Minister of Militia paid special tribute to the work for which he is responsible.

Private J. H. Summerbell, reported recently as wounded in action, was formerly in the Engineering Department, Canadian Northern Ry., Toronto.

Lieut. C. W. Switzer, Montreal, Canadian Overseas Railway Construction Corps, seconded to Railway Construction Engineers, has been awarded the Military Cross. He received an order for the demolition of structures with a time limit, and so was unable to communicate with the railway company. On his own initiative, he organized the demolitions and handled quantities of high explosives under heavy shell fire.

Corporal Leslie Taylor, formerly in the Canadian Northern Ry. shops at Winnipeg, has been awarded the Military Medal. He joined the Canadian Expeditionary Force in Aug., 1914.

C. W. Wilson, Locomotive Foreman, Canadian Government Railways, Hearst, Ont., has been granted leave of absence for military service.

Phillip Hamilton Wilson, of the 2nd Canadian Mounted Rifles, formerly of the 198th Battalion, who was killed in action in France, Aug. 10, was the youngest son of the late Jas. Wilson, at one time General Superintendent, C.P.R., Toronto.

A press report states that trans-Atlantic steamship companies are being asked to accept bookings for passage after the war.

The G.T.R. is reported to have handled 8,371,521 bush. of grain from Great Lakes ports to Montreal for export during August, which, it is claimed, exceeds by about 500,000 bush. the previous best record by the company.

## Canadian Northern Railway Construction, Betterments, Etc.

**St. Charles River Bridge.**—A new bridge across the St. Charles River, at Quebec, is under construction. The present bridge, known as the St. Anne bridge, was built for the Quebec & Lake St. John Ry., and was subsequently used in addition by the Canadian Northern Ry. and the Quebec Ry., Light & Power Co. It was condemned as insufficient for the traffic requirements about nine years ago, but the proposal to rebuild was left in abeyance until the completion of certain river improvement works. However, the condition of the bridge became such that the work of erecting a new bridge became an immediate necessity. The piers for the new bridge, which will be located immediately to the west of the present bridge, are being put in as part of the river improvement works being carried out for the Dominion Government by Quinlan & Robertson. They provide for a superstructure to carry a double track railway, electric railway tracks, and highway for general traffic, but only a single track will be laid until the river improvement works are completed. The contract for the superstructure is reported to have been let to the Dominion Bridge Co. The piers are being erected under the supervision of E. A. Hoare.

**Montreal Tunnel Opening.**—The tunnel under Mount Royal, which gives the C.N. R. an entrance into the center of Montreal, was officially opened for traffic, Sept. 21. The first train arriving in Montreal by the tunnel was a special one from Ottawa, carrying G. A. Mountain, Chief Engineer, Board of Railway Commissioners, and several C.N.R. officials, and travelling over the direct line between the two cities. The distance between Montreal and Ottawa by the new route is 112 miles, instead of 160 miles by the old line via Joliette. The new line follows the Ottawa River from Hawkesbury, crosses the Back River to Montreal Island, and reaches the center of the city via the tunnel. The divisional yard is at Cartierville, and between there and the Montreal terminal electric locomotives will be used. A through service between Montreal and Toronto via Ottawa will be started at an early date.

**Connecting Link Near Grenville, Que.**—Tenders were received to Sept. 10 for the construction of about a mile of railway to connect the Canadian Northern Ontario Ry. and the Canadian Northern Quebec Ry. at Cushing in Argenteuil county, Que., but we have been officially advised that owing to the lateness of the season and other contingencies it has been decided to defer the work for the present and no contract has been let.

**Western District.**—In connection with the plans for the extension of the Luck Lake Branch, upon which the Dominion Government authorized the company to lay 14 miles of track this year, a deputation from Rosetown, Sask., and vicinity waited upon the Dominion Government at Ottawa recently to press for the laying of a greater mileage.

The Board of Railway Commissioners has directed the company to build an additional 40 ft. to its freight sheds, and to provide adequate waiting room accommodation at North Battleford, Sask.

**Vancouver Island Lines.**—The Premier of British Columbia is reported to have said in Vancouver Sept. 12, that rails were being transferred from Port Mann, to Victoria, and that they were being laid on the line from Victoria towards the Nitinat River. (Sept., pg. 385.)

## Railway Finance, Meetings, Etc.

**Burrard Inlet Tunnel & Bridge Co.**—At the annual meeting of shareholders, who are, with a few exceptions, representatives of city and other municipal councils in the vicinity of Vancouver, on Sept. 11, the President—Reeve Bridgman of North Vancouver City—Reported that there was no change in the company's affairs since the last annual meeting, except that the Dominion Parliament had extended its charter privileges until May, 1920. Nothing in the way of construction was proposed to be done, and all the directors proposed to do was to keep the charter clear until conditions became normal. The shareholders are:—City of Vancouver, 2,000 shares; City of North Vancouver, 2,000 shares; North Vancouver district, 3,375 shares; Carter Cotton, 20 shares; Loutet, 20 shares; McNaught, 20 shares; and McLean, 20 shares. The directors and officers were re-elected, as follows:—President, E. H. Bridgman; Vice President, G. W. Vance; other directors:—Messrs. Loutet, McBain, MacLurg, Woodside, and Carter-Cotton; Secretary, R. F. Archibald.

**Grand Trunk Ry.**—An issue of \$3,000,000 three year notes at 6%, at 99, partly to replace \$2,000,000 5% notes due shortly, has been authorized in England.

**Guelph Junction Ry.**—The City of Guelph, Ont., has received recently \$17,000 as a three months dividend on its stock in the G.J.R., against \$10,600 for the corresponding period of 1916-17. The dividends received for the first nine months of this year aggregate \$40,375.

**New York Central Lines.**—There have been deposited with the Secretary of State at Ottawa, copies of a supplemental agreement between the Guaranty Trust Co. of New York, the New York Central Rd., the Michigan Central Rd., and the Cleveland, Cincinnati & St. Louis Rd., under the New York Lines Equipment Trust for 1907.

**Timiskaming & Northern Ontario Ry.**—Passenger receipts for July, \$59,578.42; freight receipts, \$150,457.38; total receipts \$210,035.80, against \$56,134.33 passenger receipts; \$110,956.45 freight receipts; \$167,090.78 total receipts, for July, 1917.

**White Pass & Yukon Ry.**—A special meeting of debenture holders and shareholders was held in London, Eng., Aug. 2, for the consideration of reorganization proposals, as outlined in our last issue. The meeting was called under an order of the court, and votes of the various interests were taken for submission to the court, the result of which will be announced later.

**Grand Trunk Ry. Acquisition.**—The following statement was issued from the G.T.R.'s London, Eng., office Sept. 5:—"Reports that shareholders and directors of the G.T.R. in recent negotiations in London insisted that the only basis upon which they would sell their property to the Dominion Government was for cash, are declared here on highest authority to be absolutely untrue. It is stated that there was no suggestion made by either side of a cash settlement in payment for taking over the system, the only terms discussed being those regarding a fixed annuity to be paid to owners of the property."

Officials of the C.P.R. and the Canadian Government Railways met in St. John, N.B., Sept. 21, to discuss freight and passenger rates in the maritime provinces.



## The Canadian Railway War Board's Work.

**Abbreviations for Cars:**—For the sake of uniformity in compilation of interchange and other car reports, it is directed that Canadian lines adopt the following abbreviations:—

- "A"—Automobile cars.
- "B"—Box cars.
- "C"—Coal gondola cars.
- "H"—Hopper cars.
- "CK"—Coke cars.
- "F"—Flat cars.
- "LP"—Live poultry cars.
- "MW"—Ballast cars.
- "R"—Refrigerator cars.
- "SD"—Single deck stock cars.
- "DD"—Double deck stock cars.
- "PH"—Palace horse cars.
- "T"—Tank cars.

**Commodities liable to damage cars.**—One of the railways has issued the following circular:—"When box cars are necessary for shipments of freight, either in carload or less than carload quantities, which is liable to damage sides, ends or floors of cars, only old cars must be loaded, and when system cars are used, only those having a carrying capacity of 30 tons or less are to be so loaded. This includes such freight as: Acids of all kinds, asphalt, empty oil barrels, empty carboys, fertilizer, bulk or packages, gasoline, glue stock, grease, hides, ice, lime, bulk or packages, marget waste, molasses, paints, petroleum and products, phosphates, syrups, tallow, tankage, tar, turpentine, kerosene and other oils, or any other commodity liable to leak or that will taint the car and render it unfit for movement of foodstuffs. System box cars exceeding 30 tons capacity and system automobile or produce cars, must not, under any circumstances, be used for such freight."

It is suggested that all member lines might with advantage issue specific instructions somewhat similar to the foregoing.

**General Embargoes.**—In issuing other than general embargoes, it is desired that the following exemptions be made in the order of priority shown:—1. Live stock and perishables. 2. Fuel, including coal, coke, charcoal, cordwood, slabs, edgings. 3. Shipments consigned to or for account of Imperial Munitions Board and Director of Overseas Transport, and to officers of United States Government departments. 4. Food for human consumption, including grain, grain products, sugar, salt, canned goods. 5. Food for animals and poultry. 6. Railway material and supplies (other than coal or coke when consigned to an officer of the railway at a station of the railway. 7. Shipments consigned to manufacturers of locomotives and cars. 8. Supplies for coal mines. 9. Oils. 10. Tank cars, loaded and empty. 11. Empty gas cylinders.

**Obligation of Supplying Rolling Stock.** Canadian railways have been asked by the Board to be governed by the following regulations issued by the United States Railroad Administration's car service section:

1. (a) When cars are to be loaded to destinations within the same switching limits in which the shipment originates, the obligation of supplying equipment ordered rests with the road upon which the car is to be loaded.

(b) When cars are to be loaded on a switching line to destinations beyond the switching limits, primary obligation for equipment ordered rests with the carrier road which is to receive the loaded car for road haul, subject to paragraphs 2 and 3.

2. A road haul line loading cars in switching service destined to points be-

yond the switching limits on another carrier road shall furnish the equipment from such supply as may be available within such switching limits and such carrier roads will make necessary equalization locally within weekly periods.

3. A terminal switching line loading cars in switching service destined to points beyond the switching limits on a carrier road shall furnish the equipment from such supply as may be available on its rails and when equipment required is not available, will call upon the carrier road to furnish necessary cars under paragraph (b).

4. The use of equipment as above is subject to car service rules, and exceptions may be made only upon authority of the car service section or the regional director having jurisdiction.

5. Shippers will be required to place order for equipment desired with proper representatives of the road on which cars are to be loaded.

**Shipments to Consignees.**—From time to time embargoes are issued by railways to the effect that "at request of consignee" shipments will not be accepted when billed to such consignee. For obvious reasons it is inadvisable that an embargo be placed for the reason stated. The issuance of an embargo in this manner conveys the impression that the railway is responsible for regulating the receipts of the consignee, and the railway might be involved in difficulty due to non-fulfillment of contracts entered into by outside parties.

**Transportation of Mails.**—As, on account of the increases in the costs of transportation, it is apparent that the rate of compensation allowed railways for the carriage of mails is inadequate, it is intended to make application to the Dominion Government at an early date for the establishment of mail carrying rates which will fully compensate the railways for the service given. In order to permit of necessary action being taken, member companies have been asked to furnish statements showing the present compensation received, the cost of the service performed, and the increase in cost since the establishment of the present rates, and also to recommend what increases in rates should be obtained.

### Canadian Railway Board of Adjustment No. 1.

Case 1, heard Sept. 10, Brotherhood of Railroad Trainmen and Toronto, Hamilton & Buffalo Ry. Claim for reinstatement, pay for time lost, of brakeman Earl Stewart, discharged on account of accident involving rear end collision.

Joint statement of fact as to controversy existing between T. H. & B. Ry. and the Brotherhood of Railroad Trainmen, submitted to Canadian Railway Board of Adjustment No. 1. "On January 29, 1918, a rear end collision occurred on the T. H. & B. Ry. about 3½ miles east of Hamilton, at the Albion bridge. On the date in question extra west locomotive 53, left Stoney Creek shortly after 7 p.m., and about the Albion bridge was stopped on account of light locomotive 16, having stopped about two locomotive lengths inside of automatic block signal 331, which was standing at 'danger' on arrival of extra 53. Rear Brakeman Earl Stewart left the caboose of extra 53, which was standing on the bridge, to flag, but only got back about 700 ft. before extra west locomotive 70, showed up around curve and, passing him, struck rear end of ex-

tra 53 standing on the Albion bridge. Conductor Darche of extra 53 was killed in the collision, and another employe was injured, while one other employe riding in the caboose got out without injury. Brakeman Stewart was, on Feb. 9, 1918, 'discharged for failure to comply with flagging rule, Jan. 29, 1918.'

"The contention of the organization is: That flagman Stewart left the caboose of extra 53 as promptly as possible after stopping; that he got out as far as possible, with the time at his disposal, before extra 70 showed up around the curve, and that, for that reason, it was improper to hold him responsible for the accident.

"The contention of the company is: That flagman Stewart did not get back the proper distance required by rules to flag extra 70, and that he did not get back as far as he could have gone with the time at his disposal after extra 53 stopped. He was discharged for reasons above quoted.

"F. F. Backus, General Manager, T. H. & B. Ry.; W. J. Goodfellow, General Chairman, B. of R. T.—T. H. & B. Ry."

After analyzing the foregoing statements of fact and hearing additional evidence submitted by each party to the controversy, the board considered the following questions:—

1. Did Stewart observe T. H. & B. R. flagging rules? Answer, yes.

2. Should Stewart be paid according to schedule for all time lost? Answer, yes.

The unanimous opinion of the entire board is, and they take this opportunity of impressing on all concerned, that flagging rules must be rigidly observed to prevent accident resulting in damage to property to injury to person, and that everything possible must be done to afford full protection to trains.—U. E. Gillen, Chairman; S. N. Berry, Vice Chairman.

**Contagious or Infectious Diseases on Trains.**—The Board of Railway Commissioners has issued the following circular: "Railway companies are required to issue instructions to conductors of trains carrying passengers, to report, immediately, to the proper officer, any case, or cases, that they know of or have reason to suspect, of a passenger, or passengers, suffering from contagious or infectious diseases, having travelled in any of the cars in their trains; and, furthermore, instruct the official designated to have such car, or cars, removed from service and thoroughly disinfected in accordance with clause 5 of general order 35, before permitting the same to go into service again."

**The Metric System in Great Britain.**—A report presented to the Imperial Parliament recently, by the committee appointed to make suggestions as to the commercial and industrial policy to be followed after the war, contains certain conclusions relative to the adoption of the metric system in Great Britain. The committee states that having given the subject very full consideration, it is unable to recommend the compulsory adoption of the system, expresses itself as not being convinced that it is better than the present British system, and as satisfied that the practical objections are such as to outweigh any advantages claimed for it.

The Grand Trunk Pacific Ry. inaugurated a direct service between Regina and Weyburn, Sask., Sept. 1, over the Regina-Northgate line as far as Talmage, then over the recently completed branch into Weybury. The service is tri-weekly, each way on Tuesdays, Thursdays and Saturdays.



# The Canadian Northern Railway's Reorganization, Etc.

The principal event of the past month in Canadian railway circles has been the final steps in the transfer of the C.N.R. ownership to the Dominion Government, the retirement of the President and Vice President, Sir Wm. Mackenzie and Sir Donald Mann, and most of the other directors, the election of new directors and the election as President of D. B. Hanna, heretofore Third Vice President.

## Legislation, Agreement and Arbitration.

In 1913 the Dominion Parliament passed an act to grant subsidies towards the construction of lines as follows: Canadian Northern Ontario Ry., from Ottawa to Toronto, not exceeding 250 miles, at \$6,400 a mile; Canadian Northern Ontario Ry., from Ottawa to Port Arthur, not exceeding 910 miles, \$12,000 a mile; Canadian Northern Alberta Ry., from Edmonton to the boundary between Alberta and British Columbia, not exceeding 260 miles, \$12,000 a mile. It was provided that before any of the subsidies be paid, the C.N.R. Co. should transfer to the Finance Minister, in trust for the government, \$7,000,000 of common stock.

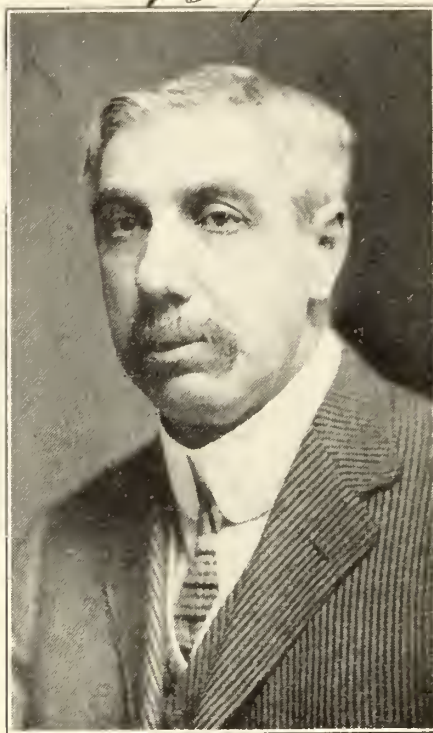
In 1914 the Dominion Parliament passed an act providing that the government might aid in the construction, completion, equipment and betterment of the C.N.R. system, by guaranteeing its bonds, etc., to an amount not exceeding \$45,000,000, the guaranteed securities to be secured by a trust deed of securities of the railway, express, telegraph, transfer and other companies comprising the C.N.R. system, and by the transfer to the Finance Minister, in trust for the government, of \$33,000,000 of C.N.R. common stock, making, with the \$7,000,000 previously transferred, a total of \$40,000,000. The act also provided that while any of the guaranteed securities were outstanding the government might appoint any person to be a director of any or all of the companies included in the C.N.R. system.

In 1917 the Dominion Parliament passed an act providing that it might acquire the remaining 600,000 shares of the C.N.R.'s capital stock, not then held by the Finance Minister in trust for the government, on terms to be set out in an agreement to be made between the government and the owners and pledgees of not less than five-sixths of that stock, and for a price to be determined by arbitration; that upon the making of the agreement, at least five-sixths of the shares be transferred to the Finance Minister in trust for the government, and that if any of the 600,000 shares be not transferred the Governor in council might declare them to be the government's property, and that they should be paid for pro rata with the shares transferred as above required. The government was authorized, on the transfer of the five-sixths of the shares referred to, to assist the C.N.R. in paying its indebtedness up to \$25,000,000.

On Oct. 1, 1917, five-sixths of the 600,000 shares, par value \$51,000,000, were transferred to the Finance Minister, making a total of 910,000 shares, par value \$91,000,000, vested in the government, and shortly afterwards the Finance Minister announced that the government had become the "sole proprietor" of the system.

The agreement entered into between the government, Mackenzie, Mann & Co., Ltd., and the Canadian Bank of Commerce, pledgees of a portion of the 600,000 shares of stock, under the act of 1917, provided that arbitrators should deter-

mine the value of the 600,000 shares as at Oct. 1, 1917, that should the value be determined as \$10,000,000 or more, the price to be paid therefor should be \$10,000,000, but if the value determined



David Blythe Hanna,  
President, Canadian Northern Railway.



Alfred J. Mitchell,  
Vice President, Finance and Accounting, Canadian Northern Railway.

should be less than \$10,000,000, the value so determined was to be the price paid, in other words, no more than \$10,000,000 was to be paid, regardless of what the arbitrators might decide as to the price; payment to be made by the government

within three months of its receipt of the award, subject to deduction for undischarged C.N.R. liabilities, if any.

Under the agreement, the following arbitrators were appointed: Sir Wm. Meredith, Chief Justice of Ontario, representing the Dominion Government; Wallace Nesbitt, K.C., Toronto, representing Mackenzie, Mann & Co., and Canadian Bank of Commerce; and Mr. Justice R. E. Harris, of Halifax, selected by the two other arbitrators. The arbitration opened at Toronto, Feb. 4, 1918, and continued at intervals until May 25, when the arbitrators gave a unanimous award, declaring that the value of the 600,000 shares was \$10,800,000, each of the parties to pay its own costs of the arbitration.

Under the terms of the agreement, the payment under the award was to be made by Aug. 25, but it was delayed for some two weeks, owing to certain matters which had to be cleared up. On Sept. 11, it was announced in Ottawa that payment had been made for 510,000 shares by a cheque for \$8,500,000, payable jointly to Mackenzie, Mann & Co. and the Canadian Bank of Commerce, the balance of the \$10,000,000 being held for the acquirement of the 90,000 remaining shares outstanding. As the holders of these shares were not parties to the agreement respecting the five-sixths of the 600,000 shares, it is said that they will be paid for on the basis of the arbitrators' determination of \$10,800,000, viz, \$18 a share, making the total payments \$10,120,000.

## Canadian Northern Railway System Properties.

The companies amalgamated in 1914 as the C.N.R. system were as follows: Bay of Quinte Ry. Co., Brockville, Westport & North Western Ry. Co., Canadian Northern Ry. Co., Canadian Northern Pacific Ry. Co., Canadian Northern Alberta Ry. Co., Canadian Northern Western Ry. Co., Canadian Northern Saskatchewan Ry. Co., Canadian Northern Manitoba Ry. Co., Canadian Northern Ontario Ry. Co., Canadian Northern Quebec Ry. Co., Canadian Northern Express Co., Canadian Northern Transfer Co., Canadian Northern Telegraph Co., Canadian Northern Steamships, Ltd., Canadian Northern System Terminals, Ltd., Central Ontario Ry., Duluth, Winnipeg & Pacific Ry. Co., Halifax & Southwestern Ry. Co., Irondale, Bancroft & Ottawa Ry. Co., Lake Superior Terminals Co., Minnesota & Ontario Bridge Co., Minnesota & Manitoba Rd. Co., Marmora Ry. & Mining Co., Mount Royal Tunnel & Terminal Co., Niagara, St. Catharines & Toronto Ry. Co., Northern Consolidated Holding Co., Quebec & Lake St. John Ry. Co., Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co., St. Boniface Western Land Co., Winnipeg Land Co.

The C.N.R. Co. holds a controlling interest in the Great Northwestern Telegraph Co., which is included in the transfer to the government. No action has apparently been taken in regard to the Chatham, Wallaceburg & Lake Erie Ry., Toronto Suburban Ry., and the Toronto & Eastern Ry., on the latter of which only a little construction has been done. All three of these companies are controlled by Sir Wm. Mackenzie and associates. It is possible that some, if not all of them, may be transferred to the government.

## Canadian Northern Railway Shareholders.

The acting Minister of Finance, Hon. A. K. Maclean, stated in the House of



Commons, on May 14, 1918, that the 1,000,000 shares of \$100 each of the C.N.R. Co.'s stock were then held as follows:

Minister of Finance and Receiver General of Canada in trust for His Majesty .....	910,000
Lazard Brothers & Co. ....	22,500
Mackenzie, Mann & Co., Ltd., transferred in blank and deposited with Province of British Columbia, Order deposited with Finance Minister .....	16,000
Z. A. Lash, K.C. ....	13,020
Mackenzie, Mann & Co., in trust....	12,660
Sir John Aird and H. V. F. Jones, in trust .....	10,000
British Empire Trust Co. Ltd. ....	3,240
D. B. Hanna .....	2,600
R. M. Horne-Payne .....	2,520
Bank of Scotland .....	2,000
Lewis Lukes .....	2,000
D. C. Rea and E. B. McNery, in trust .....	1,000
W. H. Moore .....	1,000
A. J. Mitchell .....	100
Sir William Mackenzie .....	100
Sir Donald Mann .....	100
R. J. Mackenzie .....	100
E. R. Wood .....	20
W. J. Christie .....	20
W. K. George .....	20
G. A. Bell .....	20

Total .....

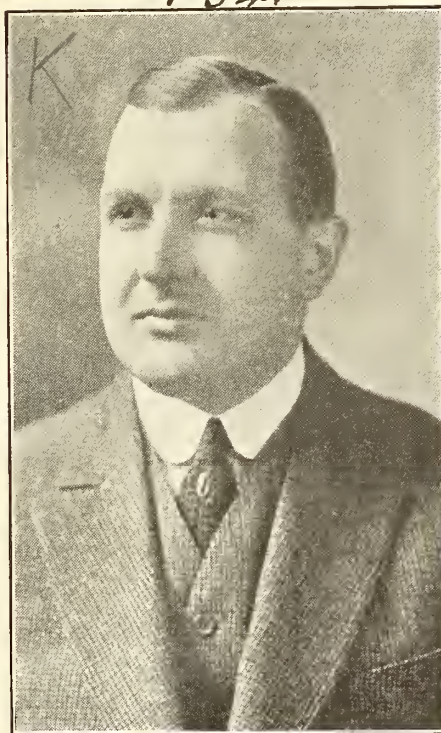
1,000,000

The Minister added that the last three named were the government directors, who had shares allotted to them for qualification purposes which they held in trust for the Government.

#### The Prime Minister's Declaration of Railway Policy.

Sir Robert Borden, in speaking at the Toronto Exhibition directors' luncheon on Sept. 9, said:—"Questions of great moment demand and are now receiving the attention of the government. With one exception the largest railway proprietor in Canada is the Canadian people; and the day may come when there will be no exception. The acquisition of the Canadian Northern Ry. system was brought about by conditions arising out of the war, and, in my judgment, it was the wisest solution of existing difficulties. The system comprises about 10,000 miles of railway, of which more than 9,700 miles are in actual operation; and, including the \$10,000,000 to be paid for the capital stock, the total cost to the country will be between \$44,000 and \$45,000 a mile. The greater portion of the line runs through a country which must develop rapidly in the early future. For this reason its future prospects are more favorable than those of the Intercolonial or the National Transcontinental. But if we take into account capitalization, the comparison is still more favorable to the recently acquired system. The government system of railways, comprising the Intercolonial, the Prince Edward Island and other small railways in the Maritime Provinces, embraces a total of 1,941 miles, hitherto known as the Canadian Government Railways. It represents a capitalization of more than \$137,000,000, without including interest. That means a capitalization a mile of \$70,666. If, however, interest were included (as it has been included in the capitalization of the Canadian Northern system), the capitalization would exceed \$100,000 a mile. Comparison with the Grand Trunk Pacific is equally striking. It embraces a total of 1,748 miles. The total expenditure upon the road, equipment and rolling stock amounts to about \$180,000,000, or more than \$100,000 a mile. The National Transcontinental comprises 1,811 miles from Moncton to Winnipeg. The actual cash paid out for its construction, without including a dollar for interest, is nearly \$164,000,000 and if interest is added the amount exceeds \$200,000,000 for 1,811 miles. This represents a capitalization of \$92,000 a mile if interest is omitted, and over \$112,000, including interest.

"The country, therefore, has embarked upon a wide policy of state ownership under very favorable conditions. Difficult questions at once present themselves as to methods of operation. If the policy of State ownership is to be successful, certain conditions are essential, and the people must resolutely support the government in maintaining them. The methods by which the operation of the road is to be carried out must be as efficient as those of any private corporation. There must be no party political interference; that would be absolutely fatal to discipline, to efficiency and to success. On the other hand, there must remain with the people and parliament of the country a general control which is incident to and indeed inherent in ownership. The government's proposals will be made public almost immediately, and they will be based upon the considerations I have mentioned. The total mileage owned by Canada is very large, comprising nearly



R. C. Vaughan,  
Assistant to President, Canadian Northern Railway.

14,000 miles, and reaching from the Atlantic to the Pacific. All the lines included in this mileage should be operated as one system and under one management; this system should not be administered by a department of the government; it should be connected, as soon as practicable, with steamship lines on both Atlantic and Pacific; and last, but not least, its operation should be kept absolutely free from party political interference. For these reasons and for this purpose the board of the Canadian Northern system will be reconstituted in the immediate future."

#### C.N.R. Directorate and Officials.

The C.N.R. directors, at the time of the issue of the last annual report to June 30, 1916, in Nov., 1916, were: Sir Wm. Mackenzie, President; Sir Donald Mann, Vice President; D. B. Hanna, Third Vice President; Z. A. Lash, Senior Counsel; R. M. Horne-Payne, London, Eng.; R. J. Mackenzie, Winnipeg; Frederick Nicholls and E. R. Wood, Toronto, representing the private shareholders, and W. J. Christie, Winnipeg; W. K.

George, Toronto, and H. W. Richardson, Kingston, Ont., representing the government. Messrs. Nicholls and Richardson resigned from the Board on their appointment to the Senate, and Graham A. Bell, then Assistant to the Minister of Railways and Financial Comptroller, Railways Department, was appointed as one of the government directors.

On Sept. 6, 1918, Sir Wm. Mackenzie, Sir Donald Mann and all the other directors, except D. B. Hanna and G. A. Bell, the latter of whom had in the meantime been appointed acting Deputy Minister of Railways, retired; A. J. Mitchell, theretofore assistant to Vice President, C.N.R., and Comptroller, Mackenzie, Mann & Co., was elected a director, and on Sept. 18 it was announced that the following additional directors had been elected, of course, on the government's nomination:—Robt. Hobson, President, Steel Co. of Canada, Hamilton, Ont.; F. P. Jones, Vice President and General Manager, Canada Cement Co., Montreal; E. R. Wood, President, Dominion Securities Corporation, Toronto; R. T. Riley, President, Northern Trusts Co., Winnipeg; C. M. Hamilton, farmer, Weyburn, Sask. E. R. Wood, who had been a member of the board, resigned at the same time as Sir Wm. Mackenzie, Sir Donald Mann, and others, and was re-elected. D. B. Hanna was elected President, and A. J. Mitchell was appointed Vice President, in charge of finance and accounting.

The first meeting of the new directorate was held in Toronto Sept. 27, all the directors except E. R. Wood being present. After inspecting the new terminals at Leaside, they left that evening by special train for Ottawa and Montreal, to look over the terminals, etc., at those places, and inspect the line between Ottawa and Montreal, which will be opened for traffic shortly in connection with the line between Ottawa and Toronto, thus giving a through route between Montreal and Toronto. Until otherwise decided, the board will meet in Toronto each Friday.

In addition to the election of D. B. Hanna, as President, and the appointment of A. J. Mitchell as Vice President, Finance and Accounting, the only appointments that have been made are those of Senior Counsel, Assistant to the President, and Secretary. Z. A. Lash, K.C., who was a member of the old board, and also the company's Senior Counsel, but who resigned both positions when Sir Wm. Mackenzie, Sir Donald Mann and other directors retired recently, has been re-appointed as Senior Counsel. In this connection he has also retired from the board of Mackenzie, Mann & Co., so that there can be no conflict of interests. R. C. Vaughan, heretofore Assistant to the Third Vice President, has been appointed Assistant to the President, and R. P. Ormsby, heretofore Assistant Secretary, has been appointed Secretary, vice W. H. Moore, resigned. A number of other changes will doubtless be made, especially in the operating department, and it appears to be probable that one or more vice presidents, without seats on the board, will be appointed in charge of various departments. M. H. MacLeod, General Manager and Chief Engineer, Western Lines, Winnipeg, is mentioned as likely to be made Vice President of Operation at Toronto, in which case he would probably be succeeded at Winnipeg by A. E. Warren, now Assistant to the General Manager there, and who acted for several months recently as Chief Operating Officer for the Railways Department at Ottawa. Vice Presidents for the legal and traffic departments are also



spoken of, but the full organization may be delayed, pending the expected arrangements in connection with the Canadian Government Railways, which will probably be merged with the C.N.R. into one system, and also the possibility of the Grand Trunk Pacific, if not the Grand Trunk also, being taken in later on.

DAVID BLYTHE HANNA, President, was born at Thornliebank, Renfrewshire, Scotland, Dec. 20, 1858, and entered railway service there in 1874, since when he has been, to 1879, clerk and ticket agent, Glasgow, Barrhead & Kilmarnock Ry., at Kinnishead, Pollokshaws and Barrhead; 1879 to 1882, cashier, Stobcross station, Glasgow, Caledonian Ry.; 1882 to 1884, in Auditor's office, and Travelling Auditor, G.T.R., Montreal; 1884 to 1886, clerk, General Auditor's office, New York, West Shore & Buffalo Ry., New York; 1886 to 1892, Chief Accountant, Manitoba & North Western Ry., Winnipeg; 1892 to 1896, Treasurer, and from 1893, also Land Commissioner, same road; 1896 to Nov., 1902, General Superintendent, first of Lake Manitoba Ry. & Canal Co., and afterwards of Canadian Northern Ry., Winnipeg; Nov., 1902, to the date of his present appointment, Third Vice President, Canadian Northern Ry. He has been associated with the Canadian Northern Ry. since its inception, and has been officially connected with all its subsidiary railway companies, now comprising the system.

ALFRED J. MITCHELL, Vice President, was born at Toronto, Sept. 28, 1879, and entered transportation service July 18, 1899, since when he has been, to Jan., 1902, chief clerk, Mackenzie, Mann & Co.; Jan., 1902, to Jan., 1904, accountant, same company; Jan., 1904, to July, 1908, Assistant Comptroller, same company; July, 1908, to Sept., 1918, Comptroller, same company; July, 1912, to Sept., 1918, also Assistant to Vice President, Canadian Northern Ry., all at Toronto.

MAJOR G. A. BELL, C.M.G., director, is acting Deputy Minister of Railways and Canals. Biographical data and portrait were published in our August issue, pg. 339.

C. M. HAMILTON, director, is a farmer at Weyburn, Sask., and is specially interested in the transportation problems connected with that industry. He is President of the Union of Rural Municipalities.

ROBERT HOBSON, director, is a son of the late Joseph Hobson, formerly Chief Engineer, G.T.R., and was born at Berlin, Ont., Aug. 31, 1861. He was engaged in railway work for several years on the Great Western Ry. and G.T.R., and in 1876 was appointed Secretary-Treasurer of the Hamilton Blast Furnace Co., the first producers of pig iron in Ontario. This company has since developed into the Steel Co. of Canada, of which he is President. He is also associated with several financial and industrial concerns, including the Bank of Hamilton and the Canadian Locomotive Co., being a director of both of these.

F. P. JONES, director, was born at Brockville, Ont., Nov. 5, 1869, and educated there and at Kingston, Ont. He was for many years in the Nova Scotia Steel & Coal Co.'s service, becoming Sales Manager, and subsequently transferred to the Dominion Iron & Steel So. in a similar capacity, eventually becoming Manager. He was later appointed Vice President and General Manager, Canada Cement Co. Since the outbreak of war, he has acted as Vice Chairman of the War Trade Board.

R. T. RILEY, director, was born in Yorkshire, Eng., July 1, 1851, and came to Canada in 1875, and for some years

was engaged in farming in Ontario. He removed to Manitoba in 1881, where he has since been associated with a number of industrial, insurance and financial concerns, including the Northern Trust Co., of which he is President. He was one of the organizers, and is a director of the Great West Life Assurance Co., director, Union Bank of Canada, and a manager of the Winnipeg Stock Exchange.

E. R. WOOD, director, was born at Peterborough, Ont., May 14, 1866, and was educated there. He commenced business life as a telegraph operator, and subsequently entered the office of the Central Canada Loan and Savings Co., of which he became Vice President and General Manager. He is also President, Dominion Securities Corporation; Vice President, National Trust Co.; Director, Crow's Nest Pass Coal Co., Canadian Bank of Commerce, Western Assurance Co., Canada Life Assurance Co., Sao Paulo Tramway, Light & Power Co., Mexican Light & Power Co., and other industrial and financial concerns.

R. C. VAUGHAN, Assistant to President, was born in Toronto, Dec. 1, 1883, and entered railway service Oct. 3, 1898, since when he has been, to Mar., 1902, office boy, clerk and stenographer, General Freight Agent's office, C.P.R., Toronto; July to Dec., 1902, in Freight Department, G.T.R., Toronto; Jan., 1903, to July 1, 1910, clerk, secretary to Third Vice President and General Manager, and chief clerk to Third Vice President, Canadian Northern Ry., Toronto; July 1, 1910, to date of present appointment, Assistant to Third Vice President.

#### Changes in Offices, Etc.

There appears to be little doubt that the C.N.R. head office will remain in Toronto, unless a change should be determined on if the C.N.R. and the Canadian Government Railways are merged, and the Grand Trunk Pacific and possibly the Grand Trunk also taken in. The Winnipeg Board of Trade has started a movement in favor of the removal of the headquarters to that city, but this is not likely to take place.

President D. B. Hanna is moving down one floor in the general office building, 1 Toronto St., to the room occupied heretofore by Sir Wm. Mackenzie, and his Assistant, R. C. Vaughan, and immediate staff, will be located in adjoining rooms. Sir Donald Mann's former office will be used as a board room.

Sir Wm. Mackenzie and Sir Donald Mann have moved into offices at 43 Victoria St., Toronto, and among their staff who have moved with them are: R. G. O. Thomson, heretofore Assistant Comptroller, and now Comptroller, Mackenzie, Mann & Co., Ltd.; F. C. Annesley and C. E. Buckley, private secretaries to Sir William and Sir Donald, respectively. The Canadian Land & Investment Co. will also have its offices at 43 Victoria St. Lewis Lukes, heretofore Assistant to President, C.N.R., who is connected with several of Sir Wm. Mackenzie's interests, has moved his office to 95 King St. East, Toronto.

Grand Trunk Ry.—A London, Eng., cable of Sept. 12 says the G.T.R. has issued £3,000,000 of 3-year 6% notes at 99, partly to replace an issue of £2,000,000 of 5% notes maturing shortly.

The Michigan Central Rd. is reported to have made an arrangement for the operation of certain of its freight trains over a section of the Toronto, Hamilton & Buffalo Ry., which necessitates the removal of a number of train crews from St. Thomas to Bridgeburg, Ont.

### Canadian Northern Railway Earnings, etc.

Gross earnings, working expenses, net earnings, increases and decreases compared with those of 1917, from July 1, 1918.

	Gross earnings.	Expenses.	Net Earnings.	Decreases.
July	\$3,739,400	\$3,462,700	\$276,700	\$628,200
	\$3,739,400	\$3,462,700	\$276,700	\$628,200
Incr.	.....	\$ 522,700	.....	.....
Decr.	\$ 105,500	.....	\$628,200	.....

Approximate earnings for August, \$3,933,300, against \$3,405,200 for August, 1917.

### Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, compared with those of 1917, from Jan. 1, 1918:

	Gross earnings.	Expenses.	Net Earnings.	Decreases.
Jan.	\$10,789,818	\$9,621,824	\$1,167,993	\$1,263,485
Feb.	9,574,302	8,983,404	590,898	1,396,151
Mar.	12,427,915	9,435,134	2,992,781	944,536
Apr.	13,328,849	9,873,459	3,455,390	719,588
May	13,314,117	9,626,341	3,687,776	863,944
June	12,577,286	9,765,139	2,812,147	1,103,759
July	12,374,165	10,204,153	2,170,012	1,589,995

	\$84,386,451	\$67,509,455	\$16,876,996	\$7,880,460
Incr.	.....	\$ 7,532,274	.....	.....
Decr.	\$ 348,186	.....	\$ 7,880,460	.....

Approximate earnings for August, \$12,713,000, against \$12,414,537 for August, 1917.

### Grand Trunk Railway Earnings.

	Gross earnings.	Expenses.	Net earnings.	Increases or Decreases.
Jan. to June	\$26,162,127	\$25,855,560	\$ 306,567	*\$4,652,063
July	5,788,482	4,358,163	1,430,319	214,767

	\$31,950,609	\$30,213,723	\$1,736,886	*\$44,37,301
Incr.	\$ 2,899,121	\$ 7,345,421	.....	.....
Decr.	.....	.....	\$4,437,301	.....

\*Decrease.  
Approximate earnings for August, \$6,106,615, against \$4,784,269 for August, 1917.

### Grand Trunk Pacific Ry. Earnings.

Earnings for July, \$437,847, against \$469,980 for July, 1917; approximate earnings for three weeks ended Aug. 21, \$301,921, against \$362,783 for same period 1917.

### Dominion Transport Co's Organization.

The following changes have been made in the organization of the Dominion Transport Co.:—

G. R. Starke, heretofore Vice President and Managing Director, has been elected President and Managing Director. Office, Montreal.

J. A. Cantlie, Montreal, has been elected Vice President.

The other directors are Lieut.-Col. Michie and Hugh Mackay.

F. L. Miller is Secretary-Treasurer.

W. J. Langton, heretofore Superintendent, Toronto, has been appointed General Manager. Office, Montreal.

R. H. Walker, heretofore agent, Ottawa, Ont., has been appointed Superintendent, Toronto.

Geo. Preston has been appointed agent, Ottawa, Ont.

W. J. Langton, General Manager, was born at Toronto, entered the company's service about 30 years ago, and was Superintendent at Toronto for about 13 years. While in Toronto, he was associated with several local organizations, and is President of the Toronto Transportation Club.

The Canadian Ticket Agents' Association will hold its 32nd annual meeting and outing at Buffalo, N.Y., Oct. 9, 10 and 11.



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NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.

ADVERTISING COPY must reach the publishers by  
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TORONTO, CANADA, OCTOBER, 1918.

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## The Canadian Northern Railway's Presidency.

The Dominion Government has made a good start in the reorganization of the C.N.R. management. For some time it was feared that political considerations might prevail, and that a politician, without practical railway experience, would be appointed either chairman of the board or possibly as President. Such an appointment would have been a national calamity, and there was a good deal of public apprehension in regard to it. Sir Robert Borden allayed this somewhat, when he stated at the Toronto Exhibition directors' luncheon, on Sept. 9, that there must be no party political interference in the management of the road, and there was a general feeling of relief when it was announced on Sept. 18 that a board of business men had been appointed, and that D. B. Hanna had been elected President, thus ensuring a business administration of the second largest Canadian railway system.

It is eminently fitting that Mr. Hanna, who in 1896 was the first official of the little Lake Manitoba Ry. & Canal Co., the nucleus of the present C.N.R. system, should have been chosen as its chief executive. He is acquainted with every detail of the building up of the system, and has been responsible for years for its operation and for many other branches of its organization. Laboring under difficulties that many men would have found insurmountable, he has carried on the operation in a most economical way and has proved himself a most capable administrator. During the recent arbitration proceedings, he surprised even his most intimate friends by his thorough knowledge of every phase of the company's operations—finance, construction and operation.

Mr. Hanna enjoys to an extraordinary degree the confidence and respect of the thousands of men on the C.N.R. pay rolls, and will undoubtedly receive an enthusiastic loyalty from them that no outsider could hope to secure. He is also very popular with other railway officials, and with the large number of the general public with whom he has come in contact, and we believe that now he has a free hand and can carry out his own ideas as to organization, etc., he will produce satisfactory results.

Of one thing the public need have no fear. Mr. Hanna will serve the new owners of the road—the people—as loyally and enthusiastically as he served its private owners, and no man could do more.

## Character Sketch of D. B. Hanna.

Following are extracts from an article published in the Toronto Globe in 1911:

You may call him, if you choose, prime minister to the dual monarchy that reigns over the Canadian Northern Ry. System. You may regard him as the foster mother of the score or more enterprises in which these potentates are engaged. You may speak of him as one of the big men of the country, wealthy, respected and influential, or you may point to him as the steady yet agile climber up the slippery rungs of the ladder of success. And yet in the end you will get back to describing him simply as the warm hearted, genial Scotchman, David Blythe Hanna, unspoiled and unchanged by all the honors that have fallen to his lot.

D. B. Hanna was Treasurer of the Manitoba & Northwestern Ry., with headquarters in Portage la Prairie, when William Mackenzie first ran across him. Mac-

kenzie was building the comparatively insignificant road from Gladstone to Dauphin, which was to form the nucleus of the Canadian Northern. He wanted a Superintendent, and a friend recommended Hanna, with the result that the brilliant promoter and the no less brilliant administrator joined hands.

The early days of the Canadian Northern, when Hanna was simply Superintendent of the little Lake Manitoba Ry. & Canal Company, form quite a contrast to the era that has since dawned. Those were the times when thirteen men and a boy were said to have been a sufficient force to operate the entire system. It was a period of vicissitude, when versatility was required, and faith and enthusiasm. Through it all D. B. Hanna plodded along, working overtime and inspiring courage in his subordinates.

His earlier career had all along been associated with railroading, in one form or another. Born at Thornliebank, Renfrewshire, Scotland, on December 20, 1858, he entered the service of the Glasgow, Barrhead & Kilmarnock Ry., at the age of 16, as ticket agent. In 1879 he transferred his services to the Caledonian Ry., becoming cashier at Stobcross station, in Glasgow. Emigrating in 1882, he first served two years in the Auditor's office of the Grand Trunk in Montreal, and then two years in the Auditor's office of the New York, West Shore & Buffalo Ry. in New York. In 1886 he joined the Manitoba & Northwestern Railway as Chief Accountant, becoming its Treasurer in 1892, and also Land Commissioner a year later. Just 15 years ago he became Superintendent of what was to become the Canadian Northern Ry., and in 1902 received the appointment of Third Vice-President.

In dealing with a man of Mr. Hanna's character, it is quite impossible to avoid the laudatory style of treatment. As one of his intimates remarked, "You can't tell much about Hanna, because he hasn't any faults." Among the several hundred men in the head offices of the C.N.R. in Toronto he is almost an object of worship. "There isn't a man among us who wouldn't die for him," was the somewhat extravagant assertion of one enthusiast, which may be taken as a fair indication of the esteem in which he is held. And this feeling extends outside to the other employes of the road. Even labor agitators, who might sometimes be expected to adopt a hostile attitude, have only good words to say for him.

When it comes to working, he does not believe in the eight-hour day—that is, for himself. It is no unusual thing for him to put in nine or ten hours at his desk, and throw in Saturday afternoons to boot, when, as he says, he can get a little house-cleaning done. On Sundays—well, of course, being a good Scotch Presbyterian, he doesn't indulge his hobby on the Sabbath. As for holidays, the frequent inspection trips which he must needs take, and almost annual voyages to England, provide sufficient variety, in his opinion, to make it possible to dispense with more formal vacations altogether. With so much of his time devoted to work, he is able to achieve wonders, getting through an immense amount of routine, and being interviewed by sometimes as many as fifty people a day.

The Third Vice-President of the C.N.R. is a big man, towering well over the 6-mark. Since he has seen fit on several occasions to joke about his appearance, it will not be derogatory to state that, like most men, he is not exactly in the Adonis class. One of his amusing reminiscences of his early life in Scotland has



to do with the time when he was a ticket-seller on the Glasgow & Kilmarnock Ry. An old lady presented herself before his wicket to buy a ticket to Glasgow.

"And sae ye're Janet Blair's boy?" said she.

"Aye," he assured her; "she's my mither."

"Weel, weel," mused the old lady, "a fine-lookin' woman is Janet Blair—but, lawks, ye're no a bit like her."

Looks, however, are only skin deep, and one need not be long in Mr. Hanna's company to find that his smile reveals a winsome personality, and his laugh a deep well of good spirits. Men who have travelled with him when the restraints of business have been relaxed find in him a prince of good fellows, an excellent story teller, and, what is just as much to the point, an appreciative listener. At the proper time, too, he can sing a Scotch song with almost as good effect as Harry Lauder, minus, of course, the theatrical trappings.

This vocal gift is, perhaps, the one unique feature about D. B. Hanna on which his biographer will be able to seize with particular satisfaction. It affords just that delightful little bit of contrast that is so essential to a good pen portrait. When the young Scotchman landed in Portage la Prairie his abilities in this direction were early recognized, and he was inveigled into taking charge of the choir in the Presbyterian church. His career as choirmaster is historic—it is inseparable from the story of his life. Whatever else may be forgotten, no one who attempts to outline his life omits this experience. Associated with it is the story of his discovery of Miss Edith Miller, the talented Canadian prima donna, who was a member of his choir, and who owes not a little of her success to his encouragement.

While Mr. Hanna no longer sings in a church choir, he has by no means lost his voice or his love for music. He is a regular attendant at Massey Hall concerts, and is Vice-President of the National Chorus. At the memorable banquet tendered to Sir William Mackenzie in Halifax on the occasion of the arrival of the first Canadian Northern liner from Bristol, he was present, and made one of the best speeches of the evening. Later on it was softly whispered that he had a very sweet voice, and that he was equally at home singing a hymn or a love song. There was a cry for a song from him, the doors being barred to prevent an escape. When he found there was no way to avoid it he surrendered, and delighted the crowd by singing that sweet little Scotch ballad, "I Love a Lassie." He was encored time and again. After it was over a mild mannered old Presbyterian was heard to say: "My! I would dearly love to hear him sing 'A Few More Years Shall Roll.'"

It was in connection with this incident, Mr. Hanna avers, that he had the most amusing experience in his life. He had retired in the small hours of the night, and was just getting to sleep, when the telephone in his room rang. He answered it, and found, as so often happens, that the voice at the other end of the line belonged to a man who had some favor to ask. This individual prefaced his request by saying: "I'm afraid you don't know me, Mr. Hanna, but I heard you sing to-night." Surely this was a tribute to his abilities as a singer.

Mr. Hanna can be termed neither a sport nor a club man. While he is a member of some dozen clubs in Toronto, Ottawa, Winnipeg and elsewhere, he prefers the comforts and pleasures of home life to the best that any club can afford. You

may see him lunching any day at the Albany or the National or the Toronto, but once the day's work is over he is off in one of his motors to his home in Rosedale, where he dines en famille and spends the evening reading or playing billiards with any friend who may chance to drop in.

He is a solid type of citizen, this big Scotch-Canadian, to whose speech the burr of his native land still clings tenaciously. His success has been due not so much to any brilliant series of achievements as to steady, conscientious work, involving a mastery of detail that would appal most minds. Couple with this those other qualities of heart and mind which have endeared him to a wide circle of friends and you have a character worthy to be pointed out as a fitting example for the rising generation.—W. A. Craick.

## Traffic Orders by the Board of Railway Commissioners.

### Standard Freight Tariffs.

General order 249. Aug. 31. Re application of undermentioned railway companies for approval of their standard freight tariffs of maximum mileage tolls. The said freight tariffs having been filed on the basis prescribed by order in council, 1863, July 27, 1918, it is ordered that the following tariffs be approved; the rate scales of the said tariffs to be published in at least two consecutive weekly issues of the Canada Gazette and preceded by the following notice:—"The undermentioned standard freight tariffs having been filed for the approval of the Board of Railway Commissioners for Canada, and being found by the board to be in accordance with order in council approved by general order of the board no. 249, August 31, 1918, the rate scales thereof are hereby published as required by sec. 327 of the Railway Act."

	C.R.C. No.
Algoma Central & Hudson Bay	478
Algoma Eastern Ry.	223
Atlantic, Quebec & Western Ry.	26
Boston & Maine Rd.	1908
Canadian Northern Ry.	W1132
Canadian Northern Ry.	E1102
Canadian Pacific Ry.	W2392
Canadian Pacific Ry.	E3543
Central Vermont Ry.	1295
Dominion Atlantic Ry.	576
Edmonton, Dunvegan & British Columbia Ry.	86
Essex Terminal Ry.	484
Esquimalt & Nanaimo Ry.	402
Glengarry & Stormont Ry.	93
Grand Trunk Ry.	E3957
Grand Trunk Pacific Ry.	298
Great Northern Ry.	—
Manitoba, Great Northern Ry.	1424
Brandon, Saskatchewan & Hudson Bay Ry.	1425
Crows Nest Southern Ry.	1423
New Westminster Southern Ry.	—
Nelson & Fort Sheppard Ry.	—
Vancouver, Victoria & Eastern Ry. & Navigation Co.	1430
Red Mountain Ry.	—
Kettle Valley Ry.	—
Victoria & Sidney Ry.	V54
Halifax & South Western Ry.	F64
Kettle Valley Ry.	174
Maine Central Rd.	C1566
Michigan Central Rd.	2812
Napierville Junction Ry.	198
New York Central Rd.	1650
New York Central Rd.	1681
Pere Marquette Ry.	2215
Quebec, Montreal & Southern Ry.	661
Quebec Oriental Ry.	37
Temiscouata Ry.	328
Toronto, Hamilton & Buffalo Ry.	1227

### Interswitching of Freight Traffic.

General order 250, Sept. 16.—Re general order 230, May 17, 1918, in matter of freight traffic, and general order 243, July 25, 1918, postponing effective date of general order 230 until Oct. 1, 1918. Upon reading what is filed by the Canadian Manufacturers' Association, and upon its request for further postponement of the effective date of general order 230, it is ordered that the effective date of

general order 230 be further postponed until Nov., 1918.

### Rates on Caps and Hats.

27550. Aug. 1.—Re complaint of David Spencer Limited, Vancouver, against the interpretation placed by railway companies on item 240, page 59, Canadian Freight Association Westbound Tariff no. 1, reading inter alia "Hats and caps (other than millinery) taking first class rating in current Canadian Freight Classification as applied to shipments of women's hats with plain band and binding only from Eastern Canada to Vancouver. Upon hearing the complaint at Vancouver, June 6, the complainant, the Canadian Pacific, Canadian Northern, and the Grand Trunk Pacific Railways being represented, and upon reading the report of the board's Chief Traffic Officer, it is declared that the proper rates on the shipments in question were the rates appearing in item 240 of Canadian Freight Association's Westbound Tariff no. 1, effective Sept. 20, 1916.

### Service on Private Siding.

27522. Aug. 26.—Re application of New Minas Fruit Co. of White Rock, N.S., for an order directing the Dominion Atlantic service on the applicant company's siding without any charge in excess of the regular freight rates and that the railway return charges unjustly collected for the upkeep of the siding. Upon hearing the application at Kentville, N.S., July 4, in the presence of counsel for the applicant company and the railway company, and upon its appearing that the board is without jurisdiction in the matter, it is ordered that the application be dismissed.

### North Mountain Ry. Passenger Tariff.

27702. Granting application of Dominion Atlantic Ry. Co. for approval of Standard Passenger Tariff C.R.C. 1 of North Mountain Ry. on the basis of 3.45c a mile.

### Canadian Northern Ry. Rates on Wood Pulp.

27568. Aug. 16. Re complaint of Minnesota & Ontario Power Co., of International Falls, Minn., against increased rates on pulpwood from Canadian Northern Ry. stations to International Falls, as shown in C.N.R. tariff W-2051, C.R.C. W-1101, effective May 18, 1918: Upon hearing the complaint at Fort Frances, June 18, the complainant and the C.N.R. being represented, and upon the report of the board's Chief Traffic Officer, it is ordered that the complaint be dismissed.

### Bills of Lading for Grain at Fort William and Port Arthur.

27,715. Sept. 27. Re complaint of Bole Grain Company, Fort William, Ont., that the C.P.R. refuses to issue bills of lading for grain weighed by the government weighing department except with the provision "Shipper's load and count." Upon hearing the complaint at Port Arthur, June 19, 1918, the Fort William and Port Arthur Grain Exchange, the Canadian Pacific, Canadian Northern and Grand Trunk Railways and the Ogilvie Flour Mills being represented, no one appearing for the complainant, and what was alleged, and upon reading the further written submissions filed, it is ordered that the complaint be dismissed.

A press report states that as a result of the disapproval by the Director General of United States Railroads of railways operating over leased lines, it is probable that the Wabash Rd. may have to cease operating in Canada. The Wabash operates over the Grand Trunk Ry.'s old air line under a lease which expires in 1919.



## Mainly About Railway People Throughout Canada.

**L. M. Conroy**, ticket clerk, C.P.R., Halifax, N.S., was presented with a travelling bag recently, on resigning from the service.

**M. J. O'Brien**, railway contractor, and President, Canada & Gulf Terminal Ry., Ottawa and Renfrew, Ont., has been appointed a senator.

**R. Home Smith**, President, Algoma Central & Hudson Bay Ry., and one of the Toronto Harbor Commissioners, has been appointed Fuel Commissioner for Ontario.

**A. E. Doucet**, formerly District Engineer, National Transcontinental Ry., Quebec, Que., has resigned as President, St. Maurice Mines Co., and has been elected Vice President.

**G. C. Martin**, General Traffic Manager, Toronto, Hamilton & Buffalo Ry., was one of the speakers at the Canadian National Exhibition directors' luncheon at Toronto, Sept. 3.

**U. E. Gillen**, Vice President, G.T.R., who was taken ill suddenly at Trenton, Mich., about the middle of September, was reported Sept. 24, to be much better, and resting at his home.

**E. McDonald**, General Baggage Agent, Grand Trunk Pacific Ry., Winnipeg, has returned to duty, after an absence of a few weeks, having received a military discharge as unfit for active service.

**H. C. Grout**, General Superintendent, New Brunswick Division, C.P.R., St. John, N.B., received news of the death of his father, A. C. Grout, Manager, First National Bank, Wausau, Wis., recently.

**A. B. Eldredge**, President and General Counsel, Duluth, South Shore & Atlantic Ry., Marquette, Mich., was found dead in his bed at the Manhattan Hotel, New York, Sept. 9. The cause of death is given as internal haemorrhage.

**W. B. Lanigan**, whose appointment as Freight Traffic Manager, C.P.R., Montreal, was announced in our last issue, was entertained to luncheon in Winnipeg recently by local C.P.R. officials, on leaving for the east to take up his new duties.

**W. H. Biggar**, K.C., Vice President and General Counsel, and **Frank Scott**, Vice President and Treasurer, G.T.R., have been appointed, by a court order, trustees for the Toronto Belt Line Ry. Co. mortgage holders, in place of W. S. Lee and C. S. Czowski, deceased.

**W. H. Newman**, President, New York Central Lines, from 1901 to 1909, died Aug. 14, aged 71. He commenced railway service in 1869. On his resignation as President, in 1909, he took personal charge of the plans of the Grand Central terminal in New York, becoming responsible for the carrying out of the work.

**John Vass**, who has been appointed Assistant to Superintendent of Motive Power, Ontario Lines, G.T.R., Allandale, Ont., was born at Braidwood, Scotland, and went to the U.S. in 1888, and was, to 1894, locomotive fireman, Wabash Rd., Chicago, Ill.; 1894 to 1895, locomotive fireman, G.T.R., Battle Creek, Mich.; 1895 to 1903, locomotive man, G.T.R., Battle Creek, Mich.; 1903 to June, 1918, Road Foreman of Locomotives, Nichols, Mich.; June to Sept. 1, 1918, Assistant Master Mechanic, Ontario Lines, Allandale, Ont.

**Edwin Roy Battley**, who has been appointed Superintendent of Motive Power, Eastern Lines, G.T.R., Montreal, was born at Stratford, Ont., Oct. 21, 1886, and entered G.T.R. service, Dec. 1, 1902, since when he has been, to Dec. 1, 1907, machinist apprentice, Stratford, Ont.; Dec. 1,

1907, to Jan., 1909, machinist, Stratford; Jan., 1900, to Mar. 12, 1910, to July 1, 1914, Locomotive Foreman, Fort Erie, Ont.; July 1, 1914, to Sept. 1, 1917, General Foreman, Deering, Me.; Sept. 1, 1917, to Sept. 1, 1918, Master Mechanic, Eastern Lines, Montreal.



**H. R. Safford**,  
Engineering Assistant to Regional Director,  
Central Western District, U.S. Railroad  
Administration.



**W. H. Sample**,  
Superintendent of Motive Power, Grand Trunk  
Western Lines Railroad.

**Herbert Mitchinson**, whose appointment as Safety Engineer, Western Lines, Canadian Government Railways, Winnipeg, was announced in our last issue, was

born at Gateshead-on-Tyne, Eng., Jan. 18, 1882. He was from Mar., 1898, to Mar., 1911, a cabinet maker on the North Eastern Ry., Newcastle, Eng., and from Mar., 1911, to May, 1912, engaged in mechanical work, welding, etc., Armstrong, Whitworth & Co., Elswick Works, Newcastle, Eng. He came to Canada in 1912, and from Sept. of that year to Sept., 1913, was assistant principal of the Indian School, Brandon, Man.; Oct., 1913, to June 30, 1915, First Aid Instructor, Grand Trunk Pacific Ry., Transcona, Man.; July 1, 1915, to Nov., 1916, First Aid Instructor, Canadian Government Railways, Transcona, Man.; Nov., 1916, to July 31, 1918, First Aid Instructor and Safety Inspector, Western Lines, Canadian Government Railways, Transcona, Man.

**Wilmer Herbert Sample**, who has been appointed Superintendent Motive Power, Grand Trunk Western Lines Rd., Detroit, Mich., under the U.S. Railroad Administration, was born at Altona, N.Y., Aug. 20, 1864 and entered railway service Aug. 20, 1882, since when he has been, to 1887, fireman, Central Vermont Ry., St. Albans, Vt.; 1887 to 1890, locomotive man, Atchison, Topeka & Santa Fe Ry., Albuquerque, N.M.; 1890 to 1901, locomotive man, Central Vermont Ry., St. Albans, Vt.; 1901 to 1906, Road Foreman of Locomotives, Central Vermont Ry., St. Albans, Vt.; 1906 to 1911, Superintendent of Motive Power and Car Department, Northern Ry. of Costa Rica (United Fruit Co.), San Jose, Costa Rica; Mar. 15, 1911, to Oct., 1914, Master Mechanic, G.T.R., Ottawa; Oct., 1914, to Oct., 1916, Master Mechanic, G.T.R., Battle Creek, Mich.; Oct., 1916, to Sept. 1, 1917, Master Mechanic, Eastern Lines, G.T.R., Montreal; Sept. 1, 1917, to Aug. 26, 1918, Superintendent of Motive Power, G.T.R., Montreal.

**F. X. Belanger**, after 22 years service with the Temiscouata Ry., latterly as General Freight and Passenger Agent at Riviere du Loup, Que., resigned recently on his appointment as Traffic Manager, Fraser Companies, Limited, with office at Edmundston, N.B. This is a \$10,000,000 concern, owned by two brothers, and which operates 9 lumber mills, 3 planing mills and 2 shingle mills at various points in New Brunswick and Quebec, in addition to which it is just completing the erection of a sulphite mill at Edmundston, which will be the second largest in North America, with a capacity of 140 tons a day. The company has large tracts of timber limits in Nova Scotia and Quebec not yet developed. In writing recently to have his address changed, Mr. Belanger said: "While I have left railway service, I still wish to keep in close touch with railway matters and know of no better medium than Canadian Railway and Marine World, of which I have been a constant reader almost ever since its inception."

**H. R. Safford**, who has been appointed Engineering Assistant, Central Western Region, U.S. Railroad Administration, Chicago, Ill., was born at Madison, Ind., in 1875, and prior to graduation in civil engineering from Purdue University in 1895, was engaged with an engineering corps operating on the Pennsylvania lines immediately west of Pittsburgh, Pa. In 1895 he entered Illinois Central Rd. service, remaining with it until May, 1910, and holding the following positions: 1895, rodman; 1896 to 1897, Resident Engineer; 1897 to 1900, Assistant Engineer; 1900



to 1901, Roadmaster, Amboy Division; 1901, Roadmaster, Freeport Division; 1902, Roadmaster, St. Louis Division; 1903 to 1905, Principal Assistant Engineer; 1905 to 1907, Assistant Chief Engineer; 1907 to 1910, Chief Engineer, Maintenance of Way. From 1910 to Oct., 1911, at which latter date he was appointed Chief Engineer, G.T.R., Montreal, he was not in railway service.

J. Mitchell Silliman, who has been appointed Division Engineer, Maintenance

of Way, Susquehanna Division, Delaware & Hudson Rd., Oneonta, N.Y., was born at Easton, Pa., Sept. 8, 1885, and entered C.P.R. service in June, 1907, since when he has been, to Aug., 1907, leveller, right of way survey, Atlantic Division; Aug. to Dec., 1907, transit man, District 2, Atlantic Division; Jan. to Apr., 1908, rodman on reconnaissance survey, Lake Superior Division; May, 1908, to Oct., 1909, transit man, District 1, Atlantic Division; Nov., 1909, to Mar., 1910, transit man, District

1, Lake Superior Division; Mar., 1910, to Mar., 1911, transit man, District 3, Lake Superior Division; Mar., 1911, to Sept., 1912, Resident Engineer, Construction Department, Guelph Jct. to Hamilton, Ont.; Sept., 1912, to Mar., 1915, Resident Engineer in charge of construction of Forsyth St. branch, Montreal; Mar. to Dec., 1915, District Engineer on construction, in charge of Lake Erie & Northern Ry.; Jan., 1916, to Sept. 3, 1918, Resident Engineer, London, Ont.

## Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**British Ministry of Shipping.**—SIR ARTHUR H. HARRIS, formerly Special Traffic Representative, C.P.R., and latterly Director of Overseas Transport, is reported to have been appointed Director General for Canada, British Ministry of Shipping.

**Canada Atlantic Transit Co. of United States.**—The duties hitherto performed by C. A. GORMALY, Commercial Agent, Chicago, Ill., and H. W. PLOSS, Commercial Agent, Milwaukee, Wis., are now performed by J. B. HECKENDORN, Agent, Chicago, Ill.

**Canadian Government Railways.**—J. E. STEWART has been appointed Locomotive Foreman, Hearst, Ont., vice C. W. Wilson, on leave of absence for military service.

W. H. FLETCHER, heretofore with Dominion Copper Products Co., Montreal, has been appointed Locomotive Foreman, Sioux Lookout, Ont., vice C. H. Moulton, transferred.

C. H. MOULTON, heretofore Locomotive Foreman, Sioux Lookout (formerly Graham), Ont., has been appointed Locomotive Foreman, Transcona, Man.

**Canadian Northern Ry.**—D. B. HANNA, heretofore Third Vice President, has been elected President, vice Sir Wm. Mackenzie, resigned.

SIR DONALD MANN, Vice President, has resigned.

A. J. MITCHELL, heretofore Assistant to Vice President, C.N.R., and Comptroller, Mackenzie, Mann & Co., Ltd., has been appointed Vice President, Finance and Accounting, C.N.R. Office, Toronto.

R. C. VAUGHAN, heretofore Assistant to the Third Vice President, has been appointed Assistant to the President, Office, Toronto.

LEWIS LUKES, heretofore Assistant to the President, Sir Wm. Mackenzie, has left the company's service.

Z. A. LASH, K.C., heretofore director and Senior Counsel, has been appointed Senior Counsel, Office, Toronto.

R. P. ORMSBY, heretofore Assistant Secretary, has been appointed Secretary, vice W. H. Moore, resigned. Office, Toronto.

G. DUFF has been appointed Roadmaster, Montreal Division, with jurisdiction over Joliette Subdivision, Aldred to Montreal, Hawkesbury Subdivision, Joliette to Rinfret, Montfort Subdivision and Rawdon Subdivision, Quebec District. Headquarters, Montreal.

A. E. WARREN, who was in Ottawa for several months as Chief Operating Officer, Railways and Canals Department, has returned to Winnipeg and resumed his duties as Assistant to General Manager, Western Lines, C.N.R.

**Canadian Pacific Ry.**—P. J. MELVIN, heretofore chief clerk to Export Freights

Agent, has been appointed acting Export Freight Agent, Montreal, G. D. ROBINSON, Export Freight Agent, having entered the service of the British Ministry of Shipping (Canada).

C. S. GOWANS, heretofore chief clerk to Import Freight Agent, has been appointed acting Import Freight Agent,



W. B. Lanigan,  
Freight Traffic Manager, Canadian Pacific  
Railway.

Montreal; W. T. MARLOW, Import Freight Agent, having entered the service of the British Ministry of Shipping (Canada).

G. H. DAVIS, Resident Engineer, Toronto Terminals, is reported to have been appointed Assistant Engineer, Maintenance of Way, Eastern Lines, Montreal.

J. P. DOHERTY, in Canadian Pacific Ocean Services' employ, is reported to have been appointed Travelling Freight Agent, C.P.R., St. John, N.B., vice J. E. Green.

H. J. MAIN, heretofore Assistant Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Assistant Superintendent, Farnham Division, Quebec District, vice W. J. Pickrell, promoted. Office, Farnham, Que.

J. A. COOK has been appointed Assistant Superintendent, Smiths Falls Division, Quebec District, vice H. J. Main, transferred. Office, Smiths Falls, Ont.

R. E. SEWELL, Chief Inspector of

Transportation, Montreal, is acting as Superintendent, Ontario District, Trenton, during the absence of W. J. UREN, on leave.

U. A. G. DEY, Assistant Engineer of Construction, is reported to have been appointed Assistant Engineer of Toronto Terminals, vice G. H. Davis, Resident Engineer, promoted.

A. L. MCGREGOR has been appointed Car Foreman, Sudbury, Ont., vice C. Brownlee.

**Delaware & Hudson Rd.**—J. M. SILLIMAN, heretofore Resident Engineer, C. P.R., London, Ont., has been appointed Division Engineer in charge of maintenance of way forces, Susquehanna Division, D. & H.R., under the U.S. Railroad Administration, vice H. S. Rogers, resigned. Office, Oneonta, N.Y.

**Duluth, South Shore & Atlantic Ry.**—The following appointments have been made by the U.S. Railroad Administration:—C. E. LYTLE, General Superintendent, Marquette, Mich.; S. R. LEWIS, General Freight Agent, Duluth, Minn.; JAMES MANEY, General Passenger Agent, Duluth, Minn.; A. E. MILLER, heretofore General Attorney, to be General Solicitor, Marquette, Mich.; E. R. LEWIS, heretofore Assistant to General Manager, to be Chief Engineer, Marquette, Mich.; I. H. HARSH, Purchasing Agent, Duluth, Minn.; A. E. DELF, heretofore Comptroller, to be Federal Auditor, Marquette, Mich.; W. J. ELLISON, heretofore Treasurer, to be Federal Treasurer, Marquette, Mich.

**Grand Trunk Ry.**—E. R. BATTLE, heretofore Master Mechanic, Eastern Lines, Montreal, has been appointed Superintendent of Motive Power, Eastern Lines. Office, Montreal.

G. M. WILSON, heretofore Master Mechanic, Montreal shops, has been appointed Superintendent of Motive Power Shops, Montreal.

A. McDONALD has been appointed Assistant to Superintendent of Motive Power Shops, Montreal.

R. J. NEEDHAM has been appointed Mechanical and Electrical Engineer, Motive Power and Car Department, Office, Montreal.

D. J. McCUAIG, heretofore Master Mechanic, Ontario Lines, Toronto, has been appointed Superintendent of Motive Power, Ontario Lines. Office, Toronto.

JOHN VASS, heretofore Assistant Master Mechanic, Ontario Lines, Allandale, Ont., has been appointed Assistant to Superintendent of Motive Power, Ontario Lines. Office, Allandale, Ont.

J. C. GARDEN, heretofore Master Mechanic, Stratford Shops, Ont., has been appointed Superintendent of Motive Power Shops, Stratford, Ont.

J. R. LECKIE, heretofore Assistant Master Mechanic, Ontario Lines, London, Ont., has been appointed Assistant to Superintendent of Motive Power, Ontario Lines. Office, London, Ont.



C. A. SAYLER has been appointed Locomotive Foreman, Sarnia, Ont., vice J. Hay, whose appointment as Master Mechanic, G.T.R. Lines in New England, at Portland, Me., under the U.S. Railroad Administration, was announced in our last issue.

**Grand Trunk Pacific Ry.**—R. M. HALPENNY, heretofore Assistant Superintendent, Jasper, Alta., has been appointed Superintendent, lines between Edmonton, Alta., and Prince George, B.C., not including Edmonton, vice J. P. Kirkpatrick, resigned. Office, Edson, Alta.

S. SMITH, heretofore Resident Engineer, Melville, Sask., has been appointed Assistant Superintendent, Edson Division, Edson, Alta.

**Grand Trunk Ry. Lines in New England.**—C. B. WEISS, heretofore Assistant Engineer, Montreal Division and Montreal Terminals, G.T.R., has been appointed Assistant Engineer, G.T.R. Lines in New England, under the U.S. Railroad Administration, not Chief Engineer, as mentioned in our last issue. Office, Portland, Me.

H. L. BLACK has been appointed Superintendent of Signals, under the U.S. Railroad Administration. Office, Portland, Me.

**Grand Trunk Western Lines Rd.**—W. H. SAMPLE, heretofore Superintendent of Motive Power, G.T.R., Montreal, has been appointed Superintendent Motive Power, G.T.W.L. Rd., under the U.S. Railroad Administration. Office, Detroit, Mich.

T. T. IRVING, heretofore Division Engineer, G.T.R., Chicago, Ill., has been appointed Chief Engineer, G.T.W.L. Rd. Office, Detroit, Mich.

G. BRADSHAW, heretofore Safety Engineer, G.T.R. and G.T.P.R., Toronto, has been appointed Safety Engineer, G.T.W.L. Rd., Detroit, Mich.

**Grand Trunk Western Lines Rd.—Pere Marquette Ry.**—The following appointments have been made jointly for these railways, under the U.S. Railroad Administration:—J. L. CRAMER, Local Treasurer; C. S. SIKES, General Auditor; J. O. TALBOTT, Assistant General Auditor; A. C. RHODES, General Accountant; F. HORTON, Auditor Station Accounts; K. A. KARLSON, Auditor Disbursements; P. HEITMANN, Assistant Auditor Disbursements; A. J. ANDERSON, Auditor Freight Traffic; C. E. CONNALLY, Assistant Auditor Freight Traffic; F. W. NEIMANN, Auditor Passenger Traffic; H. F. FARRELL, Auditor Overcharge Claims; all with offices at Detroit, Mich.

**Minneapolis, St. Paul & Sault Ste. Marie Ry.**—The following appointments have been made by the U.S. Railroad Administration:—W. L. MARTIN, heretofore Vice President (Traffic Department), to be Traffic Manager; H. B. DIKE, heretofore Assistant to the President and General Solicitor, to be General Solicitor; E. A. WHITMAN, Chief Engineer; E. T. STONE, Purchasing Agent; C. W. GARDNER, heretofore Comptroller, to be Federal Auditor; C. F. CLEMENT, heretofore Treasurer, to be Federal Treasurer; all with offices at Minneapolis, Minn.

**New York Central Rd.**—The following appointments have been made by the U. S. Railroad Administration:—HARRY PARRY, heretofore Assistant General Passenger Agent, Buffalo, N.Y., has been appointed General Passenger Agent, lines east of Buffalo, N.Y. Office, New York.

W. S. RANDOLPH has been appointed Assistant General Passenger Agent, Buf-

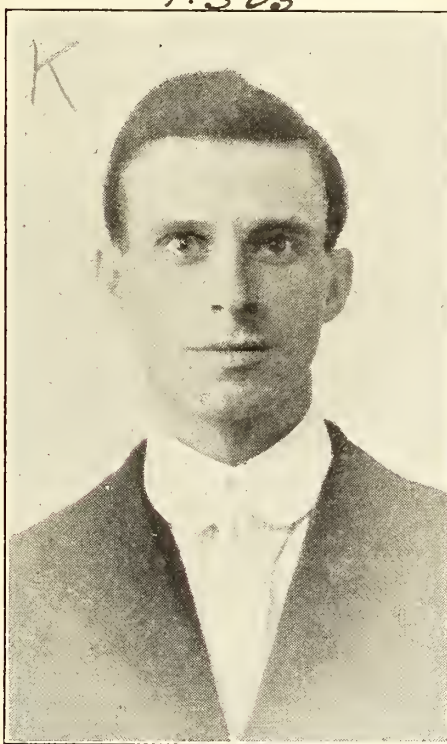
falo and east, Buffalo, N.Y., vice Harry Parry, promoted.

A. L. MILLER has been appointed General Agent, Albany, N.Y.

### The Canadian Northern Railway's Line into the Nitinat Country.

Lord Shaughnessy, President, C.P.R., was reported by the Vancouver World of Sept. 19 as having stated that in his opinion the construction of the Canadian Northern Ry. line from Nitinat to Sooke was entirely unwarranted, and as having characterized the expenditure for it as extravagant waste. It appeared that the getting out of aeroplane spruce was given as an excuse for the construction of the line, which he claimed was not required at this time.

The Premier of British Columbia is



E. R. Battley,  
Superintendent of Motive Power, Eastern Lines,  
Grand Trunk Railway.

reported to have given the following interview on the evening of the same day:

"The line is not being laid either by, or at the expense of, the B.C. Government, and if Lord Shaughnessy has any criticism, he should direct the same to the Dominion Government and not the provincial one. Several months ago, at a meeting with Major Taylor, of the Imperial Munitions Board, charged with getting out airplane spruce, I discussed with him the spruce resources of the province, especially the magnificent spruce belt which I am reliably informed exists in the Nitinat country. Major Taylor informed me he had had it cruised and that it was very desirable. He desired to get it out for war purposes, but said that unless transportation was provided it would not be available. It was known to both of us that the C.N.R. line was graded from the south end of Cowichan Lake into the Nitinat country, and that the grade could be utilized if rails could be procured. The province was receiving from the U.S. Steel Products Co. some 20,000 tons of rails and equipment for the Pacific Great Eastern Ry. These

would lay upwards of 200 miles and we had probably 70 or 80 miles of rails already in stock at various points along the P.G.E.R. We were not in a position to use the rails immediately. When in Ottawa in May last I discussed with the Minister of Railways, the question of the Dominion Government completing the lines in B.C., which were undertaken by the C.N.R. I expressed a desire to lay the rails, but the trouble was that we could not get them. At that time the statement was made to me that if we procured the rails the Dominion Government would be willing. After discussing the spruce situation with Major Taylor, I informed him that the province could loan the rails. When I took up the matter with my colleagues it was pointed out that it was very desirable to get the rails laid from Victoria, through the agricultural district of Sooke, and into the timber belt northwest of Sooke harbor. Then the matter was taken up with the Dominion Minister of Railways and the offer to loan the rails on the condition that as soon as they could be procured the Dominion Government was to return them to us, was made. We have ample rails, over what we are loaning to the government, to carry the P.G.E.R. to Soda Creek. I expect the steel will be returned by the time we are in a position to use it."

### Official Test of the Quebec Bridge.

As stated in Canadian Railway and Marine World for September, the Quebec Bridge Board of Engineers made an official test of the bridge on Aug. 21, in accordance with the specification's requirements. Two heavily loaded trains, each hauled by 2 Santa Fe locomotives, were placed on the bridge, completely filling both tracks of the 1,800 ft. span between the two main piers. The 4 locomotives, instead of being at the extreme end of the train, were placed together at the end of the south cantilever arm, with cars in front and behind, this location providing the greatest effect on the span under their concentrated weight. Each of the locomotives weighed 514,000 lb., and the total weight of locomotives and cars was 6,627 tons, or an average over the whole span of about 3,500 lb. per lin. ft. on each track. The bridge was designed for 2 class E60 locomotives, followed and preceded by a train load of 5,000 lb. per lin. ft. of track. Although the trains used were the heaviest that it was practicable to obtain under normal conditions, it will be seen that there is ample room for increase in weight of locomotives and train loads before the bridge is actually loaded to the limits prescribed by the specification.

Under this somewhat severe test, the maximum deflections noted at the center of the suspended span was 6 7/8 in. The deflection at the south end of the suspended span, under the 4 locomotives, was 6 5/32 in., and at the north end of the suspended span it was 3 15/16 inches. The movement at the expansion joint, between the cantilever arm and the suspended span, under full load, was 1 5/8 in. This latter motion, however, was effected somewhat by temperature during the two hours the trains were left standing on the bridge. Under the maximum train loads prescribed by the specification, the calculated deflection at the end of the cantilever arm would amount to 10 in.

There was a marked absence of vibration while the trains were moving on the bridge, and the test, considering the conditions under which it was made, was highly satisfactory in every respect.



# Electric Railway Department

## Increases in Electric Railway Freight and Passenger Rates.

The British Columbia Electric Ry. has filed with the Board of Railway Commissioners local passenger tariff B.C.E.R. 19, of commutation fares between points on the Vancouver and Lulu Island Ry. and on the Vancouver, Fraser Valley & Southern Ry. to cancel tariff B.C.E.R. 11.

In connection with the company's Victoria lines and business, George Kidd, General Manager, wrote the Mayor Aug-30, asking the city to pass a bylaw authorizing the company to charge a 6c fare, with transfer privileges, in return for which concession the company would put in force the recommendations of the Shortt report that the Victoria franchise be brought into harmony with the Vancouver franchise, except as to the proportion of gross earnings paid, and to apply the Vancouver scale for lighting in so far as practical in Victoria. The principal change which this suggestion would make in the charter would be with respect to the maintenance of track allowance. The company would be prepared to take over the maintenance of the 5.33 miles of track allowance in macadam, and the 18.82 miles of permanent roadway which is in good or fair condition, leaving 4.85 miles of track allowance to be maintained by the city. The company would also desire the passing of a bylaw to eliminate the jitney traffic in the city.

The City of Vancouver, Sept. 7, issued a writ in the Supreme Court against the British Columbia Electric Ry., asking for a declaration of the legality of clause 11 of city bylaw 394, and that it is binding on the company, and for an injunction restraining the company from charging more than a 5c fare for passengers on its cars within the city limits. Clause 11 is the one fixing a fare of 5c, providing for transfers, and for the sale of tickets at reduced fares during certain hours. On Sept. 12, a special application was made to the court to fix a day for hearing of the case, and Justice Murphy fixed Sept. 17 for opening the proceedings. When the case was called on Sept. 17 the city's counsel stated that by an arrangement with the company it would stand over for a week.

This is the present position of the differences between the council and the company that have been under discussion since the council, on July 8, passed a bylaw permitting the company to charge a 6c fare. The mayor refused to sign the bylaw, and the council, upon taking special legal advice, was informed that the bylaw would not be legal until it had been ratified by the ratepayers. As a result, the council, after several conferences and discussions, decided on Sept. 4 to submit the 6c bylaw to the ratepayers for approval on Oct. 5.

A side issue to the negotiations is the matter of electric light rates, which the council contends ought to be reduced, and a suggestion was made that the bylaw which eliminated the jitney traffic should be repealed, as a lever to get this reduction, and also the withdrawal of the 6c fare until after the vote on that bylaw.

Meanwhile the negotiations for the renewal of the franchise for five years are being proceeded with and it is expected that a tentative agreement will be reached early in October.

The Mayor of Vancouver informed the city council Sept. 12, that the company

would announce a new lighting schedule on Sept. 24. The council expected to complete the details of the proposed new franchise at the same time, and it was hoped that the terms of this franchise could be made public by Oct. 5, the date fixed for voting on the 6c street car fare bylaw.

**Edmonton Radial Ry.**—The increase of fares on this municipal railway which became operative in May has considerably reduced the number of passengers carried, particularly the short distance ones. The following figures show the passengers carried and the revenue for four months prior to the increase in fares and for the four months subsequent thereto:—

	Passengers.	Revenue.
January to April.....	3,836,686	\$179,148.75
May to August.....	1,179,192	170,137.01

The Edmonton Bulletin of Sept. 10 said:—"The street railway superintendent believes that the reduction of operating expenses has been carried to the point where it is impossible to go any further. Next week one-man cars will be operating over practically the whole of the city. At present there are only 6 two-men cars operating, and they will be taken out of service almost immediately. As said by officials previously in connection with the railway, the expense has been reduced to the lowest point, while no great influx of residents into the city can be immediately looked for. Therefore, it is said, the alternative in order to raise more money is to increase the fares. Suggestions along this line are likely to include the limiting of the purchase of tickets to 4 for 25c all the time."

The Edmonton Bulletin suggests the adoption of zone fares.

**Fort William Municipal Ry.**—The civic authorities of Fort William and Port Arthur applied to the Ontario Railway and Municipal Board in August for permission to put the following fares in effect on the municipal railways in each city:

Adults, 5c cash, or tickets at rate of 6 for 25c.

Children under 5 free; from 5 to 12 years of age, 5c cash, or tickets at rate of 8 for 25c.

The above fares to be in effect from 5.30 a.m. to midnight; double fares to be charged between midnight and 5.30 a.m.

These fares were to go into effect Sept. 3, but objections to them were filed with the board by labor organizations and no further action has been taken.

**Moncton Tramways, Electricity & Gas Co.** now has the following fares: cash 5c, or 6 unlimited tickets for 25c; workmen's tickets, good between 6.30 and 8 a.m., 12 noon and 2 p.m., and 5 and 6.30 p.m., 8 for 25c. The company applied recently to the New Brunswick Public Utilities Commission for permission to discontinue issuing workmen's tickets, and to charge a 5c fare throughout, and the hearing was fixed to be held at St. John, Sept. 25.

**Montreal Tramways Co.**—Full particulars of the Quebec Public Utilities Commission's judgment, fixing the company's passenger fares, are given on another page of this issue.

**New Brunswick Power Co.**—The commission appointed by the New Brunswick Government to investigate the New Brunswick Power Co.'s affairs, with power

to advance its rates for transportation, gas and electric current, made an interim order early in September, to go into effect on Oct. 1. After fixing maximum rates for electric lighting and power and for gas, the order contains the following clause:—"That as of the said date (Oct. 1), and thereafter until the further order of the commission, the street railway fare shall be 6c. The company shall not be required to issue tickets. Transfer privileges shall remain in force without change. Outstanding tickets shall not be valid for fares after said date, but shall be redeemed in cash on demand at the company's office."

Following are further extracts from the order:—"The commission has caused the company's accounts to be examined by Lybrand, Ross Bros. & Montgomery, accountants familiar with public utility accounting. It appears from their report that the company is not earning its operating expenses, to say nothing of any return on its investment. The net operating income has entirely disappeared in the recent increase in operating expenses, which the accountants report to be at the rate of \$177,041 a year in the two items of coal and labor alone.

"Counsel for the city is carrying on, with the aid of experts, an extended enquiry into the valuation of the properties. The commission is affording every facility for this enquiry, and regards it as an important factor in any final determination of rates. It is apparent, however, that the present earnings of the company are entirely inadequate to pay a return on its investment, computed on any theory, or even to guarantee the continuance of service. The proceeds of the increased rates which the commission has established in this order will not, in the commission's opinion, be sufficient to produce even the amount which was required for interest and dividends on the shares and securities of the St. John Ry. Co. before its acquisition by the N.B. Power Co.

"It has become apparent to the commission in the course of its investigation of the company's affairs that the present relations between the municipality and the company are not such as should exist in the interests of the community. It is the commission's hope that before it reaches its final conclusion some method may be found to harmonize these relations. The same problems which are presented by the situation in St. John have existed in many other localities, and in some cases have been settled by some form of public control or supervision. In the commission's opinion the controversy between the City of St. John and its public utilities cannot be permanently settled to the advantage of either party by the mere establishment of a correct rate base and the determination of a proper interest return.

"The commission is of the opinion that certain economies may be effected in operation, which, however, cannot be made effective in time to assist in meeting the present emergency. The commission requires, however, the company to make no further payment of salaries to the executive committee or to officers not connected with operation while this order remains in effect. The commission recommends to the company that it make an immediate study of the question of



more satisfactory as well as more economical routing of cars, and that it put in operation a sufficient number of one-man cars to determine their economical value and suitability for the service.

"It is not within the commission's authority to amend the contract for municipal lighting. It does, however, recommend to the City of St. John that it consent to such an amendment so that the prices under the contract shall be increased 25%."

**The Ottawa Electric Ry.,** on Aug. 27, filed with the Board of Railway Commissioners, the following special passenger tariff of tolls, C.R.C. 4, cancelling C.R.C. 3, effective Aug. 31:

Between points within the limits of the City of Ottawa, and between points therein and the Experimental Farm and intermediate points; between points within the limits of the City of Ottawa and the Rockcliffe Rifle Range and intermediate points, and between the westerly limits of the City of Ottawa and Britannia on the Bay, and intermediate points. Between 5.30 a.m. and 12 midnight, 5c.

Between 12 midnight and 5.30 a.m., 10c.

To workmen and others, 33 tickets for \$1, or 8 tickets for 25c, good from the first trip in the morning until 7.30 a.m., and between 5 and 6.30 p.m.

Seven tickets for 25c, good only on Sundays.

School children under 14, to and from school at the rate of 40 tickets for \$1, good between 7 and 9.30 a.m., 11.30 a.m. and 1.30 p.m. and 3.30 and 5 p.m.

Children under 10 years of age, 3c.

The effect of this new tariff is to do away with tickets sold formerly at 6 for 25c, and 25 for \$1, making the rates the same as provided for in the company's agreement with the city, viz., 5c for fares between 5.30 and 12 midnight. For the convenience of passengers who do not wish to carry small change, the company sells strips of 5 tickets for 25c. Outstanding old style tickets are being redeemed by the company for cash.

The company issued the following notice to the public:—"The unprecedented increase in the costs of all materials used in the operation of street railways has made it necessary to increase fares. Between 200 and 300 cities in Canada and the United States have advanced fares to sums ranging from 6c to 10c, with an additional charge for transfers in some instances. In Ottawa the company's agreement with the city specifies a fare of 5c, with special provisions for tickets for workmen, school children and for Sunday use. The company, during normal times, when such action was warranted, made special reduced rates of 6 tickets for 25c, and 25 tickets for \$1, which privilege has been continued up to the present, and which the company would be glad to continue for a longer period but for the circumstances above referred to. The company therefore regrets that it is obliged for the present to withdraw the special ticket rates, and, beginning Aug. 31, to revert to the terms of its agreement with the city, viz., a fare of 5c. The reduced rates for workmen's, school children's and Sunday tickets will remain as heretofore. For the convenience of the public, beginning on the date specified, new tickets will be sold by conductors at the rate of 5 for 25c, instead of 6 as heretofore. All tickets now outstanding will be received on the cars in payment of regular fares up to and including Sept. 10."

**Port Arthur Civic Ry.**—See Fort William Municipal Ry.

**Quebec Ry., Light & Power Co.**—The Board of Railway Commissioners passed order 27,711, Sept. 21, approving the

Q.R.L. & P. Co.'s Standard Mileage Freight Tariff, C.R.C. 113, filed on the basis permitted in order in council 1,863, dated July 27, 1918.

**The Winnipeg Electric Ry.** advised the city council Sept. 10, that it was preparing to ask for authority to increase its fare to 7c, with unlimited transfers as at present, or in the alternative for a fare of 6c with a charge of 1c for transfers. It is said that the company does not propose to operate one-man cars.

**Increases in United States.**—Revised figures of fare advances granted traction lines throughout the United States and Canada up to September 15, compiled by the American Electric Railway Association, show that 24 cities have given the local street railways higher rates since July 1, 1918. The figures do not include interurban lines. It is stated that 246 increases had been granted up to July 1, and with the additions since that time, the total number of cities now paying higher rates for street railway service is 270.

### The Ottawa Electric Railway Franchise.

The Ottawa City Council, on Sept. 16, resumed consideration of a motion to reopen negotiations with the Ottawa Electric Ry. respecting the taking over of its lines by the city. The discussion extended over a very considerable period, and eventually the mayor drafted the following letter to the company, which was approved of by the council:—"At a meeting of the council Sept. 16, a motion was presented recommending the opening of negotiations between the city and the company with a view to the possible purchase of the company's assets, or entering into a partnership agreement. The motion was withdrawn after a general expression of opinion that within certain limitations the city would be willing to discuss the possibility of an agreement being arrived at. I am instructed to inform you that the board of control is prepared to consider any proposal which the company might see fit to make, or is prepared to meet the representatives of the company for a preliminary discussion."

Jas. D. Fraser, Secretary-Treasurer of the company, replied on Sept. 18, in part as follows:—

"Before entering upon negotiations, it might be found desirable for the Corporation of Ottawa to consider the appointment of a committee of citizens for the purpose of investigating the question of civic ownership or partnership operation of street railway systems. If this method commends itself to your board, the company would respectfully suggest that the personnel of a committee appointed for the purpose indicated—to be called the tramway committee—might consist of three citizens of Ottawa, to be selected, as follows, viz.,—One representative of the business community, one representative of the civil service and one representative of the Allied Trades and Labor Council—and that neither the corporation nor this company should be represented on the committee."

"Various plans of civic ownership and partnership have been adopted in Canada and the United States. Of these plans the "Service at cost" method enacted into law by the State of Massachusetts recently, and the partnership plan adopted at Montreal recently, possess features of interest and merit which provide a field for investigation."

"Your board will remember that, during recent discussions with representatives of

this company in reference to extensions of the street railway system, it was pointed out that the company, in view of its limited franchise, could not fairly be expected to make further extensions, and that it would therefore be in the interest of the citizens interested in the desired extensions that a decision might be reached as early as possible as to whether the corporation intends to extend the franchise, which, as you are aware, provides that if the corporation does not exercise its right at that time the franchise automatically renews itself for an additional period of five years."

"An investigation by a committee, as suggested, of the methods adopted in other cities would no doubt enable your board to reach an early decision as to the most desirable plan to consider for the operation of the Ottawa street railway system, and when decided upon, the company will be glad to discuss the subject with your board. Such an investigation would enable the city could to present to the electors full information upon the three plans, viz.:—(1) Civic ownership; (2) Partnership; (3) Extension of the present franchise, and the result of the proposed plebiscite would then be definite."

Mr. Fraser's letter was discussed by the city board of control, Sept. 21, after which the mayor intimated that the board would not entertain the idea of handing the question over to a committee as suggested. Considerable feeling having been expressed in favor of the council being consulted before the suggestion be rejected, the board of control met Sept. 24, when it was decided to hold a special meeting of the council Sept. 26, for the consideration of the letter, the board recommending that the proposal for the appointment of a committee be not agreed to.

### Employment of Women on Moose Jaw Electric Railway.

A. H. Dion, Superintendent, Moose Jaw Electric Ry., Moose Jaw, Sask., has favored us with the following information: "We have employed women as conductors for about two years and have found them very satisfactory. We now have about 22 employed. They are treated in exactly the same manner as the men whom they replaced and whose positions they fill. They work on the same schedule and are paid the same scale of wages, no difference being made between the male and female conductors. At present we have no male conductors, owing to the extreme shortage of men in the west, and have found that the employment of women for this work has been a most satisfactory means of overcoming the shortage. We do not give preference to female conductors, but have employed them solely owing to its being impossible to obtain men. We are seriously considering trying women as motormen and have had several applications from women for such employment."

### The Advantages of a Seven Cent Fare.

Pat—This is the foist time innny of these corporations hev done innnything to binnefit the workingman.

Mike—How is that, Pat?

Pat—It is this seven-cent fare. I hev bin walkin' to and from me work and savin' tin cints, and now I kin save fourteen cints.—Boston Transcript.



## Increased Fares for Electric Railways in Great Britain.

The necessity for increased revenue for electric railways and other public utilities in Great Britain has been met by the passage by the House of Commons of the Statutory Undertakings (Temporary Increases of Charges) Act, 1918, as follows:—

1. (i.) Where it appears to the appropriate government department that the financial position of any undertaking to which this act applies has been adversely affected by circumstances arising out of the present war, the department may, if they think fit, by order provide for the modification of any statutory provisions regulating the charges to be made by the undertakers, and of any statutory provisions consequential on or supplemental to any such provisions as aforesaid, for such period during the continuance of this act, in such manner, and subject to such conditions, as appear to the department to be just and reasonable:

Provided that—

(a) where the undertakers are a local authority no modification shall be authorized which will increase the statutory maximum charge by more than 50%, or which is more than sufficient so far as can be estimated to enable the undertaking to be carried on without loss; and

(b) In any other case no modification shall be authorized which is more than sufficient to enable with due care and management a dividend on the ordinary stock or shares of the undertaking to be paid at three-quarters the standard or maximum rate of dividend, if any, prescribed for the undertaking, or at three-quarters the pre-war rate of dividend, whichever is lower.

(ii.) An application to a department for the purposes of this act shall be accompanied by such information, certified in such manner as the department may require, with respect to the financial position of the undertaking in question, and before making an order the appropriate government department shall require the undertakers to give public notice of the application for an order under this act, and as to the manner in which and time within which representations may be made, and to give a similar notice to the council of each county, borough, or urban, or rural district within which any part of the undertaking or limits of supply of the undertaking is situate, and the department shall consider any representations which may be duly made.

(iii.) The undertakings to which this act applies are tramway undertakings, including light railways constructed wholly or mainly on public roads, and undertakings for the supply of gas, water and electricity, and in calculating the maximum charge which may be authorized under this act in respect of such tramway undertakings fractions of one halfpenny shall be calculated as one halfpenny.

(iv.) For the purposes of this act—

The expression "statutory provisions" includes the provisions of any order having the force of an act;

The expression "appropriate government department" means, in relation to gas and water undertakings carried on by local authorities, the Local Government Board, and in relation to other undertakings the Board of Trade.

The expression "local authority" includes any commissioners, trustees, or other public body of persons carrying on, otherwise than for purposes of private profit, any undertaking to which this act applies.

The expression "pre-war rate of dividend" means the average rate of dividend for the three financial years immediately preceding the war.

2. In the application of this act to Scotland the Secretary for Scotland, and in the application of this act to Ireland the Local Government Board for Ireland, shall be substituted for the Local Government Board.

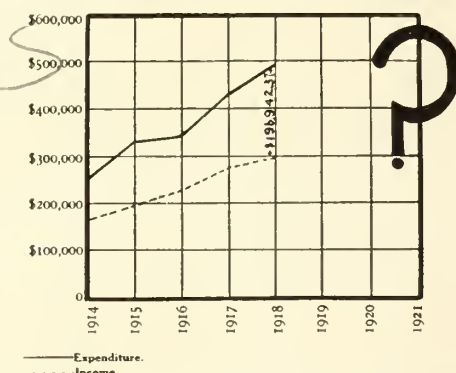
3. (i.) This act may be cited as the statutory undertakings (temporary increase of charges) act, 1918.

(ii.) This act shall have effect during the continuance of the present war and for a period of two years thereafter and no longer.

## Toronto Civic Railway Deficits.

The Toronto Bureau of Municipal Research has issued "City Budget Facts, 1918," which contains the following statement of the financial results of operation of the civic car lines for the past five years:—

Year.	Expenditures (including debt charges)	Income	LOSS.	
			Amount	Per cent of income
1914..	\$ 250,102.25	\$ 167,498.12	\$ 82,604.13	49.3
1915..	332,074.25	199,980.49	132,093.76	66.1
1916..	343,975.17	225,031.38	118,943.79	52.8
1917..	432,436.83	275,972.78	156,464.05	56.6
Estimated				
1918..	496,942.37	300,000.00	196,942.37	65.6
Total	\$1,855,530.87	\$1,168,482.77	\$687,048.10	58.9



The accompanying chart shows the increasing deficit from operating the lines.

## Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:—

	July, 1918.	July, 1917.
Gross .....	\$413,968	\$438,378
Expenses .....	394,803	380,054
Net .....	19,165	58,324

Cape Breton Electric Co.—

	12 months to 12 months to			
	July, 1918	July, 1917	July 31, 1918	July 31, 1917
Gross	\$44,532.50	\$40,500.71	\$490,079.96	\$433,185.72
Exp.	34,835.41	25,293.27	348,958.14	259,179.30
Net	9,697.09	15,207.44	141,121.82	174,006.42

Edmonton Radial Ry.—July earnings, etc.:—

	1918.	1917.
Passenger receipts .....	\$45,906.90	\$43,957.90
Gross receipts .....	46,307.40	44,618.34
Operating expenses .....	33,097.21	34,419.88
Net earnings .....	\$13,210.19	\$10,198.46
Interest and other charges .....	21,249.29	21,069.31
Deficit .....	\$ 8,039.10	\$10,870.85

Hull Electric Co.—The directors for the current year are: A. D. MacTier, President; G. Gordon Gale, Vice President and General Manager; E. W. Beatty, K.C., Sir George Bury, E. Hanson, I. G. Ogden and F. L. Wanklyn. H. C. Oswald is Secretary-Treasurer.

Regina Municipal Ry.—Freight operating results:—

	1918.	1917.
Passengers carried .....	446,000	360,688
Passenger receipts .....	\$21,406	\$15,061

The increased number of passengers carried is reported to be largely due to the fact that part of the exhibition traffic came into the month, while in 1917, the whole exhibition traffic was in July.

Toronto Railway.—

	Earnings.		City percentage.	
	1918.	1917.	1918.	1917.
Jan.	\$562,707	\$510,052	\$ 84,406	\$ 76,508
Feb.	509,650	473,185	88,763	70,978
Mar.	575,957	531,080	115,191	105,876
Apr.	543,055	510,335	108,611	102,067
May	548,778	510,870	109,756	102,174
June	533,393	499,732	106,679	99,946
July	540,296	467,382	108,058	93,476
Aug.	555,709	516,967	111,142	103,393

\$4,369,545 \$4,019,603 \$832,606 \$754,418

Toronto Ry., Toronto & York Radial Ry., and allied companies.—

	7 months to 7 months to			
	July 31, 1918	July 31, 1917	July 31, 1918	July 31, 1917
Gross	\$1,049,936	\$954,192	\$7,406,105	\$6,827,776
Expenses	589,964	527,288	4,045,377	3,581,702
Net	459,972	426,904	3,360,728	3,246,074

Winnipeg Electric Ry. and subsidiary companies.—

	7 months to 7 months to			
	July 31, 1918	July 31, 1917	July 31, 1918	July 31, 1917
Gross	\$288,155	\$242,797	\$2,099,493	\$1,916,167
Expenses	218,454	211,450	1,603,747	1,448,923
Net	69,701	31,347	495,746	467,244

## Canadian Electric Railway Association's Annual Meeting.

The Canadian Electric Railway Association's annual meeting, held in Toronto, Sept. 17 and 18, was attended by a large number of representatives of member companies, the President, C. L. Wilson, Assistant Manager, Toronto & York Radial Railway, occupying the chair.

On account of war conditions, the usual practice of having papers read and discussed was omitted, and the greater part of the time was devoted to the reading and discussion of the Honorary Secretary's report on the association's work for the past year, and the discussion of other matters vitally affecting all electric railway companies, such as the necessity for securing increased revenues, etc.

The following were unanimously elected as officers: President, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway; Vice President, A. Gaboury, Superintendent, Montreal Tramways Co.; Honorary Secretary-Treasurer, Acton Burrows, Managing Director, Canadian Railway and Marine World, re-elected for the 12th consecutive year. Executive Committee: E. P. Coleman, General Manager, Dominion Power & Transmission Co.; Jas. D. Fraser, Director and Secretary-Treasurer Ottawa Electric Ry.; G. Gordon Gale, Vice President and General Manager, Hull Electric Co.; H. M. Hopper, General Manager, New Brunswick Power Co.; Geo. Kidd, General Manager, British Columbia Electric Ry.; M. W. Kirkwood, General Manager, Grand River Ry.; J. S. MacKenzie, Treasurer, Winnipeg Electric Ry.; R. M. Reade, Superintendent, City and Quebec County Divisions, Quebec Ry., Light & Power Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry. Assistant Secretary, A. A. Burrows, Business Manager, Canadian Railway and Marine World.

The New Brunswick Power Co. will, according to a press report, convert several of its cars on the St. John Ry. into one-man cars.



## Electric Railway Projects, Construction, Betterments, Etc.

**Calgary Municipal Ry.**—The question of a new route for the Ogden car line is under consideration by the Calgary, Alta., City Council. A right of way over private property is desired, and the council is considering the desirability of starting expropriation proceedings to secure the necessary land. (Sept., pg. 403.)

**Levis County Ry.**—We are officially advised that of the Quebec Bridge division, 7.25 miles, there has been reballasted this year 2.50 miles, and that it is expected to finish a further distance of three miles before winter sets in. (Sept., pg. 403.)

**London & Port Stanley Ry.**—One of the London, Ont., City Council's committees was informed Sept. 12, that the steel for the Beattie bridge had been ordered, and that the work of building this bridge and raising the railway bridge would be taken in hand as soon as delivery of the steel was assured. Final plans for the entire work are promised to be submitted at an early date. (Sept., pg. 403.)

**Moose Jaw Electric Ry.**—The Moose Jaw, Sask., City Council, on Sept. 9, passed a resolution recommending the company to build a line from 4th Ave. s.w. and Coteau St., west to 9th Ave. s.w., thence north on 2nd Ave. to Lillooet St., and thence along Lillooet St. to 4th Ave. In the event of the company agreeing to build this line at once, the council will submit a bylaw to the ratepayers providing for a straight 5c fare, will endorse the one-man car proposals for the duration of the war, and will defer the collection of taxes for 1917 and 1918. (Aug., pg. 348.)

**Winnipeg Electric Ry.**—The city engineer reported to the city council recently that during June the company had expended on improvements \$31,379.23, of which \$418.46 was for elimination of electrolysis. Under the agreement with the city, the company is to expend \$25,000 a month for a specified term upon extensions and improvements.

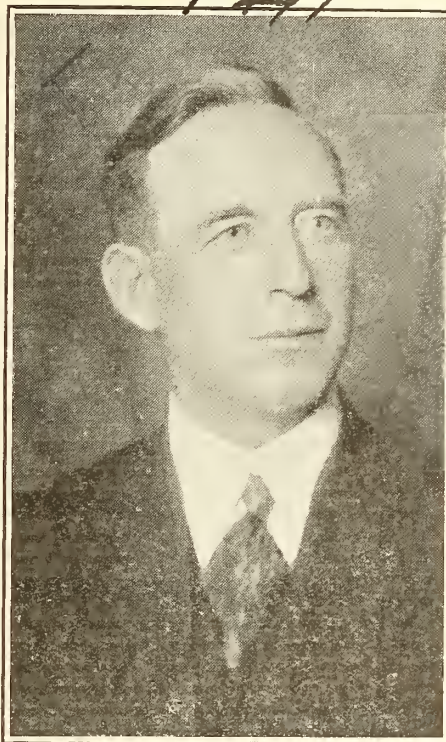
The company has advised the Winnipeg City Board of Control that it does not regard the proposed extension for River Heights as being necessary, at present at any rate. (Sept., pg. 403.)

**American Institute of Electrical Engineers.**—The Toronto section opened its 16th season with an address by P. M. Lincoln of the Westinghouse Electric Manufacturing Co., East Pittsburgh, Pa., on the development of power transmission. He reviewed the progress of electric power transmission from its inception, and presented comparisons with prior developments in power transmission, by hydraulic, mechanic and pneumatic methods. The records of early transmissions with alternating current, at approximately 1,000 volts, were especially interesting in view of their effect on the ultimate standardization of alternating current systems with existing voltages as high as 150,000. He also discussed the limitations to still higher voltages of transmission, and it is his opinion that, within five years, there will be one or more systems operating at 200,000 volts. In the course of the discussion, Jno. Murphy, Electrical Engineer, Railways and Canals Department, related some interesting experiences in connection with early electrical developments in Ottawa, with particular reference to his experience with one of the first synchroscopes, an early invention of Mr. Lincoln.

## Mainly About Electric Railway People.

**F. Morton Morse**, heretofore Secretary-Treasurer, Winnipeg Electric Ry., will in future act as Secretary only.

**F. H. Williams**, Publicity Agent, Win-



**A. Eastman**,  
Vice President and General Manager, Windsor,  
Essex & Lake Shore Rapid Ry., and President,  
Canadian Electric Railway Association.



**J. S. Mackenzie**,  
Treasurer, Winnipeg Electric Railway.

nipeg Electric Ry., was married at Kingston, Ont., Sept. 18 to Miss B. C. Holder.

**A. W. McLimont**, General Manager, Winnipeg Electric Ry., has been elected

a director of the Greater Winnipeg Board of Trade.

**R. R. Knox**, Traffic Superintendent, Winnipeg Electric Ry., has returned to duty, after medical treatment at Rochester, Minn., and a recuperating rest at Pinawa, Man.

**J. S. Mackenzie**, heretofore Purchasing Agent, Winnipeg Electric Ry., has been appointed Treasurer, not Assistant Treasurer, as stated in Canadian Railway and Marine World for September.

**J. A. Ellis**, a former Mayor of Ottawa and ex member of the Ontario Legislature, has been appointed a member of the Ontario Railway and Municipal Board, in place of H. N. Kittson, of Hamilton, who retired some months ago.

**W. C. Hawkins**, Vice President and Managing Director, Dominion Power & Transmission Co., and President, Southern Canada Power Co., who was a United States citizen, was admitted to Canadian citizenship at Hamilton, Ont., Sept. 17.

**C. H. Rust**, latterly City Engineer of Victoria, B.C., and formerly City Engineer of Toronto, has been appointed Assistant to D. H. McDougall, who is Assistant to R. J. Fleming, General Manager, Toronto Electric Light Co., and Toronto Power Co., which are subsidiaries of the Toronto Ry. Co.

**Lawrence Palk**, whose appointment as Assistant Secretary, Winnipeg Electric Ry., and Secretary of the Winnipeg, Selkirk & Lake Winnipeg Ry., was announced in our last issue, was born at Winnipeg, Aug. 14, 1885, and entered the company's service in Oct., 1904, as stenographer to the General Manager, and has since been secretary to General Manager, Claims Agent, Accident Investigator, and since Feb., 1916, Assistant to General Manager, which position he still holds.

**Arthur Gaboury**, who was elected Vice President, Canadian Electric Railway Association, was born at Montreal, April 6, 1875, and entered Montreal Street Ry. Co.'s service, June 4, 1894, since when he has been, to Oct., 1900, conductor and motorman; Oct. to Nov., 1900, Assistant Inspector; Nov. to Dec., 1900, night clerk, Cote St. Barn; Dec., 1900, to Sept., 1903, day chief clerk, St. Denis; Sept., 1906, to May, 1906, Claims Agent; May, 1906, to 1907, Assistant Superintendent; and from 1907, Superintendent, which position he still occupies in Montreal Tramways Co.'s service. He was, early this year, appointed, by the French Government, an officer of the French Academy.

**Albert Eastman**, who was elected President, Canadian Electric Railway Association, was born in Bosanquet Tp., Ont., Aug. 21, 1870. He entered transportation service in 1889, and was to 1891, operator, Michigan Central Rd.; 1892 to 1900, freight and ticket clerk and operator, G.T. R., Detroit, Mich.; 1901, assistant agent, Michigan Central Rd.; 1892 to 1900, to Nov., 1902, Travelling Express and Passenger Agent, Detroit United Ry.; Dec., 1902, to May, 1903, General Express Agent, Utica and Mohawk Valley Ry.; May to Nov., 1903, Division Superintendent, Detroit United Ry.; Nov., 1903, to Nov., 1907, Superintendent of Employment, Public Service Corporation of New Jersey; Nov., 1907, to May, 1910, General Express and Passenger Agent, New York State Railways, Syracuse and Utica, N.Y.; May, 1910, he was appointed General Manager, and in 1914, also Vice President, Windsor, Essex and Lake Shore Rapid Ry., Kingsville, Ont.



### Winnipeg Electric Railway's New Cars.

As mentioned in a previous issue, the Winnipeg Electric Ry. is having 10 cars built by the Ottawa Car Manufacturing Co. They will be double truck, single end, semi steel, p.a.y.e. type, with arch roof. The interior lighting arrangements include 5 shaded lights in the center of the arch roof, through selector switch on rear platform over conductor's position. The vestibule doors of the 2-leaf type will fold out and back and will be controlled by the motorman and conductor and operated in conjunction with the folding step. The heating will be hot air, and Keystone illuminated side window signs are to be installed on each rear window and front vestibule side window. The trucks, air brakes, motor equipment and Coleman fareboxes are being supplied by the Winnipeg Electric Ry.

The general details are:

Seating capacity .....	46
Weight of car body .....	1,900 lbs.
Length of car body .....	33 ft. 3 ins.
Length of front vestibule .....	5 ft.
Length of rear vestibule .....	7 ft. 6 ins.
Length over bumpers .....	45 ft. 8 ins.
Width over all .....	8 ft. 6 ins.
Distance between bolsters .....	21 ft. 6 ins.

### London and Port Stanley Railway Report.

A short summary of the receipts and expenditures of the London & Port Stanley Ry. for the year ended June 30 was given in our last issue, since when the full report has come to hand, and the following figures are taken from it:

Income.	
Passenger earnings .....	\$177,598.28
Freight earnings .....	143,608.96
Miscellaneous earnings .....	47,706.81
Total earnings .....	\$368,914.05
Operating expenses .....	254,659.85
Gross income .....	\$114,254.20
Deductions,—	
Taxes .....	\$ 2 252.8
Interest .....	53,732.56
Rental .....	20,000.00
Sinking fund .....	14,766.29
	90,750.23
Net income .....	\$23,03.97
Surplus Income.	
Year ended June 30, 1916 .....	\$18,474.14
Year ended June 30, 1917 .....	26,581.48
Year ended June 30, 1918 .....	23,503.97
Total .....	\$68,559.49
Statistics.	
Passenger car mileage .....	486,130
Freight, mail and express car mileage ..	347,437
Fare passengers carried .....	842,641
Average fare, revenue passengers .....	20.27c
Car earnings per car mile .....	38.53c
Miscellaneous earnings per car mile .....	5.72c
Operating expenses per car mile .....	30.55c
Operating expenses and taxes per car mile	30.82c
Tons of freight carried .....	614,351

**Toronto Ry. Litigation.**—Judgment was delivered in Toronto recently in favor of the city against the Toronto Ry., on a claim for \$95,859.25, being 20% of gross receipts for May, 1915, and interest on \$93,790.71 from Nov. 15, 1915, and costs of the action, without prejudice to the rights or obligations of either party as to apportionment or recovery of the costs of constructing the Don River bridge or any part of it. Judgment was also given in favor of the Toronto Ry. against the city on a counter claim for \$82,040.51, with interest on \$70,686.97 from May 3, 1915, and on \$11,333.54 from Dec., 1915, and the costs of the counterclaim. A stay of 20 days was granted in both cases. The Toronto Ry. did not dispute the city's claim, but had withheld payment pending the settlement of the company's claims against the city for certain work done on the tracks.

## Montreal Tramways Co's Fares Settled by Quebec Public Utilities Commission.

The Quebec Public Utilities Commission gave judgment, Sept. 20, on the appeals of the Montreal Tramways Co., and of the municipalities served by it, against the schedule of fares fixed by the Montreal Tramways Commission on June 21, full particulars of which were given in Canadian Railway and Marine World for August and September.

The principal changes made by the Public Utilities Commission are that transfers are to be issued free in the uni-

form tariff territory, instead of being charged for at the rate of 1c, as fixed by the Montreal Tramways Commission, except to school children and between 5 and 5 a.m. on week days only. So-called workmen's tickets have been restored by the Public Utilities Commission and are to be sold 6 for 25c and to be good between 6 and 8 a.m. and 5 and 7 p.m. Certain modifications are also made in the schedules outside the uniform tariff territory.

### COMPARISON OF THE TWO TARIFFS.

Following is a comparison of the tariff as fixed by the Montreal Tramways Commission and of the revised tariff as settled by the Public Utilities Commission. The uniform tariff territory, referred to hereunder, comprises the City of Montreal and the cities or towns of Maisonneuve, Westmount, Outremont, Verdun, St. Laurent, Mount Royal, that portion of the parish of St. Laurent and of the municipality of Cote St. Luc lying to the east of the line of the company running from Snowdon station to Cartierville, including the land occupied by the said line.

#### TRAMWAYS COMMISSION'S SCHEDULE.

- (a) From midnight to 5 a.m., 15c cash.  
(b) From 5 a.m. to midnight, 6c cash, or 5 tickets for 25c.  
(c) For school children from 5 years to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.  
(d) Transfers shall be issued free to school children specified in clause c, and to all passengers travelling on cars between 5 a.m. and 8 a.m., on week days only. At all other times, a transfer shall be issued to any passenger paying his or her regular fare, at a charge of 1c.

The following are the tariffs for municipalities outside the uniform tariff territory, for local traffic only:—

#### Montreal West.

Local traffic:

- (a) From midnight to 5 a.m., 5c cash fare.  
(b) From 5 a.m. to midnight, 2c cash fare, or 6 tickets for 10c.  
(c) School children, from 5 to 16 years of age on week days only, and between 8 a.m. and 6 p.m., 1c cash fare or 6 tickets for 5c.

- (a) Day tariff, 2c cash fare or tickets to be sold at the rate of 6 for 10c.  
(b) School children, 1c cash, or a ticket to be sold at the rate of 6 for 5c.  
(c) Night tariff, 5c cash.

#### Town of Lachine.

Local traffic:

- (a) From midnight to 5 a.m., 10c cash fare.  
(b) From 5 a.m. to midnight, 5c cash fare.  
(c) School children from 5 to 16 years of age, on week days only and between 8 a.m. and 6 p.m., 7 tickets for 25c.  
(d) The above tariff will also apply to all passengers travelling from the Town of Lachine to the Western limit of the uniform tariff territory and vice versa.

- (a) Day tariff, 5c cash or a ticket to be sold at the rate of 6 for 25c.  
(b) School children, a ticket to be sold at the rate of 7 for 25c.  
(c) Night tariff, 10c cash.

The foregoing tariffs apply to all passengers travelling from Lachine to the western limit of the uniform tariff territory and vice versa.

#### Ville St. Pierre.

From the western boundary of Ville St. Pierre to the western limit of the uniform tariff territory and vice versa:

- (a) From midnight to 5 a.m., 5c cash.  
(b) From 5 a.m. to midnight, 2c cash or 6 tickets for 10c.  
(c) School children from 5 to 16 years of age, on week days only and between 8 a.m. and 6 p.m., 1c cash fare or 6 tickets for 5c.

All tariffs same as for Montreal West and to apply to all passengers travelling between the eastern and western limits of the town, but not to passengers having paid the Lachine local fare.

#### Montreal North.

Local traffic:

- (a) From midnight to 5 a.m., 10c cash fare.  
(b) From 5 a.m. to midnight, 5c cash fare.  
(c) School children from 5 to 16 years of age, on week days only and between 8 a.m. and 6 p.m., 7 tickets for 25c.

Same tariffs as for the City of Lachine. Fare of school children will, however, be good for interurban transport as far as the Sacre Coeur Convent station.



**Montreal East.****Local traffic:**

- (a) From midnight to 5 a.m., 5c cash fare.
- (b) From 5 a.m. to midnight, 2c cash fare.
- (c) School children from 5 to 16 years of age, on week days only and between 8 a.m. and 6 p.m., 1c cash fare or 6 tickets for 5c.

Same tariffs as for Town of Montreal West.

**Pointe aux Trembles and Laval.****TOWN OF POINTE AUX TREMBLES.**

- (a) From midnight to 5 a.m., 10c cash fare.
- (b) From 5 a.m. to midnight, 5c cash fare.
- (c) For school children from 5 to 16 years of age, on week days only and between 8 a.m. and 6 p.m., 7 tickets for 25c.

**Interurban Traffic.**

From Laval de Montreal to western limits of Pointe aux Trembles, and vice versa:

- (a) From midnight to 5 a.m., 10c cash fare.
- (b) From 5 a.m. to midnight, 5c cash fare.
- (c) For school children, from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.

From Laval de Montreal to eastern limits of uniform tariff territory and vice versa:

- (a) From midnight to 5 a.m., 15c cash fare.
- (b) From 5 a.m. to 8 a.m., 10c cash fare.
- (c) For school children from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.

From Pointe aux Trembles to eastern limits of uniform tariff territory and vice versa:

- (a) From midnight to 5 a.m., 10c.
- (b) From 5 a.m. to 8 a.m., 5c.
- (c) For school children from 5 to 16 years of age, on week days only, and between 8 a.m. and 6 p.m., 7 tickets for 25c.

**Extracts from Judgment.**

The Quebec Public Utilities Commission, in concluding its judgment, said:—"Should the present tariff prove inadequate at any time the fares can be raised, but, as we read the contract, they can only be lowered when the accumulated surplus reaches \$2,000,000, whereupon one-half will be for such reduction.

"We believe we have made ample allowance for all expenditure the company may be called upon to meet, and have not been more optimistic in our forecast as to revenue than the Tramways Commission. Taking the contract in its entirety, the benefit of any doubt should, in our opinion, be construed in favor of lower fares.

"It is far from an agreeable duty to a public body to increase the rates of a public utility. It is simply, however, a matter of maintaining the public utility in question, as an efficient and going concern. Urban transportation in this community is essential and it cannot be long maintained at less than cost. This has had to be recognized the world over and is a consequence of the abnormal conditions through which we are passing. In all spheres of activity, transportation among the rest, prices and rates have been increased, and we have not gone farther in this direction than necessity and the terms of the contract appear to demand."

The Chairman remarked verbally that

- (a) Day tariff, 2c cash fare.
- (b) School children, 1c cash fare or a ticket to be sold at the rate of 6 for 5c.
- (c) Night tariff, 5c cash.

**TOWN OF LAVAL.**

- (a) Day tariff, 3c cash fare.
- (b) School children, 2c cash fare or a ticket to be sold at the rate of 7 for 10c.
- (c) Night tariff, 10c cash.

Tariff applicable to persons travelling between eastern limit of uniform tariff territory to any point in Laval de Montreal.

- (a) School children, the combined cash fares or a ticket to be sold at the rate of 7 for 20c.
- (b) Night tariff, 15c cash.

**GENERAL.**

Day shall mean any time between 5 a.m. and midnight. Night, from midnight to 5 a.m., but nothing herein contained shall compel the company to run cars later than at present.

School children shall mean children between the ages of not less than 5 years nor more than 16 years, and fares for such shall only be good on week days and between 8 a.m. and 6 p.m.

All fares as herein provided shall apply in respect of municipalities as bounded and defined on Jan. 28, 1918.

Where not otherwise specified through fares shall be computed by adding together the local fare or fares and the uniform tariff territory fare in all cases where passengers pass from an outside municipality into the uniform tariff territory:

The Public Utilities Commission thought transfers had been abused a great deal, and they were going to take the question up with the Tramways Commission and the company, to see whether something could be done to prevent the abuses that have been in existence for some time.

The new schedule of fares goes into effect Oct. 3, and in preparation therefor, it is being advertised in Montreal papers, while the company is preparing its new forms of tickets and transfers. Under the franchise agreement tickets purchased at existing rates cannot be used after the new schedule comes into effect, but are to be redeemed by the company at the price at which they were sold. Under the new transfer plan, passengers, at the time of paying their fares, must state the first point at which a transfer is desired, and the transfer ticket will be punched accordingly. The new fare tickets will, it is said, be different from the old ones in color, and will have the value printed on the face. It is not expected that the new transfer forms will be ready for Oct. 3, and until they are, the present forms will be used.

The Sydney, N.S., Trades and Labor Council passed a resolution Sept. 10 opposing the adoption of one-man cars in the city by the Cape Breton Electric Co., and pledging itself to use every legitimate means within its power to oppose their introduction.

**Quebec Railway, Light, Heat and Power Co's Report.**

The annual meeting was held at Montreal, Sept. 10. Following are extracts from the report for the year ended June 30:

The gross earnings from operation for the year were \$1,797,852.83, against \$1,832,031.93 in 1917, a decrease of \$34,179.10. After adding miscellaneous income of \$230,088.32, there was a total revenue from all sources of \$2,027,941.15, a decrease of \$34,951.58. The operating and maintenance expenses were \$1,235,724.33, against \$1,155,969.25 in 1917, an increase of \$79,755.08. The fixed charges and taxes were \$696,909.92, leaving a net surplus of \$95,306.90.

After making provision for obsolete cars on the City Street Railway Division and portion of storage battery installed in Queen Street sub-station, there remained a total at the credit of surplus account of \$753,091.17. There was expended during the year \$243,225.48 on maintenance account, which was charged to operation, in order to maintain in a high state of efficiency the physical condition of the properties and plant of the company and its various subsidiary companies.

The assets are \$23,973,069.40, and the liabilities \$23,219,978.23, the surplus being \$753,091.17.

The directors for the current year are: Sir Rodolphe Forget, President; L. C. Webster, Vice President; C. A. Lavigne, L. J. Tarte, A. Picard, J. T. Donohue, P. Galibert, L. G. Morin, C. Donohue, T. J. Stewart and A. E. Labelle. W. J. Lynch is General Manager, and A. LeMoine is Secretary.

**One Man Cars for Saskatchewan.**—The Regina City Council has decided to apply to the Saskatchewan Government asking that the Railway Act be so amended at the next session of the legislature as to give permission to operate one-man cars on electric railways. The cities of Saskatoon and Moose Jaw are being invited to co-operate in securing the legislation. The operation of one-man cars is at present specifically forbidden—the section in the Railway Act expressly providing that all cars shall have two men in charge—and an attempt to have the section amended last year was not pushed beyond the committee stage.

**Jitney men in Vancouver.**—A fine of \$20 and costs was imposed in the Vancouver police court Sept. 12 on L. Shaw for an infraction of the city bylaw passed recently, for the elimination of jitney traffic. The cases of 16 other offenders were postponed until a later date, when it was stated fines would be inflicted. A large number of additional summonses have been issued since Sept. 12, the jitney men continuing to operate upon the advice of counsel, who has given notice of appeal.

**The Detroit United Lines,** which serve 159 cities in Michigan within 75 miles of Detroit, have been authorized by the Interstate Commerce Commission to charge 2c a mile plus a 5c fare on the street car lines in Detroit. All mileage and reduced fare tickets are withdrawn, with the exception of school tickets and children's rates.

**Montreal Tramways Co.**—The annual meeting of shareholders called for Aug. 29, was postponed to Sept. 27.

The Ottawa Electric Ry. announced Sept. 16, that it had decided to stop running night cars at 1 a.m. instead of 2 a.m. as formerly.



## The Montreal Tramways Co's Annual Report.

Following are the principal portions of the Montreal Tramways Co.'s annual report for the year ended June 30, 1918:

Gross earnings, July 1, 1917, to Feb. 9, 1918 .....	\$4,652,747.66
Allowance under new contract and other earnings, from Feb. 10 to June 30, 1918 .....	874,048.71
<b>Total .....</b>	<b>\$5,526,796.37</b>
Surplus carried over from June 30, 1917 .....	856,449.01
<b>Total .....</b>	<b>\$6,383,245.38</b>
Operating expenses, July 1, 1917, to Feb. 9, 1918 \$3,148,003.78	
Taxes, July 1, 1917, to Feb. 9, 1918 .....	92,474.26
City percentage on earnings, July 1, 1917, to Feb. 9, 1918 .....	250,509.12
Interest on bonds and loans for the year ..	940,242.38
Interest on debenture stock for the year ....	800,000.00
Dividends paid to April 30, 1918 .....	254,637.75
Discount on bonds ....	223,112.00
Spent on renewals over amount carried forward from last year .....	106,808.15
Amount paid on account first Tramways Commission up to June 30, 1918 .....	15,000.00
	<b>\$5,830,787.44</b>
General surplus .....	\$ 552,457.94

In the above figures the gross earnings to Feb. 9, 1918, the date of the termination of the old contract, are shown separately from the interest allowed the company under the terms of the new franchise. The gross credits amount to \$5,526,796.37, the surplus carried over from June 30, 1917, was \$856,449.01, making the total credits \$6,383,245.38. The total charges against this sum amount to \$5,830,787.44, leaving a balance to the credit of the general surplus account of \$552,457.94, a reduction from the surplus as it stood at the close of the fiscal year 1917 of \$303,991.07.

On Jan. 28, 1918, a contract was executed between the City of Montreal and the company, which was later assented to by the Quebec Legislature, granting a franchise on the Island of Montreal to the company for 35 years. Under this contract the rates of fares to be charged are to be fixed by the Tramways Commission, appointed by the Quebec Government to administer the contract, and must be sufficient to produce a revenue that will meet the allowances provided for under the said contract, viz.; operating expenses and taxes, operating profit, maintenance and renewals, 6% per annum on the amount of \$36,286,295.00, as established by the contract; 7% per annum on additional capital supplied during the continuance of the war, and for two years after its close, to be received over a period not exceeding five years beyond the close of the war; 6% per annum on working capital furnished by the company for the operation of its system; ½% per annum on \$36,286,295, or \$181,431.47, to cover expenses incurred by the company in procuring additional capital. A rental of \$500,000 a year to be paid to the city during the period of the contract. A sum equal to 1% per annum of the gross revenue to be paid annually into a contingent reserve fund, until such fund shall amount to \$500,000. All the portion of the gross revenues remaining after the payment of the charges above described shall constitute the divisible surplus, and shall at the end of each year be distributed as follows: To the city 30%; to the company 20%; and to the tolls reduction fund 50%. The tolls reduction fund shall be held in trust for the patrons of the company for the

reduction of tolls, and shall be administered by the commission as provided for under the contract. Whenever at the end of any year the amount in the tolls reduction fund shall exceed \$1,600,000, the commission may, and whenever the amount in said fund shall exceed \$2,500,000, the commission shall reduce the fares or tolls on the tramways system.

The company purchased during the past year a block of land on Mount Royal Ave., east of Fullum St., for the purpose of erecting suitable car barns. A contract granting the company an exclusive franchise in the Town of St. Laurent, for 36 years, was executed during the past year. The company sold a block of land in the Parish of Pointe aux Trembles, which was not required for its purposes.

The company received a general demand from its employees for an increase in wages. After many deliberations, including meetings with the Tramways Commission and the representatives of the City of Montreal, etc., it was agreed to grant a general increase to the employees.

During the past year, the company received an additional contract for machining shells, and is proceeding with the work satisfactorily.

The board decided to defer the declaration of the regular quarterly dividend of 2½% on the common stock, which would have been payable on Aug. 1 last, owing to the fact that the new fares and allowances provided for under the contract had not become operative, an appeal having been taken to the Quebec Public Utilities Commission.

### Electric Railway Notes.

The Hamilton, Ont., City Council has authorized the Hamilton St. Ry. to stop its cars before crossing street intersections, instead of after passing them, as has been the practice.

The Edmonton, Alta., City Council has been invited to follow the lead of Calgary, and to grant free passes on the city's electric railway to all returned soldiers who have lost limbs.

The Regina, Sask., Municipal Ry. put in effect a reduced schedule of cars on its lines from Sept. 1 to 14, to enable 21 of its employees to join in the harvest campaign held in the province.

The London & Port Stanley Ry. has extended the use of the summer commutation book tickets to Port Stanley, Ont., to Oct. 15, and also the summer extension week end fares from London to St. Thomas and Port Stanley.

It was reported to the Hamilton, Ont., City Council, Sept. 10, that the report of the special committee on the street railway situation would be presented as soon as the reports from the city engineer and the city solicitor were received.

The Hydro Electric Power Commission of Ontario has received the last two of the 12 electric locomotives, for its Chipewa power development project, which it ordered from C. E. A. Carr Co., Toronto, recently, and which were built by the National Steel Car Co., Hamilton, Ont.

The Calgary, Alta., City Council, on Sept. 3, fixed a 5c fare for soldiers in uniform to or from the city on the Sarcee line of the Municipal Ry. Notice of motion was given to ask the Dominion Government to pay a lump sum, so that the city could carry soldiers to and from camp free.

The British Columbia Attorney General announced recently that the government has decided to introduce a measure at the next session of the legislature for the appointment of a public utilities commission. The constitution of the commission, he said, will be similar to the commissions already appointed in the eastern provinces.

The Hull Electric Co. has ordered a double truck snow sweeper from Ottawa Car Manufacturing Co. It will be arranged with a specially constructed frame on the ends of the underframe, the removal of which will enable it to be used as a locomotive. The underframe will be all steel, and the cab will be of wood. Trucks, air brakes and motor equipment will be supplied, and with the exception of the air brakes, which will be installed by the builders, will be installed by the Hull Electric Co. Following are chief dimensions: Lenth over all as sweeper, 39 ft.; as locomotive, 24 ft.; width over all, 8 ft. 8 in.; width of cab outside, 8 ft. 1 in.; length of cab outside, 12 ft. 4½ in.; distance between bolster centers, 12 ft. 6 in.

### Nova Scotia Tramways and Power Co's. Taxation.

By an act passed by the Nova Scotia Legislature in 1916, the Halifax City Council was authorized to prepare provisions amending sections 369 to 483, both inclusive, of the city charter. These sections relate to taxation within the city. As soon as the new sections were prepared and approved by the city council, they were to be submitted to the N.S. Government for approval. This has now been done, and by an order in council dated Aug. 24, the new sections have been approved, and are declared to be incorporated in the Halifax charter, and to be in full force and effect. One of the new provisions, sec. 374, deals with the Nova Scotia Tramways & Power Co. and enacts that the company, "in addition to the taxation by law imposed upon the real property owned by it, including the real property formerly the property of the People's Heat & Light Co., Ltd., and of the Halifax Gas Light Co., and the sum of 4% on the gross tolls received from the operation of its railway, and the license fee of \$1,000 imposed by sec. 33, chap. 107 of the Acts of 1895, and water rates, shall pay half yearly to the city on May 1 and Nov. 1, in each year, a sum equal to 2% on its gross receipts during the half year preceding, from the supply of electric energy and gas for lighting or power, and such sum shall constitute a lien or charge upon all the property, real and personal, and the franchises of the company, and may be collected in the same manner and with the same remedies, and at the same time, as the city's other rates and taxes; and in addition to such remedies, if the said sum remains unpaid for three months after May 1 or Nov. 1 in any year, the Supreme Court or a judge thereof may appoint a receiver of the tolls and income of the company, who shall, out of the moneys so received by him, pay to the city the amount of the said taxes then in arrear. The company shall half yearly, on or before Nov. 1 and May 1, furnish the city treasurer with a statement of gross receipts shewing the amount derived from electricity and gas respectively, verified by the oath of the superintendent or manager, and for the purpose of verifying such statement the city may, if it deems fit, examine the company's books and accounts."



# Marine Department

## Steel Cargo Steamships Building for Dominion Government.

### The 5,100 Ton Type of Steel Cargo Steamship.

Canadian Railway and Marine World for August and September respectively contained full technical descriptions of the 4,300 and 3,750 ton types of steel cargo steamships for the Dominion Government, which are to be built under the shipbuild-

lifting leads for the derrick posts.

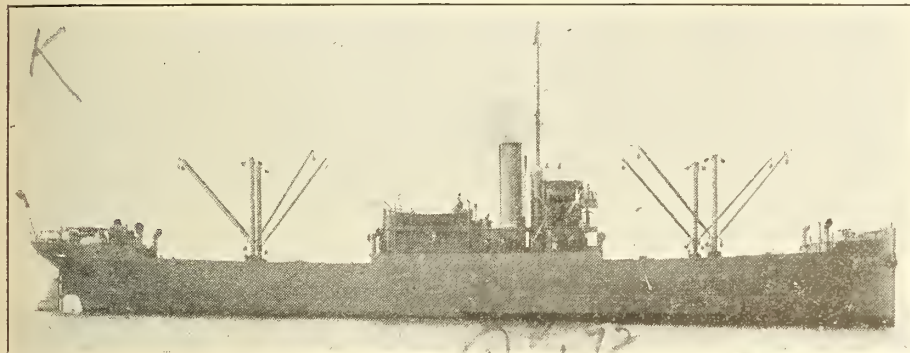
The anchor arrangements will be as usual in this class of vessel, viz., as follows: 2 bower anchors, stockless type, 48½ cwt.; 1 bower anchor, stockless type, 41¾ cwt.; 1 stream anchor, ex stock, 13 cwt.; 1 kedge anchor, ex stock, 5¾ cwt.; 210 fathoms 2 in. stud link chain and the

compound wound, coupled direct to the engine shaft. The various leads will be on the double wire system, the wiring in the engine and boiler rooms being armored and in the accommodation lead covered. Six circuits will be provided, viz.: 1, navigation; 2, wireless; 3, machinery spaces; 4, accommodation amidships; 5, accommodation aft; 6, cargo holds.

The vessels will be provided with the usual armament, as required by law, and provision will be made for defence from floating mines.

The life saving appliances will be in accordance with the requirements of the Canadian Board of Steamship Inspection, and comprise: 2 lifeboats, 24 x 7½ x 3 ft.; 1 lifeboat, 20 x 6½ x 2¾ ft.; 1 dinghy, 18 x 5½ x 2 ft.; 2 lifeboats, 17½ x 8 ft., and the usual lifebelts and lifebuoys.

The ships' officers will be placed in deckhouses at the forward end of the bridge deck. The deckhouses will contain 1 cabin for each officer, wireless cabin, dining saloon, pantry, baths and water closets and the usual stores. An internal stairway will lead to the captain's quarters and chart room on the upper bridge, which will be surmounted by the flying bridge and wheel house. The engineers and petty officers will be housed in side houses, abreast of the engine and boiler casings, the mess room and pantry being arranged for at the after end of the engine casing on bridge deck. A petty officers' mess room will be provided at the



Steel cargo steamship War Wizard, built for British Government by Collingwood Shipbuilding Co.

ing policy of the Minister of Marine, Hon. C. C. Ballantyne, as first detailed in Canadian Railway and Marine World for February. Following is a description of the 5,100 ton d.w. type.

The principal dimensions of the 5,100 ton type will be:

Length b.p.	331 ft.
Breadth moulded	46 ft. 6 in.
Depth moulded	25 ft. 6 in.
Draft load	21 ft. 8 in.
Deadweight about	5,100 tons
Trial speed	12 knots
Complement	45

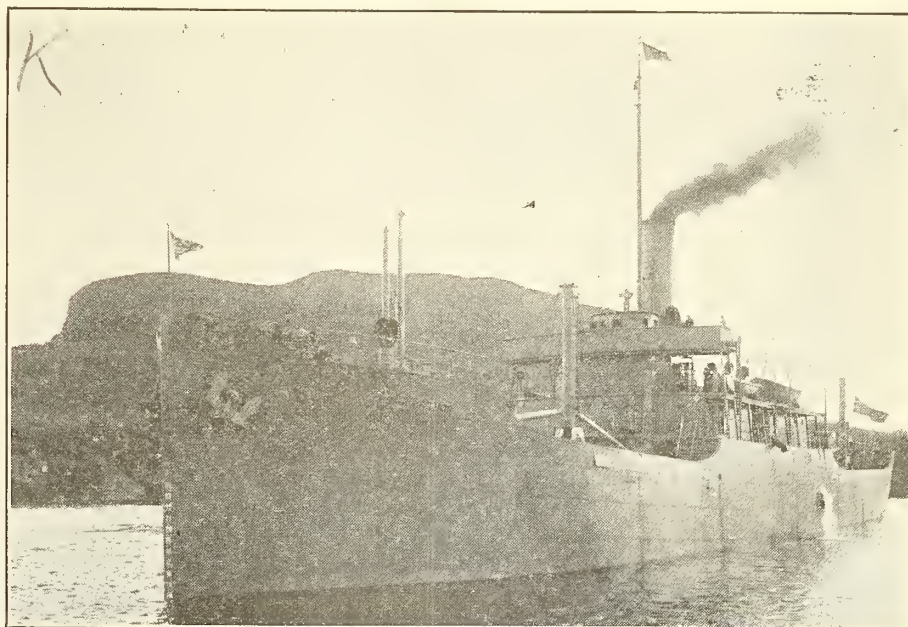
The vessels will be of the single deck type, with poop, bridge and forecandle, straight stem, elliptical stern, and will be subdivided into 16 watertight compartments, by 7 watertight transverse bulkheads and divisions. A double bottom, 39 in. deep, with solid floors on alternate frames, will be fitted from the collision bulkhead to the after peak bulkhead, each compartment being connected in the usual way to the steam suction.

The vessels are designed on the ordinary transverse system of framing, the frames and beams being of bulb angle, spaced 24½ in. apart. No side stringers will be fitted in the holds, the shell plating being increased by way of compensation. The main deck, poop, bridge and forecandle decks will be of steel sheathed with British Columbia fir decking in way of the accommodation.

The cargo hatches will be arranged for the speedy handling of bulk cargoes, and will be of the following dimensions: Nos. 1, 2, 3 and 4 hatches, 26½ x 23 ft. each; after hold and reserve bunker, 10¼ x 18 ft. The usual pillar arrangement in the holds will be dispensed with, to facilitate loading and unloading. Each cargo hatch will have adjacent 2 collapsible derrick posts, provided with 2 derricks capable of lifting 5 tons each. The derricks to the after main hold will have a lifting capacity of 3 tons. The 10 cargo winches will be of the Clarke-Chapman type, 7 in. diameter by 12 in. stroke, 2 being placed at each hatch, one on the poop deck and one on the bridge deck. One pole mast with telescopic top mast will be fitted amidships, carrying the wireless aerials and

usual stream line, tow line, hawsers and warps. The windlass, which will be on the forecandle head, will be of the Clarke-Chapman patent grip type, working under reduced steam pressure.

The steam steering engine will be placed in a deckhouse on the poop deck. The gear will be of the patent guided segment type, having cylinders about 9 in.



Steel cargo steamship War Hather, built for British Government by Port Arthur Shipbuilding Co. The photograph was taken as the vessel was leaving Fort William on Aug. 27 with a cargo of grain for Montreal, where she was turned over to the Imperial Munitions Board.

diameter by 12 in. stroke, controlled from the navigating position in wheelhouse by telemotor gear.

The electric generating set will be located in the engine room and will have a capacity of 10 k.w. The engine will be of the single cylinder enclosed type, with cylinder 8 in. diameter by 6 in. stroke, running at about 350 revolutions a minute. The dynamo will be of the four pole type,

after end of the bridge erection, with pantry adjoining. The hospital will be located under the forecandle. In accordance with what is now recognized practice in modern cargo vessels, the seamen and firemen will be housed under the poop deck aft, in commodious compartments each accommodating two men. Separate mess rooms and stores will be provided, and all requirements such as lighting,



ventilation and sanitation will be in conformity with the British Board of Trade regulations governing the survey of masters and crew spaces. All the accommodation will be steam heated throughout.

The cold storage compartments will be at the after end of the bridge erection, with the refrigerating engine adjoining.

wood, Ont. The first keels will be laid shortly, and delivery of the first of the type is expected by June, 1919.

**Orders for Steamships.**—We are officially advised that the Marine Department has given the following orders for steel cargo steamships in addition to those mentioned in our previous issues:

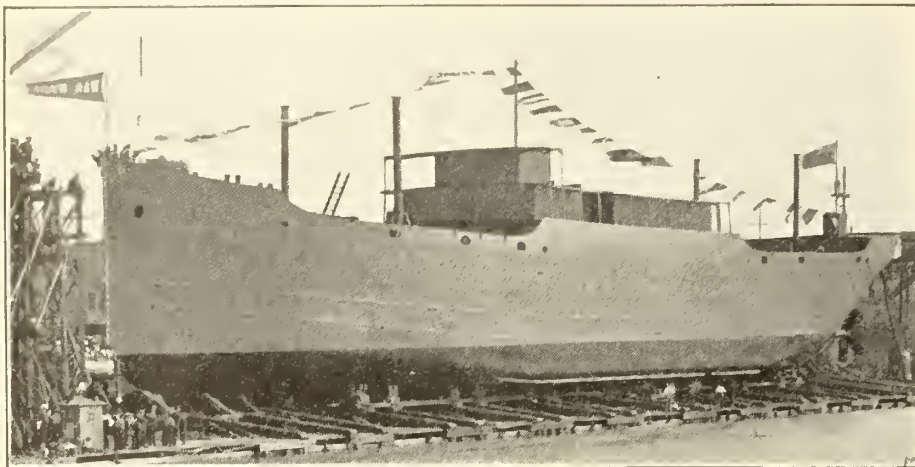
Halifax Shipyards, Ltd., Halifax, N.S.,

have the following dimensions: Length over, all 261 ft., beam 43½ ft., depth moulded, 26 ft. They will be equipped with triple expansion engines, with cylinders 18, 20 and 50 ins. diam. by 36 ins. stroke, supplied with steam by two boilers 14 ft. diam. by 10½ ft. long, with forced draft, for a speed of about 9½ knots when fully loaded. They will be of the usual poop, bridge and forecastle design, with four hatches, four collapsible derrick posts and one mast amidships. A full description of this type of vessel was given in our last issue.

**Davie Shipbuilding & Repairing Co.,** Lauzon, Que., intends to lay the keels of the two steel cargo steamships of 5,100 deadweight tons capacity for the Dominion Government during the first half of October, and anticipates launching them about July, 1919. A detailed description of this type of vessel is given in this issue.

**Ascania Salvage Co., Ltd.,** has been incorporated under the Dominion Companies Act, with \$20,000 capital, and office at Montreal, to carry on the business of salvors and wreckers of ships and vessels of all kinds, and in connection therewith to own and operate steam and other vessels. The officers are—President, W. F. Walsh, Purchasing Agent, Halifax Shipyards, Ltd.; Secretary, H. McElliot, secretary to R. M. Wolvin, President, Montreal Transportation Co., and Vice President and General Manager, Halifax Shipyards Ltd.; and Treasurer, Jos. Leonard, chief accountant, Halifax Shipyards, Ltd. The company was incorporated with the intention of salvaging the s.s. *Ascania*, which was wrecked off Newfoundland earlier in the year.

**Shipbuilding and Ship Losses.**—Washington, D.C., press dispatch:—"Deliveries of completed vessels from shipyards in the U.S. during July and August, were more than enough to offset the submarine losses of the U.S. since the beginning of the war. Ships sunk aggregate 541,925 deadweight tons, while new ones put in service in the two months aggregated 610,779 deadweight tons. The total allied



Steel cargo steamship *War Weasel*, built for British Government by British American Shipbuilding Co., Welland, Ont., just prior to the launching.

The fresh water tanks will have a capacity of 2,200 gallons each, and will be connected to a distiller, having a capacity of 1,000 gallons per 24 hours.

**Engines and Boilers.**—The propelling machinery will be of the triple expansion, surface condensing type, having cylinders 25 x 41 x 68 in. by 45 in. stroke, the air feed and bilge pumps being worked from the main engine. The air pump will be 21 in. diameter by 24 in. stroke, the feed pumps 3½ in. diameter by 24 in. stroke, and the bilge pumps 3½ in. diameter by 24 in. stroke.

The main circulating pump will be of the centrifugal type, driven by an enclosed forced lubrication engine. The general service pump and feed donkey will be of the simplex type, with steam cylinders 9½ in. diameter, water cylinder 7 in. diameter, and a stroke of 18 in. The ballast pump, also of the simplex type, will have cylinders 10½ in. diameter, water cylinder 14 in., and a stroke of 18 in.

The reversing gear will be of the all round type and a separate steam engine will be provided for turning in port.

An evaporator of the Weir type, capable of supplying 25 tons of water per 24 hours, will be provided, and there will be the usual filter, heater, auxiliary condenser, drain tank, telegraphs, etc.

Steam will be generated in 3 single ended boilers 14 ft. diameter by 11½ ft. long, designed to work under Howden's system of forced draft and having a working pressure of 180 lb. a square inch.

The forced draft fan will be of the double inlet type, driven by a single cylinder open type engine situated in the engine room.

The vessels are designed to Lloyds 100 A1 class and will be built under special survey and the departmental constructors. The trials will consist of a dock trial of 4 hours duration, to be followed later by an official sea trial of 6 hours duration, with the vessels fully loaded.

Orders have been given by the Marine Department for 12 of these steel vessels, viz., 4 to Wallace Shipyards, North Vancouver, B.C.; 4 to Tidewater Shipbuilders, Ltd., Three Rivers, Que.; and 4 to Collingwood Shipbuilding Co., Colling-

wood, Ont. 2 of 8,100 tons d.w. capacity.

This makes orders for 24 vessels given to date as follows, the tonnage stated being dead weight in each case:—

	No.	Tons each	Total tonnage
British-American Shipbuilding Co., .....	2	4,300	8,600
Canadian Vickers, Ltd.	1	4,300	4,300
Canadian Vickers, Ltd.	1	8,100	8,100
Collingwood Shipbuilding Co., .....	4	3,750	15,000
Davie Shipbuilding & Repairing Co., .....	2	5,100	10,200
Halifax Shipyards, Ltd.	2	8,100	16,200
Port Arthur Shipbuilding Co., .....	2	3,400	6,800
Tidewater Shipbuilders, Ltd., .....	4	5,100	20,400
Wallace Shipyards, Ltd.	2	4,300	8,600
Wallace Shipyards, Ltd.	4	5,100	20,400
	24		118,600



Steel cargo steamship *War Witch*, built for British Government by Collingwood Shipbuilding Co. From photograph taken immediately after the launching.

It is said that a further order for two vessels of about 10,500 tons d.w. capacity each will probably be given Halifax Shipyards, Ltd., shortly.

**Collingwood Shipbuilding Co.,** Collingwood, Ont.—The steel steamships of 3,750 tons each, which the Dominion Government has ordered from this company will

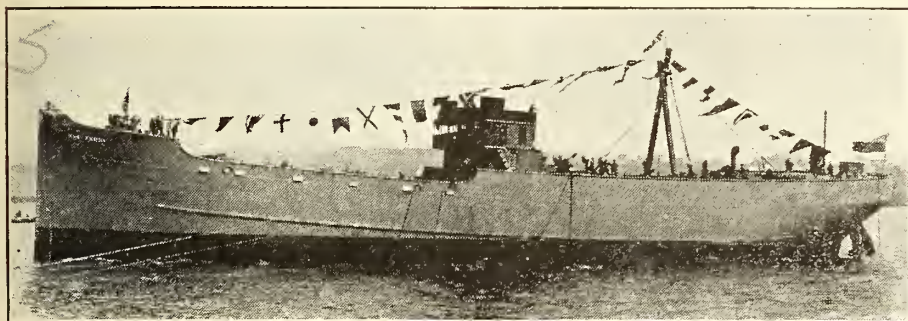
and neutral losses during the war have amounted to 21,404,913 deadweight tons, while new allied and neutral construction has totalled 14,247,825 tons. With tonnage of enemy ships received by the allies added to this total, the net losses during the entire war period is shown to be 3,362,088 deadweight tons."



# Cargo Steamship Building in Canada for British Government.

**Launchings of Steamships.**—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to Sept. 8, giving in each case the date of the launching, the name of the steamship, the name of the builder and the deadweight tonnage:—

Steel Steamships.		
May 18, 1917—	War Dog, Wallace Shipyards	
	North Vancouver, B.C.....	4,500
July 9, 1917—	War Wasp, Nova Scotia Steel & Coal Co., New Glasgow, N. S. ....	1,800
Aug. 19, 1917—	War Fish, Port Arthur Shipbuilding Co., Port Arthur, Ont.	4,300



Steel Cargo Steamship War Fundy, built for British Government.

Nov. 3, 1917—	War Dance, Port Arthur Shipbuilding Co., Port Arthur, Ont.	3,400
Mar. 16, 1918—	War Camp, J. Coughlan & Sons, Vancouver, B.C. ....	8,800
Mar. 23, 1918—	War Power, Wallace Shipyards, North Vancouver, B.C.	4,600
Apr. 3, 1918—	War Isis, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
May 8, 1918—	War Wizard, Collingwood Shipbuilding Co., Collingwood, Ont.	2,900
May 21, 1918—	War Bee, Nova Scotia Steel & Coal Co., New Glasgow, N.S. ....	2,400
May 27, 1918—	War Osiris, Port Arthur Shipbuilding Co., Port Arthur, Ont.	3,400
June 8, 1918—	War Earl, Canadian Vickers Ltd., Montreal .....	7,000
June 29, 1918—	War Duchess, Canadian Vickers Ltd., Montreal .....	7,000
July 20, 1918—	War Hathor, Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	3,400
July 29, 1918—	War Charger, J. Coughlan & Sons, Vancouver, B.C.....	8,800
Aug. 19, 1918—	War Chief, J. Coughlin and Sons, Vancouver, B.C.....	8,800
Aug. 21, 1918—	War Weasel, British-American Shipbuilding Co., Welland, Ont.	3,500
Sept. 6, 1918—	War Witch, Collingwood Shipbuilding Co., Collingwood, Ont.	2,900

Total, 17 steel steamships.....80,900

## Wooden Steamships.

Dec. 28, 1917—	War Songhee, Foundation Co., Victoria, B.C. ....	3,080
Jan. 4, 1918—	War Nootka, Western Canada Shipyards, Vancouver, B.C....	3,080
Jan. 24, 1918—	War Yukon, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. ....	3,080
Feb. 16, 1918—	War Puget, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
Mar. 6, 1918—	War Selkirk, Western Canada Shipyards, Vancouver, B.C....	3,080
Apr. 10, 1918—	War Caribou, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
Apr. 11, 1918—	War Comox, New Westminster Construction & Engineering Co., New Westminster, B.C. ....	3,080
Apr. 11, 1918—	War Masset, Foundation Co., Victoria, B.C. ....	3,080
Apr. 13, 1918—	War Tyee, Pacific Construction Co., Coquitlam, B.C.....	3,080
Apr. 25, 1918—	War Haida, Cameron-Genoa Mills, Victoria, B.C. ....	3,080
Apr. 27, 1918—	War Cayuse, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
May 11, 1918—	War Mohawk, Quinlan & Robertson, Ltd., Quebec, Que....	3,080
May 11, 1918—	War Sioux, Port Arthur Dredging Co., Port Arthur, Ont....	3,080
May 21, 1918—	War Atlin, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
May 23, 1918—	War Tatla, Western Canada Shipyards, Ltd., Vancouver, B.C. ....	3,080
June 12, 1918—	War Skeena, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. ....	3,080
June 13, 1918—	War Seneca, Quinlan & Rob-	

	ertson, Quebec, Que.....	3,080
June 14, 1918—	War Edensaw, New Westminster Construction & Engineering Co., B.C. ....	3,080
June 15, 1918—	War Babine, Foundation Co., Victoria, B.C. ....	3,080
June 24, 1918—	War Nicola, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
June 28, 1918—	War Quebec, Quebec Shipbuilding & Repairing Co., Quebec, Que. ....	3,080
June 29, 1918—	War Ontario, Toronto Shipbuilding Co., Toronto.....	3,080
July 5, 1918—	War Huron, Fraser, Brace & Co., Montreal .....	3,080
July 5, 1918—	War Erie, Fraser, Brace & Co., Montreal .....	3,080
July 6, 1918—	War Casco, Western Canada Shipyards, Ltd., Vancouver,	

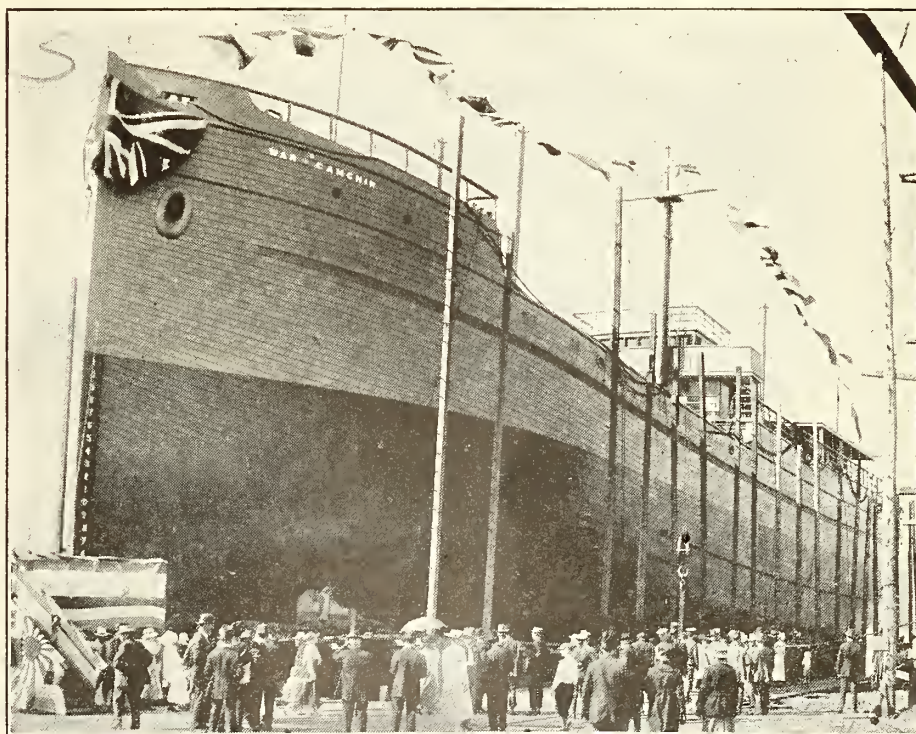
Aug. 31, 1918—	War Camchin, Foundation Co., Victoria, B.C. ....	3,080
Sept. 7, 1918—	War Sorel, Quebec Shipbuilding & Repair Co., Quebec.....	3,080
Sept. 8, 1918—	War Nanoose, Foundation Co., Victoria, B.C. ....	3,080

Total, 37 wooden steamships.....113,960  
Total deadweight tonnage of 17 steel and 37 wooden steamships launched, 194,860.

**Vessel Assignments.**—It was announced at Victoria, B.C., that all wooden steamships under construction in British Columbia for the British Government, have been assigned to various firms for operation on the government's behalf. Of the 27 vessels built, or under construction in that province, 8 are said to have been assigned to English firms, and 19 to Scottish companies.

**Steamships Ordered and Launched.**—The following table shows the number of steel and wooden steamships ordered by the Imperial Munitions Board in Canada for the British Government and the number launched to Sept. 8, with the deadweight tonnage and the name of the builder in each case. The two vessels mentioned under the names of Dingwall, Cotts & Co. and the Port Arthur Shipbuilding Co., through subcontract, were being built for other owners when the general orders were placed, and taken over for the British Government. In addition to the foregoing, the car ferry steamship Leonard, 3,363 tons, was bought from the Dominion Government.

Steel Steamships.		Total	
Contractor.	Ordered	deadweight capacity tons	Launched tons
British-American Shipbuilding Co., Welland, Ont. . .	3	10,500	1
Canadian Allis-Chalmers, Ltd., Bridgeburg, Ont.	4	14,000	—

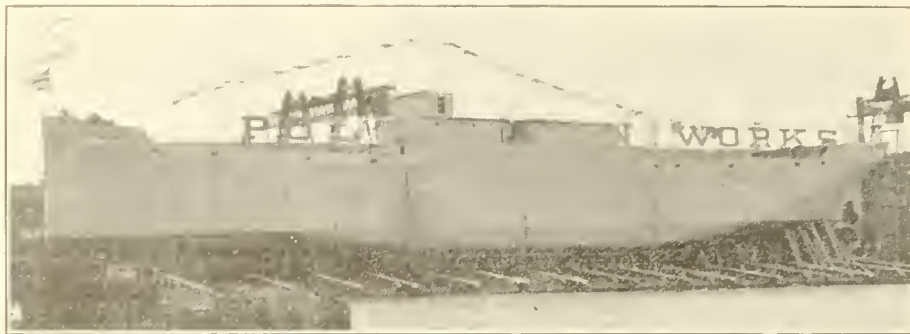


Wooden cargo steamship War Camchin.

Aug. 22, 1918—	War Tanoo, Western Canada Shipyards, Vancouver, B.C....	3,080	Canadian Vickers Ltd., Montreal..	4	28,000	2	14,000
Aug. 24, 1918—	War Fundy, Grant & Horne, St. John, N.B. ....	3,080	Collingwood Shipbuilding Co., Collingwood, Ont. . .	2	5,800	2	5,800
Aug. 26, 1918—	War Kitimat, New Westminster Construction & Engineering Co., New Westminster, B.C. ....	3,080	J. Coughlan & Sons, Vancouver, B. C. ....	9	79,200	3	5,800



Dingwall, Cotts & Co., Vancouver, B.C. ....	1	4,500	1	4,500
Midland Shipbuilding Co., Midland, Ont. ....	3	10,200	—	—
Nova Scotia Steel & Coal Co., New Glasgow, N.S. ...	2	4,200	2	4,200
Polson Iron Works, Ltd., Toronto ...	6	21,000	—	—
Port Arthur Shipbuilding Co., Port Arthur, Ont. ...	6	20,400	5	17,000
Port Arthur Shipbuilding Co. (through subcontract) .....	1	4,300	1	4,300



Steel Cargo Steamship War Taurus, for British Government.  
Just prior to launching by Polson Iron Works, Toronto.

Wallace Shipyards, Ltd., North Vancouver, B.C. ....	2	9,200	2	9,200
Totals .....	43	211,300	19	88,900
<b>Wooden Steamships.</b>				
		Total deadweight capacity		Total deadweight capacity
Contractor.	Ordered	tons	Launched	tons
Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. ....	4	12,320	4	12,320
Foundation Co., Victoria, B.C. ....	5	15,400	5	15,400
Fraser, Bruce & Co., Montreal ..	4	12,320	3	9,240
Grant & Horne, St. John, N.B. ...	2	6,160	1	3,080
Great Lakes Dredging Co., Port Arthur, Ont. ...	2	6,160	1	3,080
Wm. Lyall Shipbuilding Co., Vancouver, B.C. ...	6	18,480	6	18,480
New Westminster Construction & Engineering Co., New Westminster, B.C. ....	4	12,320	3	9,240
Pacific Construction Co., Coquitlam, B.C. ....	2	6,160	2	6,160
Quebec Shipbuilding & Repair Co., Isle of Orleans, Que. ....	2	6,160	2	6,160
Quinlan & Robertson, Quebec, Que. ....	4	12,320	3	9,240
Southern Salvage Co., Liverpool, N.S. ....	1	3,080	—	—
Three Rivers Shipyards, Ltd., Three Rivers, Que. ...	2	6,160	—	—
Toronto Shipbuilding Co., Toronto	2	6,160	1	3,080
Western Canada Shipyards, Ltd., Vancouver, B.C. ...	6	18,480	6	18,480
Totals .....	46	141,680	37	113,960

**British-American Shipbuilding Co., Welland, Ont.**—The s.s. War Weasel, the launching of which was mentioned in our last issue, was the first of the three steel cargo steamships to be built by this company for the British Government under order of the Imperial Munitions Board. The second one is expected to be ready for launching early in October, and the keel of the third was laid on the berth occupied by the War Weasel, immediately after the launch of that vessel.

**Canadian Vickers, Ltd., Montreal.**—The fourth launching of steel steamships since the opening of the St. Lawrence navigation, took place when the s.s. War Faith

was launched by the Governor General, Sept. 28. She is a sister vessel of the War Earl and War Duchess, both launched by the company in June.

**Collingwood Shipbuilding Co., Collingwood, Ont.**—The second of the two steel steamships ordered from this company by the Imperial Munitions Board for the British Government, was launched, Sept. 6, and named War Witch. She is of 2,900 ton deadweight capacity, and similar to the s.s. War Wizard, which was launched May 8.

**J. Coughlan & Sons, Ltd., Vancouver,**

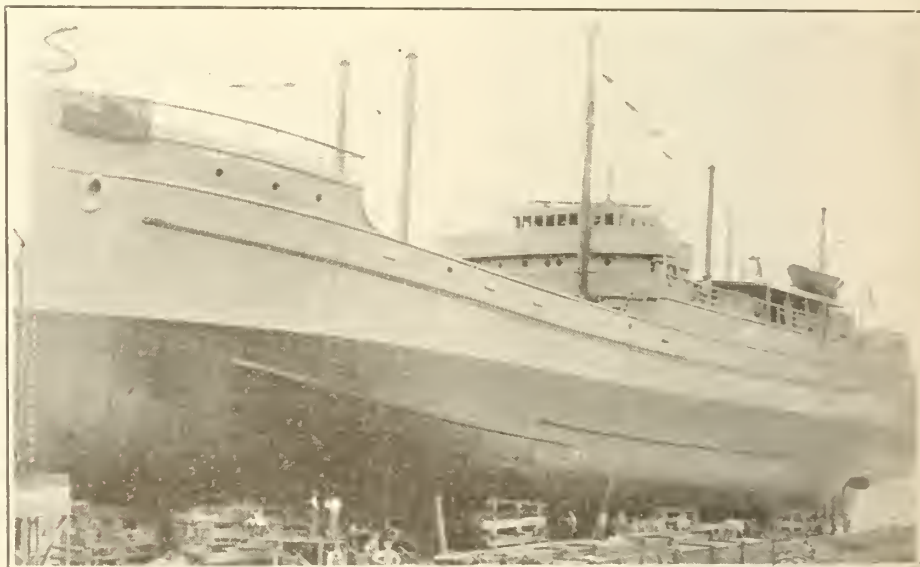
ately after the launching, but it is not anticipated that she will be launched until early in 1919.

**New Westminster Construction & Engineering Co., New Westminster, B.C.**—The third of the 4 wooden steamship hulls under construction for the British Government, under order from the Imperial Munitions Board, was launched Aug. 26, and christened War Kitimat, by Miss Janet Gray, daughter of the Mayor.

**Polson Iron Works, Ltd., Toronto.**—The first of the 6 steel steamships ordered by the Imperial Munitions Board for the British Government, was launched Sept. 19, and christened War Taurus, by Lady Flavell, wife of the Chairman of the Imperial Munitions Board. The building of this vessel was somewhat delayed, owing to labor troubles in some departments, which are forming the subject of enquiry by a board of conciliation. The War Taurus is 261 ft. long, 43½ ft. beam, with a moulded depth of 23 ft. She is built under British Corporation regulations, and equipped with triple expansion engines with cylinders 20½, 33 and 54 ins. diam., by 36 ins. stroke, 2,250 h.p., and supplied with steam by 2 Scotch boilers 12 ft. long by 14 ft. diam. at 180 lbs.

**Quebec Shipbuilding & Repair Co., Quebec, Que.**—The second of the 2 wooden steamship hulls, built under order from the Imperial Munitions Board for the British Government at this yard, was launched Sept. 7, and named War Sorel, being christened by Mrs. R. A. Carter, wife of the company's Managing Director.

**Quinlan & Robertson, Quebec, Que.**—The fourth wooden steamship hull built at this yard under order from the Imperial Munitions Board for the British Government was launched Sept. 23, and named War Matane. This completes the order placed with this firm.



Wooden Cargo Steamship War Tanoo, for British Government.  
Just prior to launching by Western Canada Shipyards, Ltd., Vancouver, B.C.

tish Government, at this yard, was launched Sept. 8, and named War Nanoo. The s.s. War Camchin, which was mentioned in our last issue as having been launched Aug. 8, was not launched until Aug. 31.

**Grant & Horne, St. John, N.B.**—The first of the two wooden steamship hulls ordered by the Imperial Munitions Board for the British Government, was launched at this yard Aug. 24, and named War Fundy, by Mrs. Carvell, wife of the Dominion Minister of Public Works. The keel of the second hull was laid immedi-

**Western Canada Shipyards, Ltd., Vancouver, B.C.**—The s.s. War Tanoo, the last of the wooden steamship hulls to be built by this company to the Imperial Munitions Board's order for the British Government, was launched Aug. 22.

**Henriette Ship Co., Ltd.,** has been incorporated under the Dominion Companies Act, with \$100,000 capital, and office at 626 Pender St. West, Vancouver, B.C., to own and operate steam and other vessels and to carry on a general navigation and transportation business.



## General Shipbuilding Notes Throughout Canada.

**Annapolis Shipbuilding Co., Annapolis Royal, N.S.,** launched a tern schooner of 1,100 tons during September, and expects to launch one of about 1,000 tons early in December. It is reported that a repair dock is under construction, suitable for handling vessels up to 5,000 tons.

**Barrington, N.S.**—Local financial interests are reported to be considering the question of establishing a shipyard at this point, to revive the shipbuilding industry

per engine rooms. Included in the deck machinery equipment are: double cylinder, two drum steam trawl winch with reversing engines; double cylinder single drum steam hoister with non reversing engines, and a steam windlass. The vessels are of the following dimensions: length over all 143 ft., breadth moulded 22½ ft., displacement 630 tons. Of the whole order, 9 vessels have been launched, and the balance will be

Co., and two are for H. C. Hansen, of Porsgrund, Norway.

**Comeauville Shipbuilding Co., Comeauville, N.S.,** has launched the schooner Ruth Hickman for La Have owners. Another schooner has been laid down. She will be 112 ft. long, with a breadth of 23 ft., and a depth of 13 ft., and will be equipped with a 100 h.p. engine burning crude oil.

**Connors Bros., Blacks Harbor, N.B.**—Three trawlers are reported to be under construction by this firm, and it is said that they are to be equipped with Fairbanks-Morse oil motors of 200 b.h.p.

**J. F. Deveau, Meteghan, N.S.**—It was expected to launch a schooner during September for owners at La Have, N.S. The schooner Harold B. Cousins is under repair at this yard, prior to being handed over to New York purchasers.

**Dominion Shipbuilding Co., Toronto.**—The first vessel to be built in this company's new yards, was launched Sept. 26 and christened St. Mihiel, by Mrs. William Inglis. She is a bulk freighter of the Frederickstad type, with deadweight capacity of 4,300 tons. Her dimensions are: length over all 261 ft., breadth moulded 43½ ft., depth moulded 28 ft. 2 in. She is equipped with triple expansion engines, with cylinders 20, 33 and 54 in. diam. by 40 in. stroke, 1,500 h.p., supplied with steam by 2 Scotch boilers, each 14 x 12 ft., built by John Inglis & Co., Toronto. This vessel is being completed on builder's account, and negotiations were under way during the last few days of September for her acquirement for ocean service. In general design and construction she is similar to the steamships Angouleme and Troja built by the Thor Iron Works, Ltd., which business is now



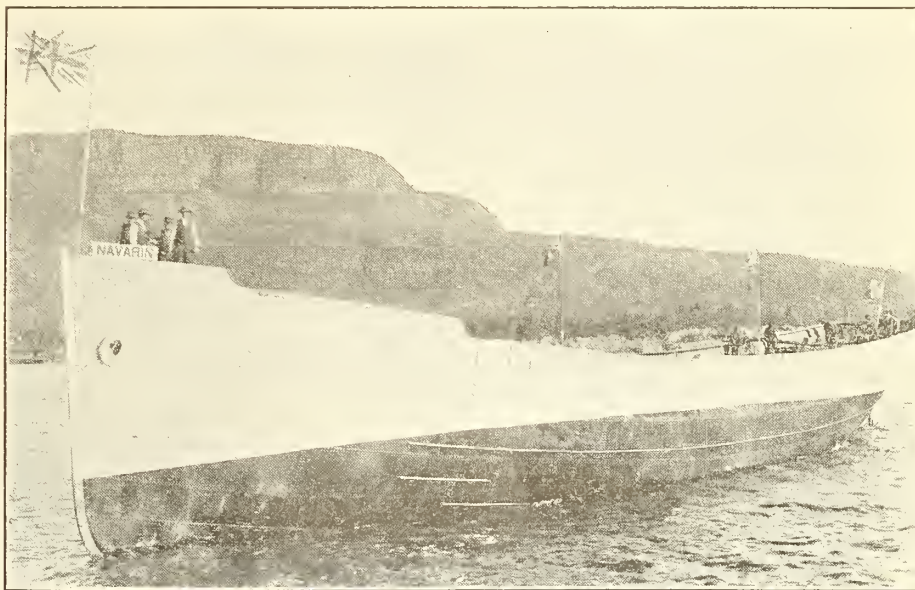
Steamship T. P. Phelan for Canada Steamship Lines, Ltd., built by Tidewater Shipbuilders, Ltd.

where in past years many notable schooners were built.

**Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.**—At a special meeting of shareholders, Aug. 15, a resolution was passed that the company be wound up voluntarily forthwith, and Herbert Wright was appointed liquidator. This was confirmed at a meeting held Aug. 30. The company was organized in 1916 as an outcome of the agitation for increased vessel production within British Columbia for provincial needs. An order was placed with it by Canada West Coast Navigation Co. and allied interests, for 6 auxiliary powered schooners, of a comparatively new type, and these were successfully completed and placed in service, chiefly to the Antipodes. The company was subsequently given a contract for 4 wooden hulls for steamships, by the Imperial Munitions Board, for the British Government, and these have been completed, so far as the company's work is concerned, the last one, War Stikine, being launched July 27. At that launching, J. H. Price, President, stated that he could not give particulars as to the company's future, but it could be said that the yard would be in full swing again shortly.

**Canadian Car & Foundry Co., Fort William, Ont.,** as mentioned in previous issues, is building 12 mine sweepers for the French Government. They are of the single screw, steel steam trawler type, and are built to the full requirements of Lloyd's register, class 100 A1 steam trawlers, single deck with raised quarter and forecastle decks and steel deck house. The top of the boiler house and winch casing form the navigating bridge, on which is a steel house containing the captain's room and wheel house. On top of the deck house aft is a steel house for the wireless telegraph operator, with platforms at sides for lifeboats. Two pole masts of Oregon fir are fitted, the foremast stepped in cast housing on the main deck, and the main mast is housed by the deck house aft. Steam steering engines are installed in the up-

launched shortly, and the whole delivered before the close of lake navigation. The vessels are being built in a specially constructed shed, and are moved from this to a transfer table, and thence to a chute whence they glide nearly a quarter of a mile, a decline of about 60 ft., into the mooring basin in the Kaministiquia River.



French Mine Sweeper Navarin, built by Port Arthur Shipbuilding Co., Ltd.

**Cholberg Ship Co., Victoria, B.C.**—The laying out of a shipyard in the Mud Bay section of the old Songhees Reserve, is proceeding rapidly, the building ways having been rushed so that keels were laid during the second week of September. It is stated that four vessels will be built simultaneously, and that the company has sufficient contracts to keep the yard busy for two years. One vessel is for the Porsgrund Steamship & Sailing

Co., of which L. Dahlgren is Vice President and General Manager.

**Fauquier & Porter, Hantsport, N.S.**—The schooner Margaret F. Dick, which was launched at this yard Aug. 24, as mentioned in our last issue, for the British Colonies Transportation Co., St. John, N.B., is of the following dimensions: Keel 178 ft., breadth 39½ ft., depth of hold 18½ ft. The keel is of Douglas



fir and the frames of native spruce. The masts are of Douglas fir, which is also used in the finishing of the cabins. The vessel has a registered tonnage of 1,012 44/100. The builders have a second schooner of the same model and tonnage on the stocks, for completion in November, and they have also laid the keel of a three masted schooner with keel of about 142 ft.

Foundation Co., Victoria, B.C., has taken over the yard recently operated by Cameron-Genoa Mills Shipbuilders, Ltd., at Point Ellice, and this is now known as the company's no. 2 yard. The keels of 2 wooden vessels for the French Government were laid at this yard, Sept. 9, and the keel of one similar vessel for the same owners was laid on the same day, at the no. 1 yard. These are the first of an order for 20 such vessels for the French Government, and it has been announced that all the vessels will be fully equipped in the company's own yards.

Press reports state that this order has been secured on a cost plus percentage basis, and that there is some local resentment at this, as it leaves the building company open to offer higher wages, and pay more for materials to secure delivery, thus unsettling the labor market, and generally placing other builders at a disadvantage.

H. T. LeBlanc, Wedgeport, N.S.—It was expected that the trawler, which is being built at this yard for J. N. Rafuse & Sons, Conquerall Bank, would be launched about the last week in September. She is 157 ft. long overall, 27 ft. beam and 13 ft. deep. A contract has been entered into for the construction of another similar vessel, about 6 ft. longer, and the keel has been laid.

Wm. Lyall Shipbuilding Co., North Vancouver, B.C., has an order from the French Government for 8 wooden steamships of 1,500 tons deadweight capacity. They will be 205 ft. over all and well decked, will be equipped with 550 h.p. twin engines and will be delivered by June, 1919.

A. McKenzie, River John, N.B.—Work is progressing on a 600 ton schooner, and it is expected that it will be ready for launching early in October.

C. H. McLennan, River John, N.B.—A schooner of 125 tons was launched at this yard, Aug. 31, and the keel of another of larger size has been laid.

gross and 345 tons register, and is classified with Bureau Veritas with rating for 12 years. She is reported to have been sold to the French Government.

Meteghan, N.S.—The tern schooner Scotia Bell, which was launched recently, is equipped with a bulldog engine of 8 h.p. and patent anchors. She is 414 tons.

John L. Mullen Construction Co., Prince Rupert, B.C.—The leasing of the Grand Trunk Pacific Ry. floating dry dock and plant at Prince Rupert, B.C., for a term of years, was mentioned in our last issue. We are advised that the lease covers the entire premises, and in addition a sufficient area adjoining the dry dock and shipbuilding plant property, for the laying down of five ways. It is said that it is not the company's intention to utilize the ship shed, which is ready for wooden vessel building, until the steel shipbuilding work is fully organized and in operation.

W. Naugler, Bridgewater, N.S., is building a schooner similar to the one named William Naugler, launched by him recently.

New Westminster Construction & Engineering Co., New Westminster, B.C., is reported to have an order from the

French Government for 5 wooden steamships of 1,500 tons deadweight capacity.

Nova Scotia Shipbuilding & Transportation Co., Liverpool, N.S., is building on its own account, two small three masted schooners of about 200 tons net. The first is expected to be ready for sea by Oct. 15, and the second by Dec. 1. Since this company commenced business about 18 months ago, exclusive of the above mentioned two vessels, it has built five vessels, which is claimed as a record for Nova Scotia yards. The first vessel, the Bianca, was launched in June, 1917. She is a three masted vessel, equipped with semi Diesel oil burning engine of 100 h.p., and 700 tons deadweight capacity. She was torpedoed by a German submarine in Aug., 1918, and abandoned by the crew. She, however, did not sink, but was brought into port and is being made ready for sea again. The Ruby W. was launched Nov. 10, 1917, and is of the same model as the Bianca. She was built for W. Wrightson, of Alabama, and later sold to Newfoundland parties. The Abomama was launched Mar. 21, for Peter Yee Wing & Co., Sydney, Australia, and arrived there recently after a successful trip. She is of 800 tons and equipped with auxiliary power. The two masted fishing vessel Sadie Knickle, owned in Lunenburg, N.S., 100 tons net, was launched May 15, and on Aug. 5, the auxiliary powered schooner James G. Joy, 900 tons deadweight capacity, was launched for Job Bros., St. John's, Nfld. H. A. Frank is Managing Director of the company, and J. S. Gardner is master builder.

Pacific Construction Co., Coquitlam, B.C., is reported to have an order from the French Government for 2 wooden steamships of 1,500 tons deadweight capacity each.

The Quebec Shipbuilding & Repair Co., Quebec, Que., is reported to be negotiating with foreign interests for the building of wooden steamships, of a somewhat similar type to those it has built for the British Government through the Imperial Munitions Board. The company is building a 700 ton schooner, similar to the M. P. Connolly, which was wrecked near Sable Island, Aug. 19, when on her maiden voyage.

Quebec, Que.—A press report from Quebec states that T. M. Kirkwood, formerly Managing Director, Three Rivers Shipyards, Three Rivers, Que., was in Quebec recently to promote the organization of a shipbuilding company with a capital of \$30,000,000, to carry out a contract for thirty 5,000 tons wooden steamships in Quebec. This is not correct; the facts are that Mr. Kirkwood has addressed a letter to the Quebec Board of Trade, giving his views on a number of requirements necessary to develop the port to its full capacity, amongst them being the establishment of a wooden shipbuilding plant, and the construction of a number of wooden steamships for handling grain and other commodities. He also suggests that as the Dominion is primarily interested in shipping from Canadian ports, it should be possible for it to guarantee the securities of a company to carry out the scheme. There appears to be nothing tangible in the scheme, and there is little or no prospect of the Dominion Government undertaking the guarantee of securities of this nature. The Government's shipbuilding programme is already laid out, and deals with steel shipbuilding only, it having been definitely decided that it will not build any wooden steamships.

Southern Salvage Co., Liverpool, N.S., launched the schooner Drallim Aug. 27. Her dimensions are: length 133 ft.,

breadth 33 ft., depth 12 3/4 ft.; tonnage, 440 gross, 379 net. She is classed with Bureau Veritas for 12 year rating, and is owned by the builders.

Tidewater Shipbuilders, Ltd., Three Rivers, Que., is building an engine and boiler shop 250 x 100 ft., which will be equipped with up to date motor machinery. Contracts have been entered into for building of 6 engines of 2,500 h.p. each for the 5,100 ton type of steamship to be built in Canada for the Dominion Government, and also for 24 engines of 275 h.p. each for the wooden steamships under order with the Davie Shipbuilding & Repair Co., Lauzon, Que., for the French Government. It is possible that engines will also be built by this company, for the vessels which will be built for the Dominion Government by Halifax Shipyards, Ltd., with which it is intimately associated.

Toronto Shipbuilding Co., Toronto, has a contract from French interests for the construction of 10 wooden steamships of 1,000 tons each, to be built within 12 months.

Tulk, Flett & Co., St. George's, Nfld., launched a schooner early in September. She is 490 tons gross, with a deadweight capacity of about 800 tons, and is equipped with auxiliary power.

Union Shipbuilding Co., Port Union, Nfld.—The 400 ton schooner Nina L. C. was launched Sept. 6 and was christened by Hon. W. W. Halfyard, Colonial Secretary. This vessel, which is the second one of the type turned out by the builders, will be ready for her first cargo of fish early in October.

Wallace Shipyards, Ltd., North Vancouver, B.C.—The two additional shipbuilding berths at this yard are practically complete, with the travelling cranes in place. Railway tracks run between the berths, with complete facilities for handling all material.

Western Canada Shipyards, Ltd., Vancouver, B.C.—C. V. Cummings, who returned to Vancouver from the east recently, announced that the company has concluded a contract with the French Government for 5 wooden vessels of about 1,500 tons each, and that everything was in readiness at the yards for the commencement of the construction.

The Maritime Wrecking Co. Ltd., which has been brought into prominence recently by the resignation of James Carruthers from the chairmanship of the board of Halifax Shipyards, Ltd., on account of his objections as stated in Canadian Railway and Marine World for September, was incorporated under the Dominion Joint Stock Companies Act, Dec. 29, 1917, with an authorized capital of \$1,000,000, of which \$300,000 is said to have been subscribed and \$250,000 paid in. The directors are: President, R. M. Wolvin, Montreal; Vice President, F. H. Markey, K.C., Montreal; Secretary, F. S. Isard, Treasurer, Canada Steamship Lines Ltd., Montreal. Other directors: W. W. Skinner, solicitor, Montreal, and J. T. Reid, Sarnia, Ont. The Treasurer is W. E. Burke, Director and Assistant Manager, Canada Steamship Lines, and the Assistant Secretary is W. Crawford, Secretary, Montreal Transportation Co. The head office is at 14 Place Royale, Montreal, with local office at Halifax.

S. & S. Transportation & Towing Co., Ltd., has been incorporated under the British Columbia Companies Act, with \$10,000 capital, and office at Vancouver, to own and operate steam and other vessels, and to carry on a tug owning and general navigation business.



## Suggestions for Suppression of Canal Accidents.

C. H. Clark, Newmarket, Ont., wrote the Toronto Globe recently as follows:—"How long is this reckless disregard of 'safety first' to continue? On Aug. 10 the s.s. Canobie entered lock 8, Welland Canal, and struck the two head gates and carried them away, doing considerable damage, besides delaying navigation, which is of the utmost value now. On Aug. 16 the s.s. Pawnee carried away the head gates of lock 12, Welland Canal, also 6 ft. gates, drowning the lock tender and doing heavy damage to the gates, and still more to those interested in the shipping of grain, iron ore, coal, lumber, etc.

"If this regard for 'safety first' in place of 'safety first' continues, it will not be long before German enemies and sympathizers will have steamers by 'mistake' run into many other gates in different locks of the Welland Canal and Sault Ste. Marie Canal locks and gates.

"'Safety first' above all other considerations, and at any expense, should be held to for the protection of all canals, locks and gates, also of river navigation, and for the prevention of any vessels swinging across the channel and blocking navigation, as the s.s. Clemens Neiss did on Aug. 13, going out of West Neebish channel. 'Safety first' should demand all vessels to stop, say 500 to 800 ft., before reaching any lock, and make vessel owners pay for government tugs to place them inside of the canal lock.

"Soldiers guard the canal for 'safety first' against the enemy from attack. But no one guards the locks and gates against the possible enemy on board the vessel, who by 'mistake' may smash into the gates, doing damage in stopping navigation, which would result in the loss of millions of dollars, especially in the autumn. The breaking of the Sault Canal locks in the autumn would make an awful mess."

One of the foremost marine authorities in Canada, who was asked by Canadian Railway and Marine World for his opinion in regard to the letter republished above, has favored us with the following:—"The correspondent is so evidently ignorant of the real conditions on the canals that the letter scarcely requires an answer. Doubtless, however, there are many good citizens equally ignorant and it will do no harm to throw some light on the real facts.

"The suggestion is made that all vessels should be required to stop, say 500 to 800 ft., before reaching any lock, and vessel owners should be made to pay for government tugs to place them inside of the canal lock. This suggestion could not have been made by any one who had seen an ordinary full canal sized steamship in one of the ordinary sized locks. She fits much as a piston would fit a cylinder, and she was built to do so, so as to have the largest possible carrying capacity. Vessels of this size do not run much risk of causing damage to the locks, or their gates, as they are retarded by water pressure to such an extent that they could not very well strike the head gates. Furthermore, the vessel is placed in position in the lock, not by manoeuvring with its own engines, but by the use of cables and winches.

"If the list of accidents is examined, it will be found that most of the trouble is caused by the older class of smaller wooden steamboats, which have considerable freedom of action and readily reach the head gates, and may get into trouble

if they are not managed with caution. At the same time, the proposal to have these steamboats placed in the lock by a government tug would only be practicable where both steamer and tug were small enough, and if the government provided the tugs—which, by the way, it does not. The Globe correspondent might much better have suggested the method adopted with reference to certain barges which have no motive power. Many of them make their entry, and lock through, by the use of their lines, leaving the tug or towing steamboat to pass through separately. To apply this rule generally to all steamboats would necessitate provision by the government of much better appliances and of many men to receive and handle lines from the ships. At one time provision was made on the Cornwall Canal for pulling steamships through by electric power, but it was universally condemned and was finally abandoned.

"The Globe correspondent should understand that the accidents occur when a steamboat comes in contact with the head gates, as will appear from the cases cited and from any other reports. These gates, when closed, do not run straight across the canal, but meet at an angle, the apex of which is against the higher water above the lock, giving the necessary stability. If one gate is pushed very slightly up against the head of water, the other gate loses its support and falls into the lock under pressure of the water above. It is the slight displacement of one head gate, to the extent of a few inches, which causes all the trouble. A remedy for this can readily be found and many devices have been applied in different localities. Sometimes chains are attached to hold the gate in any event. Sometimes a bracket projects at the edge of each gate and rests against the other gate, even if the other is slightly displaced. The Dominion Marine Association has repeatedly urged that some such device should be installed on every pair of head gates. No doubt the government's failure to take action at the Welland Canal has been due in part to the desire to avoid accidents on a canal which was to be replaced by the new ship canal, work upon which has now been stopped during the war. Any new canal now constructed will undoubtedly have provision for safeguarding the head gates. The Panama Canal is protected, and the new Welland Ship Canal, it is understood, will also be properly safeguarded by one or other of the devices suggested.

"The trouble is not only one which could be remedied or avoided by the canal authorities, if proper provision were made for the expense, but the steamboat's difficulty is vastly accentuated in many cases by currents developed in the canal by the use of canal water for power purposes or otherwise. If the Globe correspondent watched a steamboat enter certain locks I have in mind he would marvel at the skill, nerve and good judgment displayed by the master in using his helm and his engines to counteract adverse conditions which a navigator should never be expected to have to contend with in a canal. Some of the locks are well known danger points, and many a good ship bears evidence of this in damaged plates and frames on her port or starboard bow, as well as further along her sides. This question of by-washes and currents in the canals is one constantly discussed, and the development of these currents is constantly protested against by vessel own-

ers. The Globe correspondent might take a hand in the good work of endeavoring to protect the canals for their natural purpose, that of facilitating navigation."

## Investigation into Shipbuilding Employes' Wages, Etc. in Quebec.

Canadian Railway and Marine World for September contained the Dominion Government's order in council appointing a commission to enquire into conditions, wages, etc., of shipbuilding employes in the Province of Quebec. The commission held sittings during August, and heard evidence regarding disputes which had occurred at shipyards in Montreal, Quebec, Levis, Three Rivers and Sorel. The result was that an agreement was drawn up, providing that from Sept. 1 until the conclusion of the war, there shall be a sliding scale of pay, according to the cost of living, a 9 hr. day instead of a 10 hr. day, and payment of time and a half for overtime, and double time in certain cases. Regarding the sliding scale, it is provided that after Feb. 1, 1919, the scale of pay shall be revised in accordance with any increase or decrease that has taken place in the cost of living during the preceding year, as may be shown in the official tables published by the Dominion Labor Department. All disputes arising out of the agreement are to be referred to arbitration without any halt in vessel construction.

This agreement it is announced, has been adopted by Fraser, Brace & Co., Montreal; Davie Shipbuilding & Repair Co., Lauzon, Que.; Quebec Shipbuilding & Repairing Co., Quebec, and Quinlan & Robertson, Quebec, and agreements are stated to have been signed with the employes of these firms covering the points named. It is expected that similar agreements will be signed shortly by other shipbuilding firms in the province.

## Dry Dock Tariff for Prince Rupert, B. C.

The Governor General in council has approved an amended tariff in connection with the floating dry dock at Prince Rupert, B.C., effective from Apr. 1, 1918, to the end of the war. The rates are:—

Merchant vessels (steam) on gross registered tonnage.

Merchant vessels (sailing) on net registered tonnage.

Warships on displacement.			
Tonnage.	First day.	Lay days.	
Up to 1,500 tons	\$300.	\$100.	
1,500 to 3,999 tons	.20 per ton	.10 per ton	
4,000 to 5,999 tons	.16 per ton	.08 per ton	
Over 6,000 tons	.14 per ton	.08 per ton	
Minimum charge for use of one small section separately.....	\$100.	\$35.	

Swiftsure Steamship Lines, Ltd., has been incorporated under the Dominion Companies Act, with 1,000 shares of capital stock, without nominal or par value, provided that it shall carry on business with a capital of \$24,000, and with its offices at Montreal. The objects include the owning and operation of steam and other vessels, and the conducting of a general transportation and trading business. The company is to be deemed to be a private one, under the provisions of the Companies Act.

Reid East Coast Salvage Co., Ltd., has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital, and office at Halifax, N.S., to carry on a general salvage and wrecking business, and to engage in shipbuilding and transportation.



## The Concrete Steamship Faith's First Voyage.

The concrete steamship Faith, 320 ft. long, 44 ft. 5 in. wide, and 30 ft. deep moulded, left San Francisco on Wednesday, May 22, with a cargo of salt and copper ore, bound for Seattle and Tacoma, Wash., and Vancouver, B.C. The draft forward was 21 ft. 10 in. and aft 23 ft. After rounding Point Reyes in the afternoon she encountered strong head winds with considerable sea, to which she responded very well, although a good deal of water was shipped on deck. On Thursday afternoon the wind having increased in violence and the ship shipping seas all fore and aft making about 2 knots an hour, the captain wore ship, running back to shelter cove until the storm abated.

Left shelter cove at 4 a.m. on Friday, and shortly afterwards ran into a gale; the ship was pitching heavily, but pounded rather hard, due probably to shape of forward under body. This continued all day and during the night, when the gale was at its height, and which the captain estimated to have a velocity of 60 miles an hour. During the day the vessel was taking seas over fore-castle and all fore and aft, but responded well to these head seas, much in the manner of a steel vessel.

On Saturday the wind had fallen considerably and on the afternoon of that day the gale had subsided, which gave the opportunity of removing a hatch cover from holds 1, 2 and 3 and examining the vessel as far as the cargo permitted. It was then observed that the deck slab was cracked in several places in way of hatchways 1, 2 and 3 under the winch seatings, the cracks being more extensive in way of no. 2 hatchway. The cracks extended right through the slab, and evidence of slight leakage could be seen on underside, and were confined in extent to the area between the hatchways and under the winches. Small hair line cracks were also observed in the inside surface of the radius corners of all the hatchways, more particularly in no. 2. A certain amount of leakage also occurred through the fastening of the wooden deck houses and other deck fittings through the slab, and also from the fender bolts along the ship's side.

From Saturday afternoon until the arrival at Seattle on Tuesday, May 28, good weather prevailed. Draft on arrival: fore, 21 ft. 3 in.; aft, 22 ft. 8 in. During the voyage the bilges were sounded every hour, day and night, and except for port side no. 1 hold, which had about 5 in. on arrival, all other bilges were dry; this leakage only amounted to about a barrel full, and in my opinion was due entirely to seepage from cargo. After unloading part of cargo, left Seattle, Thursday, May 30, arriving Tacoma same day. Left Tacoma Saturday, June 1, arriving the following day at Vancouver, where remainder of cargo was discharged. On Friday afternoon, June 7, the vessel, being empty, was subjected to a thorough examination as far as possible, outside and inside. The outside inspection showed cracks on the paint running parallel to the outer layer of reinforcing rods, particularly over the midship portion of vessel and on the port bow, probably caused by a slight movement of the slab with the force of the seas. On the inside of vessel, in addition to the cracks in deck slab previously mentioned, hair cracks were observed in the walls between upper and second deck extending from about the middle of hold 1 to middle of hold 3. These are probably shrinkage cracks and

had been under observation before the ship left San Francisco. In the lower holds, at about the center of no. 2 and 3 hatchways, on both sides, hair-line cracks were observed in the shell slab and extending across one longitudinal. These cracks showed slight working and were the only ones seen below the second deck and were probably caused by straining when laboring in a cross sea. Apart from these minor failures, the ship, in my opinion, is a success; the failure of the deck slab is due to lack of sufficient reinforcement, and owing to the winches being bolted through the cement slab without any seatings.

The deck arrangements are only suitable, in my opinion, for coastwise trade, a wooden deck house bolted through the deck slab being the only protection for the engine and boiler openings, which, in my opinion, is not enough for transoceanic service. A concrete poop enclosing these openings would be a decided improvement. At the various ports of call the vessel was visited by large numbers of people representing the various shipping and shipbuilding interests, and their criticism on the whole was favorable to this type of construction.

On board the vessel also for the purpose of getting information were: Allan McDonald, the designer; Mr. Nicolsen, the builder; Prof. R. McMillan and his assistant; H. S. Loeffler, representing the Shipping Board; Charles C. Brush, Assistant Engineer, Bureau of Lighthouses.

Prof. McMillan had a number of his strainograph instruments placed around the midships of vessel, the cargo being so arranged that these were accessible at all times during the voyage, access to them being obtained through a ventilator to no. 2 hold. He informed me that the greatest stress registered during Friday's gale was only 8,000 lb. (that is, between hogging and sagging), on the indicators placed on the underside of deck, and the indicators on flat of bottom registered about three quarters of that amount.

Following is a copy of some of the observations made by Mr. Brush: "Established sight lines fore and aft, reading 0 in still water; passing out through Golden Gate vessel showed slight hog of  $\frac{1}{4}$  in. port and  $\frac{3}{8}$  in. starboard, and the greatest deflection taken during the voyage between extreme hogging and sagging was  $\frac{7}{8}$  in., in a length of 180 ft., which is about one-third of what a steel ship would show under similar conditions."

**Responsibility for Accidents in Panama Canal.**—The rules for the operation and navigation of the Panama Canal have been amended providing that the master of a vessel in canal waters, except while the vessel is being passed through the locks, shall be charged with the safe handling and proper navigation of the vessel, the pilot being considered to be on board solely in an advisory capacity. Masters of vessels must abide by the canal rules as interpreted by the pilot. No claim against the Panama Canal for damages, on account of injury to a vessel or its cargo while in canal zone waters, arising from the operation of the canal, other than the passing of the vessels through the locks, shall be allowed unless it shall be determined by the Panama Canal Governor that such injury was due to negligence or want of care on the part of canal agents or employees, and there shall be an appropriation available for the payment of such claim.

## Wreck Commissioner's Judgment.

Enquiry has been held, and judgment delivered in connection with the following casualty:—

### Stranding of the s.s. Afghan Prince.

Held at Sydney, N.S., Sept. 12, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Lieut. H. C. Owen, R.N.R., and Capt. A. J. Morrison, as nautical assessors. The court came to the conclusion that the vessel was provided with all necessary instruments, and efficient compasses with little deviation, which were checked in a careful manner whenever opportunity offered. From the time the vessel left Hampton Roads, until she reached Canso, she was navigated carefully and frequent casts of the lead taken, and a chain established when off Canso which was passed at a safe distance. The weather was fair as regards sea and winds, but was foggy at intervals. After leaving Canso, a course was set which would have led clear of all points of land, but which the court is of opinion was too fine, especially when the master was working on a large scale chart, and had never navigated these waters before. Though he recognized there was a westerly set, an allowance being made to offset its possible effect, the court feels that when he obtained a depth of 17 fathoms, ordinary prudence demanded that the vessel should have been turned seaward and her half speed brought to slow, and she should have been navigated carefully until 40 or 45 fathoms had been obtained, and then the former course resumed. From the evidence of the chief officer it was gathered that there was some nervousness on account of submarines, and that the hugging of the coast was due to this and caused the master to err gravely in judgment, and prevented him from exercising that prudence he had shown between Baltimore and Canso. The Admiralty orders may be to navigate close to the coast, but the court is under the impression that there is a proviso, viz.: consistent with safe navigation. In ordinary circumstances the court would have dealt with such a case in no lenient measure, but in view of conditions existing, the dread which must exist in one's mind of meeting with an enemy ship, which must upset somewhat those in command, it felt that in this instance, taking into consideration the care exercised in navigating up to Canso, and the neat method followed in entering details in the log books, the watchfulness of the actions of the compasses, some consideration was deserved, and it therefore reprimanded the master severely, and did not deal with his certificate, cautioning him as to the future. The court suggested that the Admiralty enclose within the folios handed to shipmasters, some sectional charts of the coast which they are to frequent, especially with those they are called upon to sail for the first time.

**Lafayette Steamship Co., Ltd.**, has been incorporated under the Dominion Companies Act, with \$100,000 capital, and office at Montreal, to build, own, operate and deal in steam and other vessels of every description, and to carry on a general business as common carriers.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for August, as follows:—Superior, 602.42; Michigan and Huron, 581.79; St. Clair, 575.93; Erie, 572.64; Ontario, 246.43. Compared with the average August levels for the past ten years, Superior was 0.20 ft. below; Michigan and Huron 0.95 ft. above; Erie, 0.04 ft. below, and Ontario 0.22 ft. below.



## Shipbuilding Costs at the Pacific Coast.

An Ottawa press dispatch of Sept. 24 said:—Shipbuilders on the Pacific coast, claiming that the conditions under which they operate are exceptional, want more money for building government ships, and a delegation interviewed the Minister of Marine today about it. The builders representing Vancouver and Victoria yards state that they cannot satisfactorily compete with Seattle at the scale fixed, as higher rates are being paid in the U.S. They want a better figure than the regulation contract specifies.

Another Ottawa dispatch of Sept. 25 said:—"The Minister of Marine, when interviewed regarding government orders placed with the British Columbia shipbuilders for steel ships, stated that it was not a fact that steel ships similar in size are being built in Seattle at a higher cost than at Vancouver, and that, as a matter of fact, the U.S. Government is getting steel ships, somewhat similar in size and equipment at a lower finished cost than the Canadian Government is getting from the B.C. steel shipbuilders."

## Australia's Shipbuilding Programme.

Realizing the imperative need of increasing its ship tonnage, to provide for transportation needs both during and after the war, the Australian Government has embarked upon a programme whereby from 35 to 40 vessels will be added to the Commonwealth-owned fleet of steamships within the next two years, and the Victoria State Government's shipbuilding yards at Williamstown have been taken over. On account of the great distance from European markets, the British dominions of the Antipodes are handicapped in the exchange of products with the shipping crisis as acute as it is at present. It has been recognized by Australia's statesmen that one of the most effective forms of aid to the empire lies in providing a large addition to the tonnage of the country's merchant marine.

Besides constructing ships with all possible speed, 61 vessels have been placed at the Imperial Government's disposal. This includes 26 ships, engaged in the Australian coastal and eastern trade, 8 in New Zealand trade, 22 overseas ships in the Australian service, and 5 vessels under the Commonwealth's control.

The labor difficulties in connection with the shipbuilding scheme have been overcome, although at one time they threatened to become insurmountable. Practically all the unions connected with the manufacture of the vessels have signed agreement providing for continuous operations, the dilution of labor and piece-work.

The additions to the Australian fleet comprise: Two standardized steel ships, steam, of 5,500 tons, being built in Williamstown yards, Victoria; 6 others are planned for, which will be of the same or greater tonnage.

Six ships of the same pattern as those being built at Williamstown, which will be constructed at Walsh Island, New South Wales.

Fourteen first-class wooden ships of 3,200 tons, building in the United States, 4 equipped with Diesel engines, and the others with steam. Two of these have been launched, and the others are expected to reach Australia this year. This order was placed in June, 1917, but delivery was delayed by labor troubles, lack of materials, etc.

One steel ship to be built by a private firm in South Australia. This order may be extended to 2 vessels.

Two steel ships at Devonport, Tasmania.

Fourteen wooden vessels, 6 of 2,600 tons and 6 of 2,300 tons. It is believed that a company has been formed with a large capital, possibly £1,000,000, to build some of the steel or wooden ships in Tasmania.

An Ottawa report says that at least one Nova Scotian vessel will, in all probability, be purchased by the Australian Government at an early date. As it is impossible to obtain adequate supplies of wire rope and the favored hemp sail canvas from the United States, the attention of Canadian manufacturers of these articles is directed to the development of Australian shipbuilding as an outlet for their products.

## St. Lawrence Power Dam Project.

The International Joint Waterways Commission has granted permission to the St. Lawrence Power Co., to place a dam south of Long Sault Island, in the St. Lawrence River, near Massena, N.Y., under certain conditions, and as a war necessity.

The Dominion Government in its arguments against the proposal, urged the clause in the Ashburton Treaty of 1842, whereby the channel directly in question south of Long Sault Island was expressly declared to be for all time, "equally free and open to ships, vessels and boats of both nations." It was argued that in view of this, the general terms of the treaty of 1909, under which the commission secured its jurisdiction, could not have sufficient force to enable it to permit a dam across the channel, and that the parliaments of the two countries alone could act. The commission, however, was so impressed with the U.S. Government argument, to the effect that more aluminum must be manufactured, and that this proposal affords the readi-

est means, that the order was granted, subject to substantial restrictions, which may or may not go so far as the Dominion Government desires. The order also provides for Government ownership and control. Representatives of the Dominion Government visited Washington recently to discuss the matter, and to establish a fair understanding.

## Atlantic and Pacific Ocean Marine.

The Norwegian s.s. Bergsdalen was torpedoed and sunk by a German submarine recently, about 120 miles south of Cape Race, while bound in ballast, from France to Baltimore, Md.

Canadian Pacific Ocean Services' s.s. Lake Manitoba, which was burned at the Imperial Oil wharf at Longue Pointe, Montreal, at the end of August, is considered a total loss. The only part of the hull which escaped damage is the double bottom. The fire originated in the boiler room, and the heat engendered melted a lad pipe, through which oil was being taken aboard.

The Hudson's Bay Co.'s ship, Pelican, which has been a regular caller at Montreal for several years, is, according to reports, to be transferred to other waters. This vessel, of the corvette type, was engaged in Mediterranean waters in the Egyptian wars of the early 80's, and was purchased from the British Government by the Hudson's Bay Co. She is bark rigged and equipped with auxiliary steam power.

Canadian Pacific Ocean Services' s.s. Missanabie was reported, Sept. 10, from New York, to have been torpedoed, while west bound for the United States. She had been engaged for some time in conveying U.S. troops to European points, and was returning to the U.S. for that service. She was built at Glasgow, Scotland, in 1914, for the one class passenger service between England and Canada, and was 12,469 gross tons, 500 ft. long, 64 ft. beam and 38 ft. deep, with a speed of 17 knots.

## Grain Statistics for Crop Year 1917-1918.

The following statement, prepared by the Board of Grain Commissioners, shows the total quantities of each kind of grain shipped by vessels from Fort William and Port Arthur during the crop 1917-1918, according to the ports at which the car-

goes were discharged. In addition to the figures given below, 3,600,056 lb. of sample mixed grain were shipped to Canadian ports, and 1,161,598 lb. of mixed grain and 45,345 tons of elevator screenings were shipped to U.S. ports.

	Wheat. Bush.	Oats. Bush.	Barley. Bush.	Flax. Bush.	Rye. Bush.
To Canadian ports:—					
Collingwood . . . . .	221,592-10				
Depot Harbor . . . . .	2,747,622-40	180,800-00			
Goderich . . . . .	7,274,245-20	3,535,158-29	157,374-40	349,110-50	
Kingston . . . . .		372,525-29	57,700-00	34,000-00	
Midland . . . . .	6,846,690-30	2,310,640-02	765,924-02		
Montreal . . . . .	702,003-50	1,188,672-15	847,409-34	141,967-46	
Port Colborne . . . . .	14,403,983-50	1,445,174-21	770,435-45		
Port McNicoll . . . . .	15,359,065-40	5,795,985-08	1,170,039-47	81,537-54	
Port Stanley . . . . .	108,531-00				
Tiffin . . . . .	10,637,664-40	581,493-21	699,959-01	27,000-00	
Total . . . . .	58,301,499-40	15,410,450-23	4,468,843-25	533,616-38	
To U.S. ports:—					
Buffalo . . . . .	39,088,091-50	2,431,658-16	560,126-19	1,822,521-18	62,585-14
Chicago . . . . .				117,161-26	
Cleveland . . . . .				125,000-00	
Detroit . . . . .	510,838-50				
Duluth-Superior . . . . .				459,436-06	
Erie . . . . .	304,821-10				
Fairport . . . . .	678,271-10				
Ogdensburg . . . . .	56,700-00				
Port Huron . . . . .	440,696-20				
Toledo . . . . .	114,096-00			173,807-08	
Total . . . . .	41,193,515-20	2,431,658-16	560,126-18	2,697,926-02	63,585-14
Lost in wrecks . . . . .	234,843-50				
Grand total . . . . .	99,729,858-50	17,842,109-05	5,028,969-44	3,331,542-40	63,585-14



The Japanese s.s. Canada Maru, which went ashore near Cape Flattery, recently, and which was eventually floated and taken to Esquimalt for repairs, was expected to clear from the dry dock about the end of September. It is stated that the repairs include the reconstruction of the bottom from the stowhold forward, the removal, straightening and replacing of nearly all the frames, and several new plates. The contract was placed with Yarrows, Ltd., and is reported to amount to about \$500,000.

### Maritime Provinces and Newfoundland.

The Newfoundland Steam Screw Tug Co., Ltd., St. John's, Nfld., is in liquidation, with R. G. Rendell and W. G. Strong as liquidators.

The Naval Service Department has awarded a contract for the erection of two large coal handling bridges of the travelling type with clam shell buckets at the Government dockyard at Halifax, N. S., to the Dominion Bridge Co.

The Halifax Trading & Sealing Co.'s s.s. Seal has been sold to Newfoundland parties. She was built at Glasgow, Scotland, in 1911, and is screw driven by engine of 85 n.h.p. Her dimensions are: length 175 ft., breadth 22.6 ft., depth 12.3 ft.; tonnage 608 gross, 277 register.

Nova Scotia Steamships, Ltd., announces that at the request of the Canadian Government Railways management, it has decided to establish a steamship service between Halifax, Yarmouth and Boston, in connection with the service being operated between Halifax, St. John's, Nfld., and New York.

The s.s. Robert G. Cann completed an overhauling and repairing at Meteghan, N.S., early in September, and replaced the s.s. Keith Cann on the St. John-Yarmouth run. The latter vessel is being overhauled, and when this has been done, she will return to her own route, and the Robert G. Cann will take the Canso-Mulgrave route. Hugh Cann & Sons, who operate this service, chartered the s.s. Edna R. as a relief vessel.

Navigation of East River, Pictou County, N.S., from Pictou harbor to Trenton, has been improved by dredging a channel 150 ft. wide by 21 ft. deep from Pictou River to Narrows Point, and 15 ft. deep thence to Trenton. Above Shipyard Point, a turning basin has been dredged in front of Trenton, and a lock has been built through Stonehouse Point (Narrows Point), but it is not yet in operation. When it is in operation, it will raise the river level, so that a depth of 21 ft. will be available.

The s.s. Kite, owned in Newfoundland, was driven ashore at Point Rosier, on the Gaspé coast, Que., recently, and is reported to be a total loss. She was bound from Fox River, Que., to Gloucester, Mass., with a cargo of fish. She had been used for some time along the northern and western coasts of Newfoundland, and for the Labrador mail service. She was built in Germany in 1873, her dimensions being: length 117 ft., breadth 26 ft., depth 14 ft.; tonnage, 280 gross, 190 net.

The Reid Newfoundland Co. issued a notice recently that, owing to a strike at Port aux Basques, Nfld., it would endeavor to forward all freight via North Sydney and Port aux Basques, but reserved the right whenever circumstances in the company's opinion required it, to forward freight originally routed via North Sydney and Port aux Basques and

designated steamships, by way of Louisbourg, collecting extra charges over the Sydney and Louisbourg Ry., and also reserved the right to forward freight by any steamship owned or chartered by the company from North Sydney or Louisbourg direct to St. John's or Newfoundland ports other than Port aux Basques.

### Province of Quebec Marine.

The Dominion Public Works Department received tenders, Sept. 18, for the construction of a floating pontoon for the wharf at Ste. Anne de Chicoutimi.

The Ogdensburg Coal & Towing Co., Ltd., has been authorized to carry on its business in the province of Quebec, with W. L. McDougald, Westmount, as its attorney.

An order in council has been passed establishing a new schedule of fares on the Quyon ferry, operated across the Ottawa River, between Fitzroy Tp., Ont., and Onslow, Que.

The s.s. Winnifredian, which ran on the rocks at St. Mary's Islands, near Quebec, recently, was released Sept. 23 by the wrecking vessel Lord Strathcona. She is considerably damaged.

The dredged channel in the Saguenay River, has been swept recently, from deep water below St. Fulgence to Chicoutimi wharf. The standard depth of 16 ft. was found throughout the entire length, and over the width of 250 ft., except at the junction of the axes of the Poste St. Martin and Valin River ranges, where some boulders have been carried into the cut by ice, and the channel been reduced to a depth of 14 ft. at the sides.

### Ontario and the Great Lakes.

The Pittsburg Steamship Co.'s s.s. Superior City grounded in a fog at the Limekiln Crossing, Sept. 23.

The Port Huron Navigation Co.'s s.s. David W. Mills, of U.S. register, after encountering heavy seas whilst en route from Ashtabula, Ohio, to Montreal, sank in Port Maitland harbor, Sept. 19, and is believed to be a total loss.

The Northern Navigation Co. is reported to have made arrangements for operating the s.s. Rapids King between Chat-

ham and Detroit, next summer. The Rapids King is owned by Canada Steamship Lines, Ltd., of which the Northern Navigation Co. is a subsidiary.

Canadian Steamship Lines' s.s. Calgarian has been sold to Brazilian parties. She was built at Port Arthur, Ont., in 1913, and is screw driven with engine of 115 n.h.p. Her dimensions are: length 244 ft., breadth 42.8 ft., depth 26 ft.; tonnage, 2,326 gross, 1,302 register.

The Minister of Public Works announced at Port Dover, Sept. 14, that he would place a contract for the improvement of the Port Dover harbor, with a firm during the following week, so that a start may be made immediately, and without the delay which would be occasioned by calling for tenders.

The Windsor City Council has renewed the Detroit & Windsor Ferry Co.'s license, which expires Oct. 2. A condition has been attached to the renewal providing that the company shall continue the same fare and service as now in effect. The council decided to withdraw the terms offered to C. Millar, K.C., Toronto, for the establishment of a new ferry service between Detroit and Windsor.

The Pennsylvania Coal & Transportation Co.'s steam tug S. O. Dixon, towing the barges Islewide and Louisa, were seized at Kingston, at the instance of the Keystone Transportation Co., Sept. 16, on a salvage claim. The tug, with its tows, was discovered by the s.s. Keyvive drifting helplessly in a gale about 20 miles off Kingston, and towed to port. The engineer of the tug had been washed off and drowned, and there was no one else to look after the engine.

The Montreal Transportation Co. has acquired the s.s. Cataract, which has had a unique career. Originally built at Hamilton, Ont., in 1882, as a steamship, and named Myles, her machinery was removed and she was converted into a schooner, and named Cataract, in 1916. Machinery has again been installed in the hull and she reverts to her former condition, maintaining the name Cataract. Her dimensions are: length 174.6 ft., breadth 33.2 ft., depth 15 ft.; tonnage, 839 gross, 451 register, and she is equipped with engine of 66 n.h.p., driving a screw.

The s.s. Natironco, which was sunk in collision with the Detroit & Cleveland

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie canals during August, 1918.

Eastbound.		Can. Canal.	U. S. Canal.	Total.
ARTICLES.	m. ft. b. m.			
Lumber	.....	2,224	50,599	52,823
Flour	.....Barrels	323,450	522,690	846,140
Wheat	.....Bushels	422,550	78,500	501,050
Grain, other than wheat	.....	1,220,455	140,243	1,360,698
Copper	.....Short tons	2,675	6,942	10,617
Iron Ore	.....Short tons	1,024,356	5,481,711	9,507,067
Pig Iron	.....Short tons	.....	.....	.....
Stone	.....Short tons	.....	1,192	1,192
General Merchandise	.....Short tons	4,212	3,832	8,044
Passengers	.....Number	5,107	1,894	7,001
Westbound.				
Coal, soft	.....Short tons	157,055	2,360,548	1,517,603
Coal, hard	.....Short tons	3,570	295,985	299,555
Iron Ore	.....Short tons	.....	25,616	25,616
Mfgd. Iron and Steel	.....Short tons	3,040	3,600	5,640
Salt	.....Short tons	3,300	10,133	13,433
Oil	.....Short tons	.....	60,232	60,232
Stone	.....Short tons	.....	69,571	69,571
General Merchandise	.....Short tons	37,449	17,229	54,678
Passengers	.....Number	6,894	1,570	7,664
Summary.				
Vessel passages	.....Number	690	2,402	3,092
Registered tonnage	.....Net	1,223,868	7,664,285	8,888,153
Freight				
Eastbound	.....Short tons	1,105,787	7,637,686	9,743,473
Westbound	.....Short tons	203,414	2,842,914	3,046,328
Total Freight	.....Short tons	1,309,201	11,480,600	12,789,801



Navigation Co.'s s.s. Eastern States, in the Detroit River, June 19, 1917, is being rebuilt at Buffalo, for salt water service. She was built at Detroit, Mich., in 1892, and first named Pioneer. She was later acquired by the National Iron Co., Toronto, and renamed, and the National Steamship Co. was formed to operate her. Later she was taken over by the Merchants Mutual Line, Ltd. a subsidiary of Canada Steamship Lines, Ltd., and during the early part of 1917, was sold to A. B. Mackay Steamship Co., Hamilton.

The s.s. Ossifrage, which was operated by the Chatham Navigation Co., between Chatham and Detroit, for some time, left Chatham recently for Halifax, N.S., where, it is reported, her machinery will be transferred to another hull for ocean freight service. She was built of oak at West Bay City, Mich. in 1886, and rebuilt in 1896. She is an awning deck type with diagonal strapping on frames, steel arches, and equipped with electric light, with accommodation for freight and passengers. The machinery consists of triple expansion engines with cylinders 13½, 23 and 37 in. diam. by 24 in. stroke, 540 i.h.p. at 130 r.p.m., supplied with steam by a Scotch boiler 12 by 12 ft. at 115 lb.

The s.s. Maggie Marshall, owned formerly by the Louis Sands Salt & Lumber Co., Manistee, Mich., which was erroneously stated in press reports recently to have been purchased by Canada Steamship Lines Ltd., has been acquired by the Reid Towing & Wrecking Co., Port Huron, Mich., and will be changed to make her suitable for salt water service. It is stated that she will be equipped and utilized as a wrecking vessel at Halifax, N.S. She is an oak vessel and was built at Manistee, Mich., in 1873, and named Wm. Crippen, and was rebuilt and renamed in 1908. She is of the well deck type, with steel arches and steel boiler house. Her dimensions are, length 150 ft., breadth 30 ft., depth 11 ft.; tonnage, 365 gross, 279 net. She is equipped with steeple compound engine with cylinders 18 and 36 ins. diam. by 30 ins. stroke, supplied with steam by a Scotch boiler 12 by 12 ft. at 140 lbs. pressure.

### British Columbia and Pacific Coast.

The Department of Marine has authorized the Pacific Great Eastern Ry. to change the name of the steam tug Daring, which it has purchased from foreigners, to Clinton, the port of registration being Victoria, B.C.

The Puget Sound Navigation Co.'s s.s. Indianapolis is reported to have been placed on the Seattle-Victoria route, for operation in conjunction with the C.P.R. British Columbia Coast Service, on what is known as the triangular route.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince George was hauled out on the marine railway at Esquimalt, for general overhaul, recently, and later resumed her service on the Prince Rupert and Anyox route on a semi-weekly schedule.

The North Vancouver City Treasurer reported the ferry receipts for this year to the end of August, as \$114,102.67, including over \$3,000 insurance, and disbursements for the same period as \$110,157.85, exclusive of \$8,853 for August accounts, passed but unpaid.

The Board of Grain Commissioners has made Vancouver a basic port for grain, placing it on a par, so far as grain is concerned, as other ports from which grain is shipped. It is reported that from an

examination of the first cargo of wheat shipped from Vancouver to Great Britain, the total damage amounted to four-tenths of 1%.

### Mainly About Marine People.

E. L. Cousins, Manager and Chief Engineer, Toronto Harbor Commissioners, has been appointed assistant to the Ontario Fuel Commissioner.

Sir George Gibbons, K.C., of London, Ont., a former Chairman of the Canadian section of the International Waterways Commission, who died recently, left an estate of \$897,000.

Sir Arthur H. Harris, formerly Special Traffic Representative, C.P.R., and latterly, Director of Overseas Transport, is reported to have been appointed Director General for Canada, British Ministry of Shipping.

David Richardson, second officer of Canadian Pacific Ocean Services' s.s. Empress of Russia, and who had been a master in the C.P.R. British Columbia Coast Service, died in the General Hospital, Vancouver, recently, aged 53.

Francis King, M.A., Counsel, Dominion Marine Association, Kingston, Ont., attended the Canadian Bar Association's annual meeting in Montreal recently, as one of the commissioners appointed for Ontario to promote uniformity of law.

T. R. Ferguson, Chairman, Board of Steamship Inspection, Ottawa, died at the Jeffery Hale Hospital, Quebec, Que., Aug. 28, after a very short illness. He was born at Pictou, N.S., Jan. 10, 1866, and received his temporary appointment in the civil service, May, 1889, his appointment being made permanent, Nov. 15, 1909.

Capt. Neil Campbell, master of Canada Steamship Lines' s.s. W. Grant Morden, died on board his vessel, while en route to Sault Ste. Marie, Sept. 1, as the result of a paralytic seizure. He was aged 68, and had been connected with lake service for over 50 years, during 40 of which he had been master. The body was landed at Sault Ste. Marie, and taken to Owen Sound, where the funeral took place.

Capt. J. O. Grey, who has been appointed Shipping Master for the port of Montreal, is well known in the district as the founder of a school of navigation and seamanship for training young men for the merchant marine, which was organized in Oct., 1917. From 1911 he acted as Superintendent of wharves and shipping at Montreal. He was born in 1872, and entered merchant marine service at the age of 14, as an apprentice on Australian and New Zealand square rigged vessels, and obtained his master's certificate five years later. He later entered the service of the American Line, and transferred to shore work in 1911. No salary attaches to the position the income obtained being from fees, which average from \$3,000 to \$4,000 a year.

Steam Navigation Co. of Canada, Ltd., which was incorporated under the Dominion Companies Act, recently, with office at Montreal, has changed its office to Halifax, N.S.

The schooner Bianca, owned by Bowring Bros., St. John's, Nfld., which was attacked recently by a German submarine on the banks, was towed into Halifax towards the end of August, by schooner Commonwealth, owned in Boston, Mass. The owners, master and crew of the Commonwealth, have libelled the vessel on a claim for \$125,000 for salvage.

### Telegraph, Telephone and Cable Matters.

Jas. Colcleugh, who died at Vancouver, B.C., recently, was the first mayor of Selkirk, Man., during C.P.R. construction there, and claimed to have sent the first telegraphic message over the C.P.R. telegraph system.

The Great North Western Telegraph Co. has opened offices at St. Yvon, Que., Langruth, Man., and Mecheche, Alta., and has closed its offices at Manoir Richelieu, Pointe au Pic, Que., Glencoe, Queen's Royal Hotel, Niagara on the Lake, and Royal Muskoka Hotel, Ont., and at St. Boniface, East Selkirk, Scantlebury and Victoria Beach, Man.

### Among the Express Companies.

W. D. Thompson has been appointed acting agent, Dominion Ex. Co., Calgary, Alta., vice F. R. Jelfs.

W. E. Norton, agent, Dominion Ex. Co., New Glasgow, N.S., has been appointed agent at Sydney, N.S.

R. Glover has been appointed agent, Dominion Ex. Co., North Bay, Ont., vice F. W. Carr, transferred.

F. Atkinson has been appointed acting route agent, Dominion Ex. Co., Levis, Que., vice G. E. Whitney, deceased.

F. W. Carr, heretofore agent, Dominion Ex. Co., North Bay, Ont., has been appointed agent, Kingston, Ont., vice G. W. Leavey.

F. A. Renwick, heretofore station agent, St. John, N.B., has been appointed cashier, Canadian Ex. Co., St. John, N.B., vice T. E. Doyle, deceased.

W. G. Everett, heretofore route agent, has been appointed agent, Canadian Ex. Co., St. John, N.B., vice Jos. Taylor, retired after 42 years service.

The American Railway Express Co., the federation of U.S. express companies, formed under the U.S. Railroad Administration, has been authorized to carry on its business in Canada. A. C. Heffernan has been appointed attorney general at Montreal, and J. E. Archer, at Vancouver, B.C.

A number of Dominion Ex. Co. employees struck work at various points, Sept. 10, owing to dissatisfaction with the existing schedule, and at the same time demanding recognition of the Canadian Brotherhood of Railway Employees. The strike was by no means general, but there was some dislocation of traffic. The majority of the company's employees are members of the Brotherhood of Dominion Express Employees, and it was contended that the cause of the trouble, was really a dispute between the two organizations. The schedule under which the men are working does not expire until May, 1919, and under these circumstances the Labor Department did not see its way to accede to the men's request for the appointment of a conciliation board. After some negotiations, in which V.G.R. Vickers, formerly General Superintendent, Atlantic Division, Dominion Ex. Co., and now Vice President, The Holden Co. Ltd., Montreal, took part, the strike was ended Sept. 13, and T. E. McDonnell, Vice President and General Manager of the company, consented to receive a deputation of the men, on their return to work, to hear any objections they may have regarding pay and working hours, etc. The contention for the recognition of the Brotherhood of Railway Employees was dropped.





Standard Derrick Engine, made in 7 sizes, from 10 to 50 Horse Power.

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We make no charge for any advice or assistance we may give you to help you solve your problems, though you may save much money thereby.

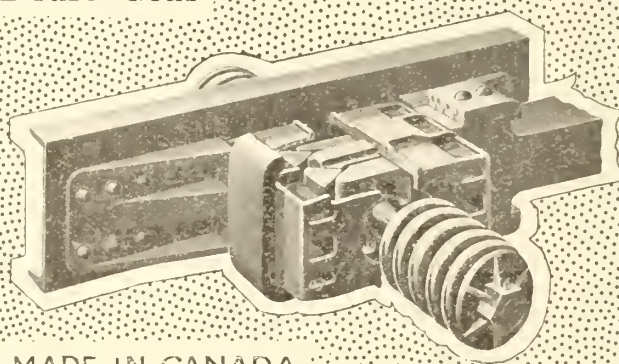
**Let us assist you in designing an equipment suitable for your own needs.**

**MARSH ENGINEERING WORKS LIMITED**

Established  
1816

**Belleville, Ont.**

## Cardwell Friction Draft Gear



MADE IN CANADA

**Union Draft Gear Company**  
Chicago - - - Illinois

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Lyman Tube & Supply Co. has appointed H. A. Jones, of Montreal, to its sales staff, with headquarters at Toronto.

Independent Pneumatic Tool Co., Chicago, Toronto, and Montreal, has issued a four page circular describing and illustrating its pneumatic and electric tools.

W. G. Gordon has retired from the Railway & Power Engineering Corporation, and from Malm, Gordon & Co., Toronto, and has returned to the Canadian General Electric Co. as Transportation Engineer.

Canadian Ingersoll-Rand Co., Sherbrooke, Que., has issued bulletin K303,

describing class E.L.-2 two-stage straight line air compressor. It deals with the tandem arrangement for certain classes of work where economy of space is to be combined with the advantages of 2-stage compression, and gives details of construction, including the leaf valves and other features, also particulars of the short belt drive with which this type of compressor can be furnished, and for which advantages are claimed where space is at a premium.

**American Locomotive Co.'s Report.** — The profits for the year ended June 30 were \$9,930,088.37, of which there is a balance available, after deduction of income and war taxes, of \$5,911,137.40. The usual dividend of 7 on the preference stock, and 5 dividend on the common stock absorbed \$3,000,000, leaving a surplus of \$2,911,137.40. Of this amount, \$1,000,000 is reserved for additions and betterments to plants, and the balance is added to the company's surplus. The cost of restoring the Richmond and Montreal Locomotive Works' plants was charged to a reserve created for this purpose out of previous years' profits. The bond-

ed indebtedness of the Locomotive & Machine Co. of Montreal, Ltd., now Montreal Locomotive Works Ltd., is \$1,500,000, consisting of 1st mortgage 4 gold bonds, issued Mar. 31, 1904, and maturing Mar. 1, 1924.

### THE CANADIAN NORTHERN RAILWAY COMPANY.

Notice is hereby given that the Annual General Meeting of the shareholders of the Company will be held at the Head Office of the Company, 1 Toronto Street, Toronto, on Friday the 25th day of October, 1918, at the hour of 11 o'clock a.m., for the purpose of considering, and if thought fit, of approving of the Directors' report and the consolidated Balance Sheet and Profit and Loss Account of the Canadian Northern Railway System for the year ending June 30th, 1917, also for the purpose of electing the Board of Directors of the Company and the appointment of Auditors; also for the purpose of considering, and if thought fit, approving and confirming a By-law respecting the appointment of an Executive Committee; also for the purpose of considering and dealing with such other matters as may properly be brought before the meeting.

By order of the Board of Directors,

R. P. ORMSBY,  
Assistant-Secretary.

Dated at Toronto, this 19th day of September, 1918.



**Engineers and Contractors****ANGUS SINCLAIR, C.E***Railway Contractor*OFFICE: EXCELSIOR LIFE BUILDING,  
Adelaide and Toronto Sts., Toronto**ANALYSES**—Alloys, Waste  
Oils, Coal etc.**TESTS**—Steel, Cement, etc.**Milton Hersey Co. Ltd.**

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ELECTRICAL—CIVIL—MECHANICAL  
REPORTS, DESIGN AND CONSTRUCTION  
Complete Railway Shop and Terminal Properties—  
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sponsible and worthy financial, fiduciary, and  
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Montreal, Que.; Ottawa, Ont.; Quebec, Que.;  
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in Sheets and Rods, for Ship-building Requirements

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*Prompt Deliveries*

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Used Machinery, Metals of All Kinds,  
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BECAUSE WE BUY FOR CASH WE CAN SELL AT  
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## *Saves the Seconds that Save the Dollars*

The seconds that a carman must waste in closing doors laboriously by hand instead of tirelessly by air mount up when you consider that a 9-mile-an-hour car making only 7 stops a mile has a total of

### *1008 Stops in a Sixteen-Hour Day.*

Even if hand operation took only 1 second per stop more, although the conductor can do nothing else while closing the door, each car would lose 1008 seconds or 16 4-5 minutes a day.

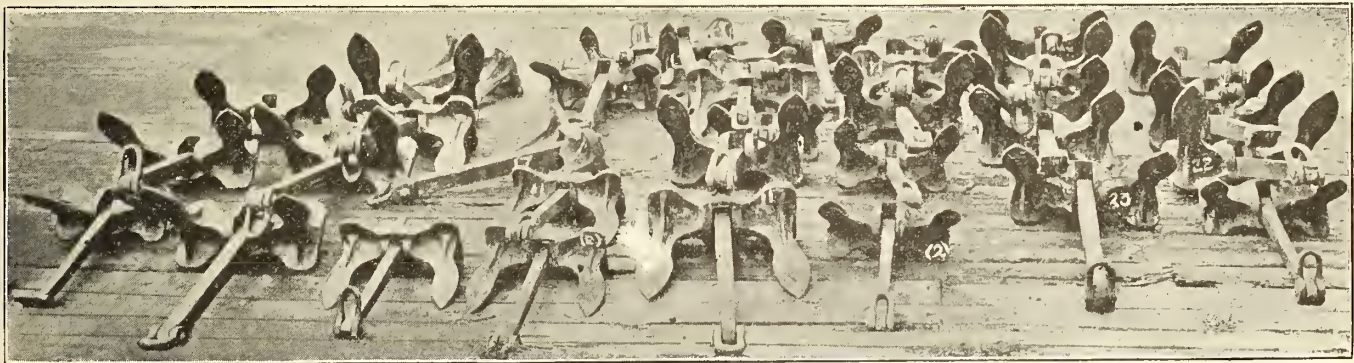
These 16 4-5 minutes of *car* time mean the payment for 33 3-5 minutes of *crew* time.

Labor-time waste is but one of the losses that you can avoid by the adoption of

## **NATIONAL PNEUMATIC DOOR AND STEP CONTROL**

On Both Present and Future Cars

**NATIONAL PNEUMATIC COMPANY**  
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**THOMAS A. EDISON, INCORPORATED**

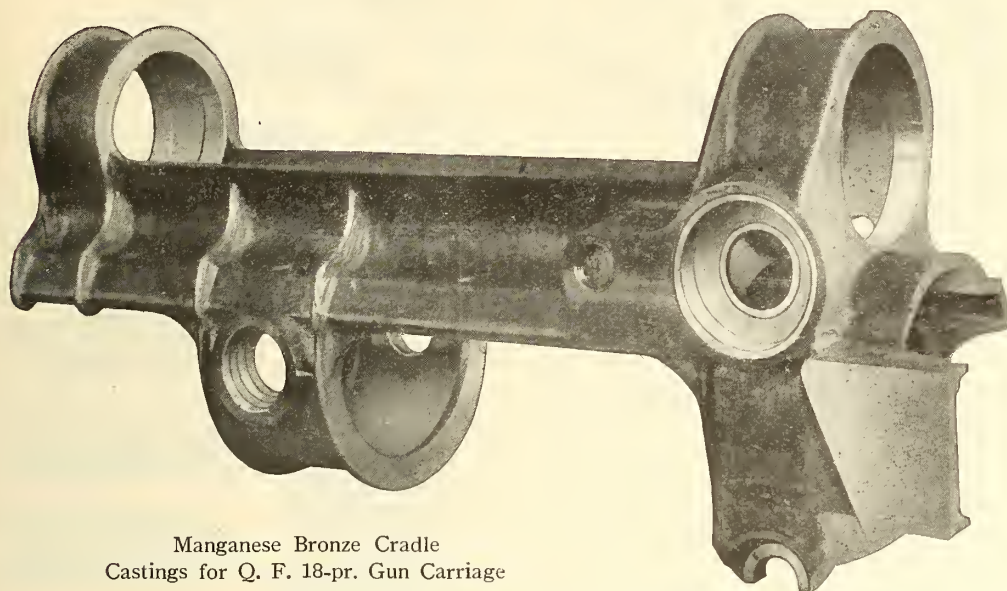


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**Castings**  
of Every  
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in  
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Rough or  
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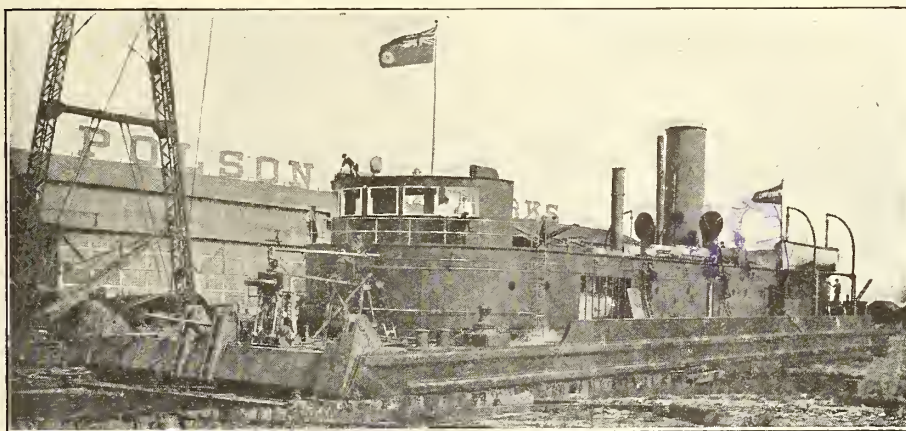
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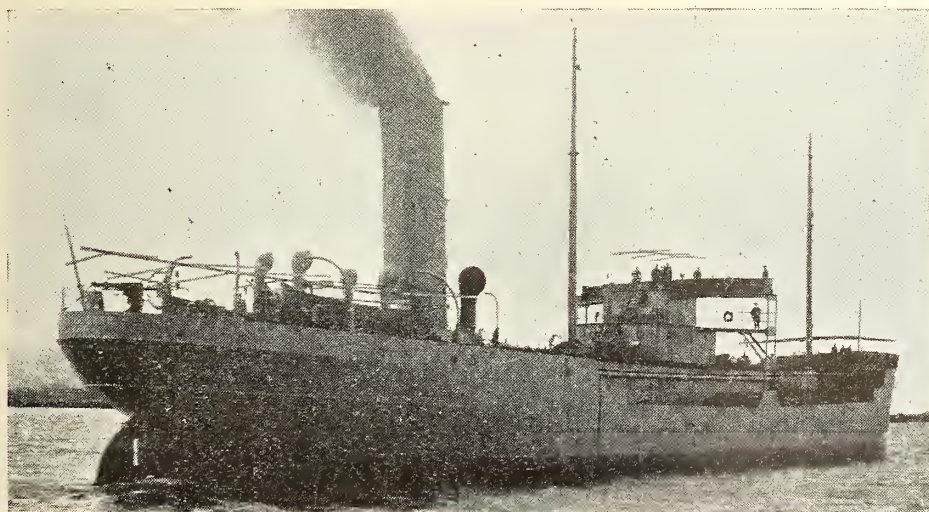
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EQUIPPED TO  
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Repairs and replacements will be slower and harder than ever to get this winter. Electric welding with a Lincoln Dynamotor will save you many of the delays and tie-ups you would otherwise suffer.

The usefulness of the Lincoln Dynamotor by no means ends with Rail Joint Welding and Bonding. It goes right into the shop and handles a surprising variety of repair work quicker and better than it can be handled in any other way. Superintendents who have a Lincoln Dynamotor consider it one of their most valuable aids in maintaining service under present conditions.

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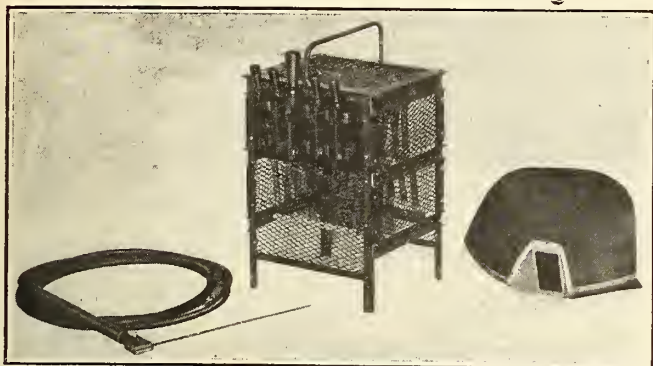
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The ERICO portable rheostat shown is one of the most essential tools around any up-to-date repair department.

It eliminates an enormous waste by reclaiming many parts that otherwise are discarded as being unrepairable. The entire weight of this equipment totals only 16½ pounds and 22 pounds for 110 and 220 Voltage respectively. We can furnish this outfit to be used successfully on any voltage and current capacity.

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**Canadian  
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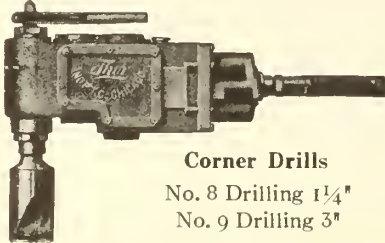
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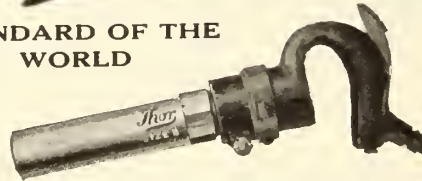
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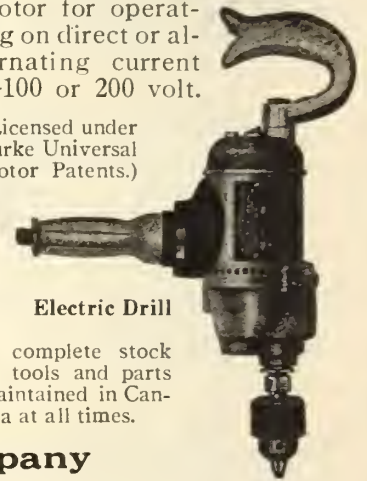
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**Single Valve Chipping Hammer**

**PORTABLE** Electric Drills equipped with a Universal Motor for operating on direct or alternating current—100 or 200 volt.

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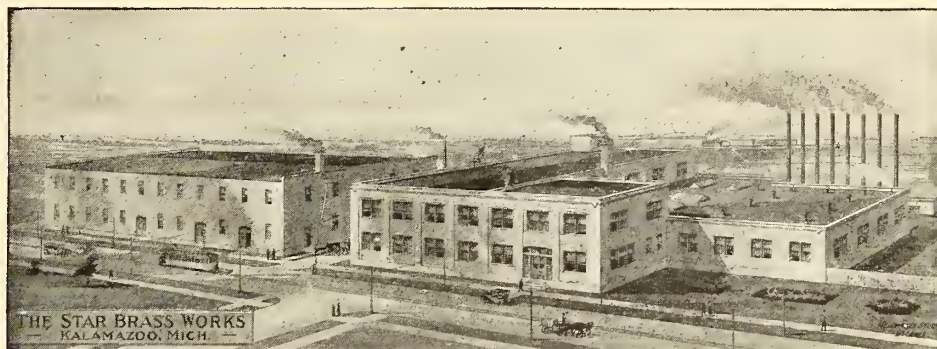
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## STEEL STRUCTURES

Railway and Highway Bridges, Buildings, Turntables, Electric and Hand Power  
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Steel Car Wheels, Locomotive Driving Wheels, Car Castings of all descriptions. Engine Frames.

*Equipped to handle large orders promptly.*

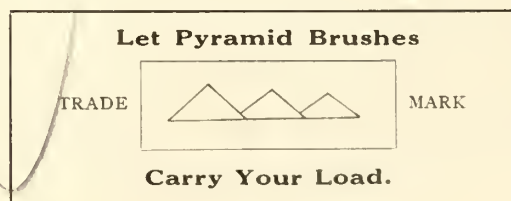
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**Are Designed for Every Class of Service**

Hence, you can obtain the exact brush to meet operating conditions.

It means that you can rely on your motors and generators running satisfactorily at their full rated capacities.



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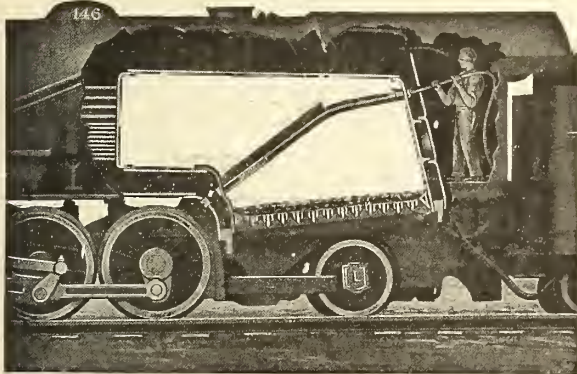
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Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

## Babcock and Wilcox, Limited

Head Office For Canada  
St. Henry, MONTREAL

Toronto Office  
Traders Bank Building

## The Nautical Gazette

(August 24, 1918)

### Coal Shortage Problems

In Europe the best of the coal miners are now at the front, and the output of those less physically fit and still at work is not up to the pre-war standard. \* \* \*

In the United States, the production of both anthracite and bituminous coal remains considerably below the minimum set by the Fuel Administration at which the necessary war work could be carried on at its point of highest efficiency. \* \* \*

The Shipping Board and the bunker-coal trade are calling for half as much coal again as was originally assigned to them, while new plants and enlargements of old industrial establishments are consuming the coal set aside for other purposes. \* \* \*

How to make the inadequate supply best meet the requirements of the situation is therefore going to prove a very puzzling problem both here and in Europe.

Fire tube superheaters will do more than any other one thing in solving these problems.

Many ships are being equipped.

Others will have to be equipped sometime.

The need is urgent; the time for meeting it is *now*.

## Locomotive Superheater Co.

CHICAGO

MARINE SUPERHEATERS

NEW YORK



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Rivet Cutting Gun and Slag Cutting Gun.

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R. W. YOUNG MFG. COMPANY, CHICAGO, ILL.  
Balanced Electric Turntable Tractors.

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Makers of Base-Supported and 100% Rail  
Joints for Standard, Girder and Special  
Rail Sections. Also Joints for Frogs and  
Switches, Insulated Rail Joints and Step  
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PROTECTED BY PATENTS

Grand Prize, San Francisco, 1915

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**S**TRUCTURAL SHAPES  
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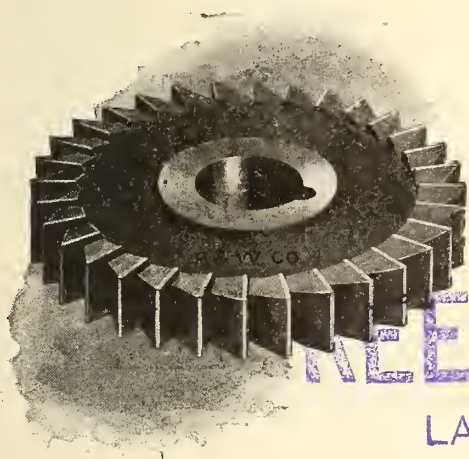
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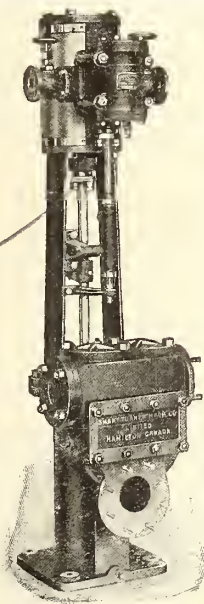
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proportionately better

**Results**

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Capital Authorized ..... \$10,000,000  
Capital Paid up ..... 7,000,000  
Reserve Fund ..... 7,000,000

Head Office: Toronto.

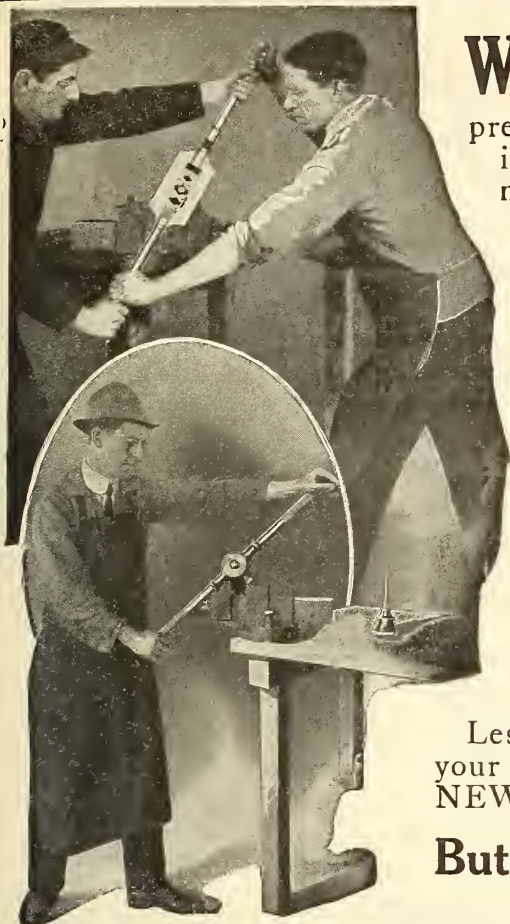
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prevails in your plant? Does it take two men to do one man's work.

Why don't you replace that old antiquated tool with a new up to date

## Reece's New Screw Plate

These pictures do not exaggerate conditions as you can actually see them, if you will visit Machine Shops throughout the country.

Lessen your cost by giving your mechanics a REECE'S NEW SCREW PLATE.

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If you use—

Copper and Brass Tubes;  
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of any kind we are in  
a position to serve you  
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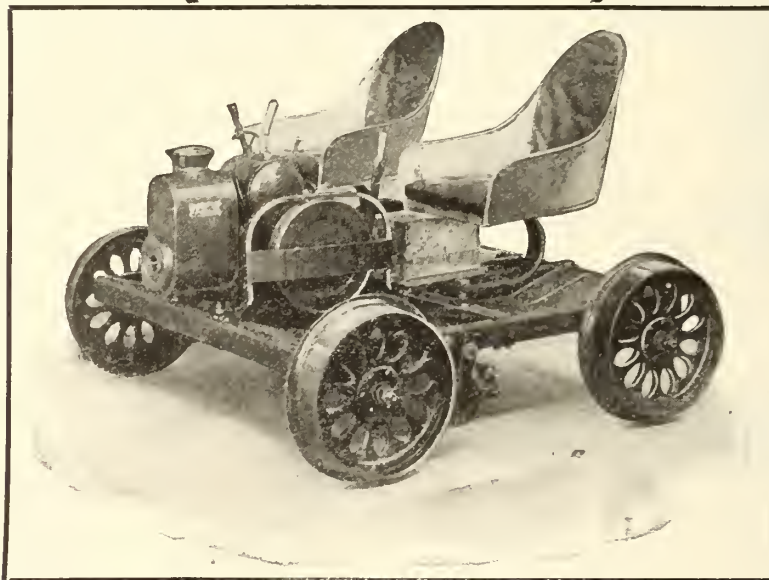


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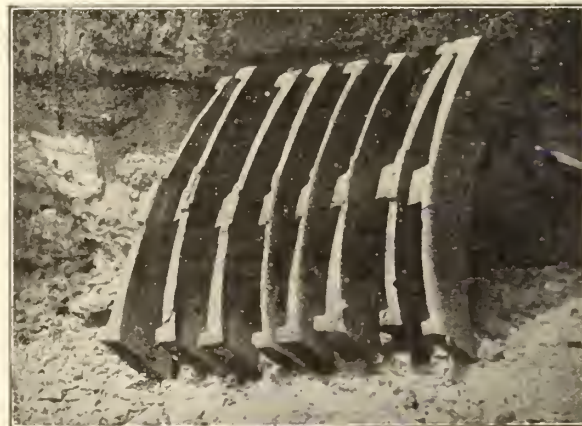


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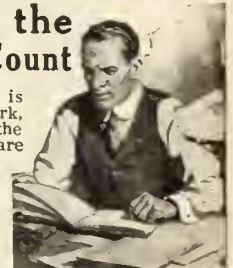
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## The Imperial Guarantee and Accident Insurance Co.

of Canada

Imperial Protection Accident and Sickness Insurance  
 Guarantee Bonds Plate Glass and Automobile Insurance  
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A Strong Canadian Company

Head Office, 44 King St. W., Toronto, Ont.

Branch Offices:

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Winnipeg, Man., Merchants Bank Bldg.

Calgary, Alta., Canada Life Bldg.

Vancouver, B.C., 546 Pender St. W.



## Steel Products and Machinery

For Shipbuilding, Steam and Electric  
Railways and general manufacturing.

Rolled Steel Shapes, Plates, Bars, Hoops,  
Sheets and Tin-Plate.

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and Tires.

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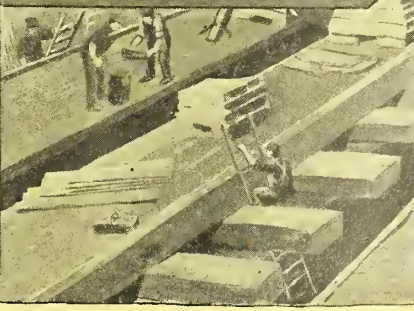
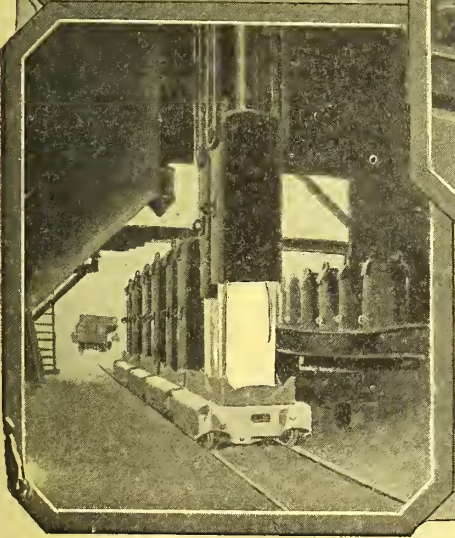
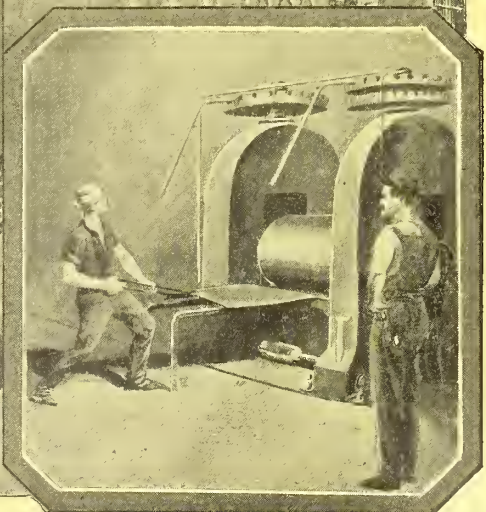
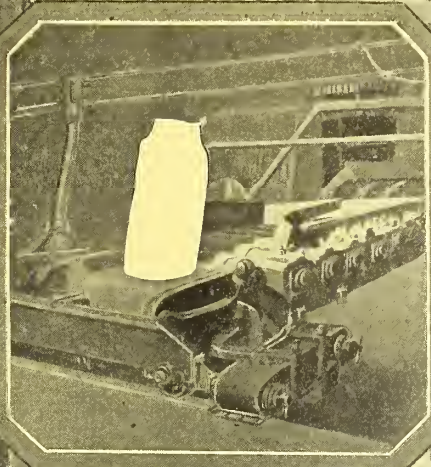
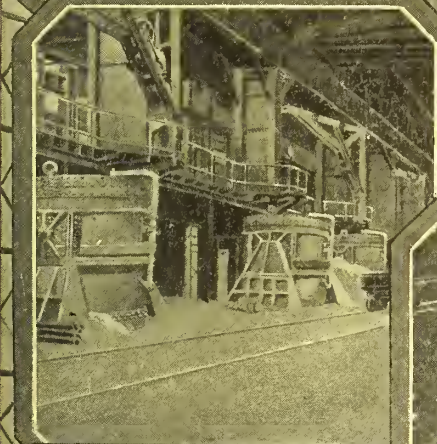
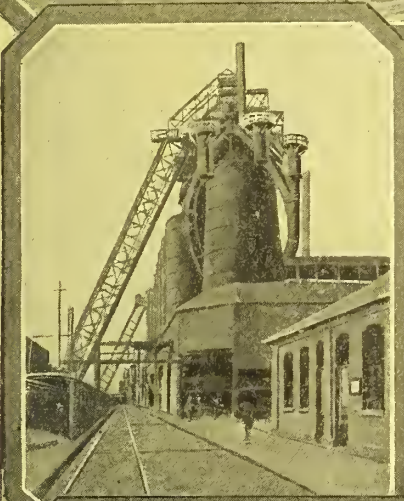
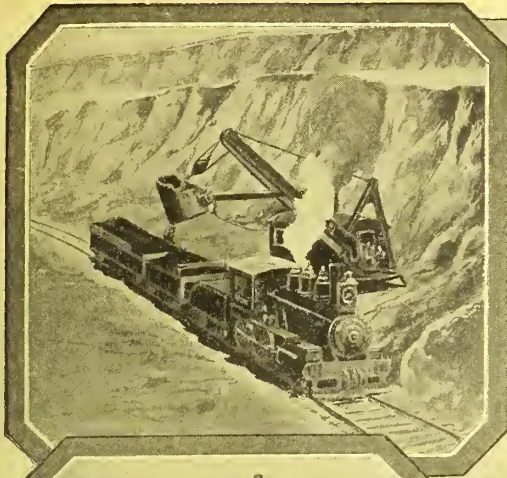
Drying, Separating and Clarifying  
Apparatus.

Centrifugal Machines, Agricultural  
Implements.

### PENNSYLVANIA STEEL EXPORT COMPANY

Philadelphia, U.S.A.

Branches { 8 Naniwa Machi, Kobe-Japan.  
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We Manufacture in our Works in Montreal  
a Complete Line of  
**SHIPS' WOOD and IRON  
BLOCKS and TACKLE**

*ALSO*

Steering Gear Spring Buffers



Wood Blocks are all fitted with either  
roller bearings or bronze bushings.

Iron Blocks are all made with self  
lubricating bushings.

**Taylor & Arnold, Limited**

**Montreal**

**Winnipeg**

**Vancouver**



*marked*

# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 249

TORONTO, CANADA, NOVEMBER, 1918

Subscription Rates, Page 493

## Railway Springs



*sent*

Locomotive, Tender and Car Springs of every description made in Canada with the Canadian guarantee.

*22*

Manufacturers of Railway Springs for over 50 years and the experience we have gained is at your disposal in designing and manufacturing your Spring requirements.

**B. J. COGHLIN COMPANY,  
LIMITED**

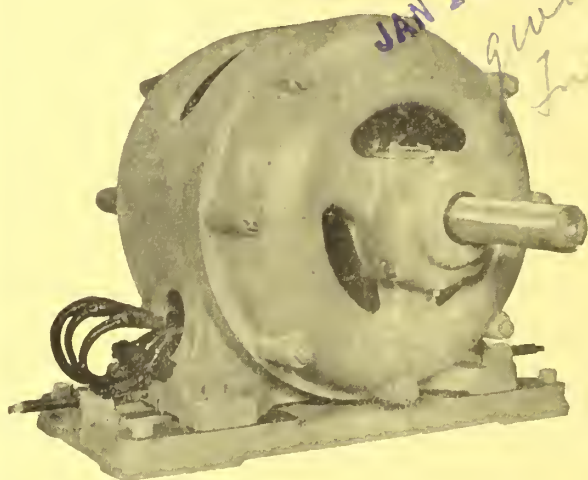
**Office and Works:**

**Ontario Street East      Darling and Davidson**

**MONTREAL**



# Westinghouse Type HS Induction Motors



Designed and built, electrically and mechanically, for one purpose,—to insure the user continuous, successful operation at a minimum maintenance cost.—Their reliability and efficiency have been demonstrated by exhaustive tests.

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ESTABLISHED 1860

Sole Canadian Rights  
to Manufacture the  
"HYDE"

Anchor-  
Windlasses

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Engines

Cargo-  
Winches

Which have stood the  
test of 50 YEARS



PROPELLER  
WHEELS

Largest Stock in  
Canada

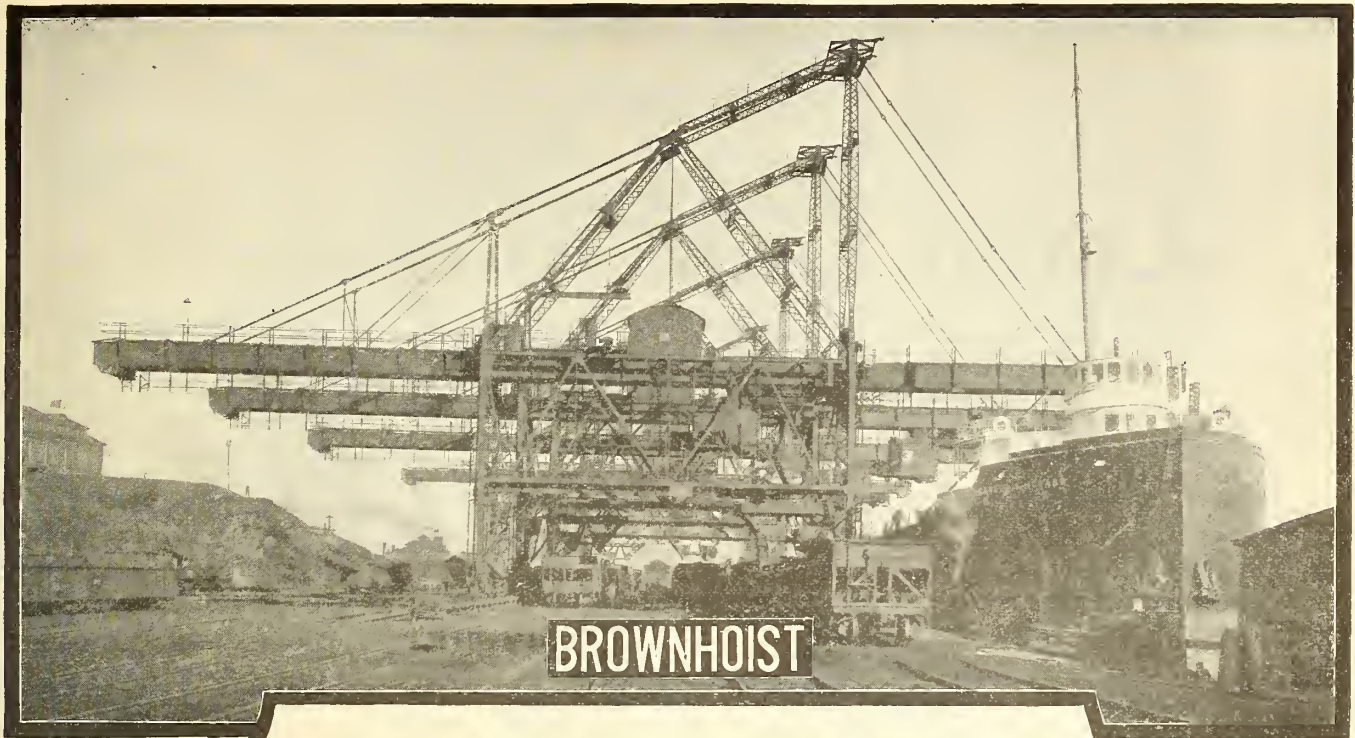
STEEL  
CASTINGS

Cut Shows Largest Solid Propeller Ever Made in Canada.

Manufactured by

**The WM. KENNEDY & SONS, Ltd., Owen Sound, Ont.**





## Ore and Coal Handling Machinery

To handle ore and coal rapidly and at a low cost is the aim of dock and vessel men, furnace and mill superintendents, and railroads. It is very important that good equipment be used, otherwise there will be trouble and delays.

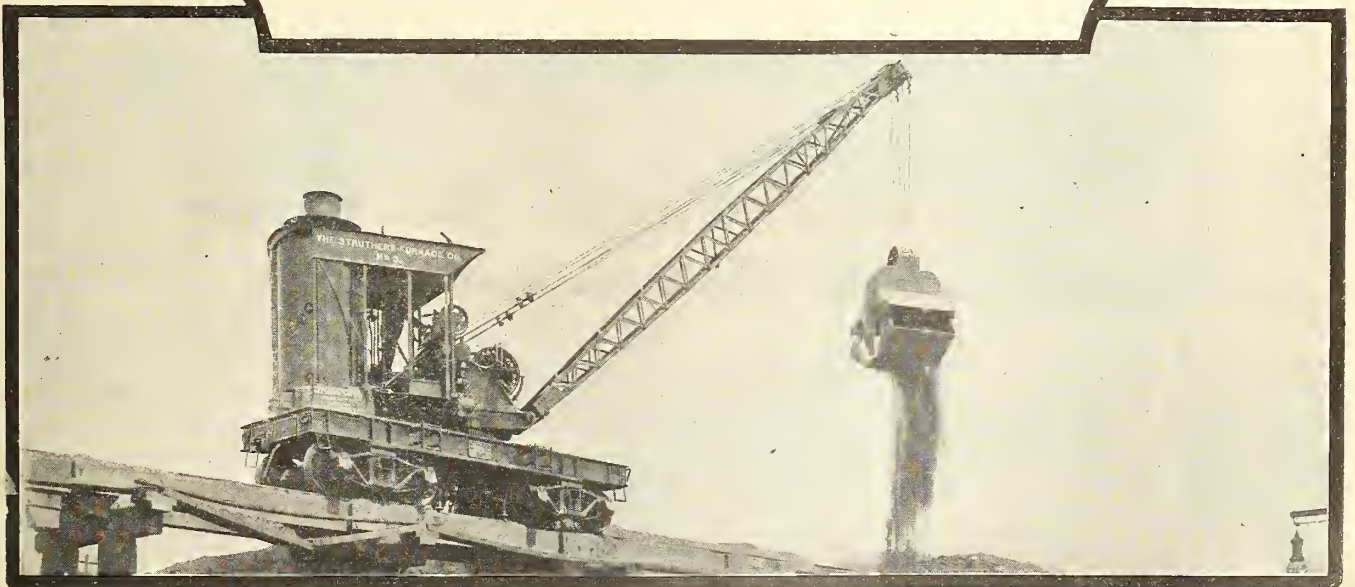
Brownhoist Machines for ore and coal consist of various types and sizes, two of which are shown here. The upper view shows a plant of 4 Brownhoist Ore Unloaders at Conneaut, Ohio. The lower view shows an 8-wheel Brownhoist Locomotive Crane used by The Struthers Furnace Co. for handling ore, coal, coke, stone and pig iron.

Brownhoist Machinery for handling ore and coal have been used for 38 years, and can be found in many parts of the world. These many years' records prove them to be fast, safe and durable. You can depend upon them. Brownhoist equipment may cost more, but is worth it.

### The Brown Hoisting Machinery Company Cleveland, Ohio, U. S. A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, Etc.  
as well as Smaller Cranes and Hoists.

Branch Offices in New York, Pittsburgh, Chicago and San Francisco.





# Lend Your Money— Give Your Time

Let every Canadian measure his responsibility towards the Victory Loan 1918 according to his ability to work for its success.

While to the people at large, the call comes as an appeal for dollars, there are many who must do more than subscribe to the loan, if they are to fulfil their obligations to their country and its brave defenders.

There are men in Canada who, because of the prominent positions they occupy in the world of business and finance, are especially fitted—and specially called upon—to influence others.

If you in addition to laying aside every available dollar for the loan—can induce friends, business associates and employees to subscribe, then to you comes the call for service, as well as the call for money.

Think of the men and women you could, by a word, induce to subscribe—people who, without that word from you—might remain in ignorance or apathy, might fail to buy a Victory Bond, or buy less than they should.

First see that every dollar you yourself can find, is put to real use in the cause of Freedom. Then, having loaned to the limit of your capacity, work to the limit of your ability, to influence your friends and your employees and all who look to you for guidance—that the call may be widely heard and fully answered.

## Do your part to make the Victory Loan 1918 a success

Issued by Canada's Victory Loan Committee,  
in cooperation with the Minister of Finance  
of the Dominion of Canada.





# BERTRAM

## MACHINE TOOLS

### For Structural, Bridge and Shipbuilding Plants

Modern in design and built for heavy service, our line embraces a varied equipment of Punches, Shears, Bending and Straightening Rolls, Coping Machines, Rotary and Plate Planers.

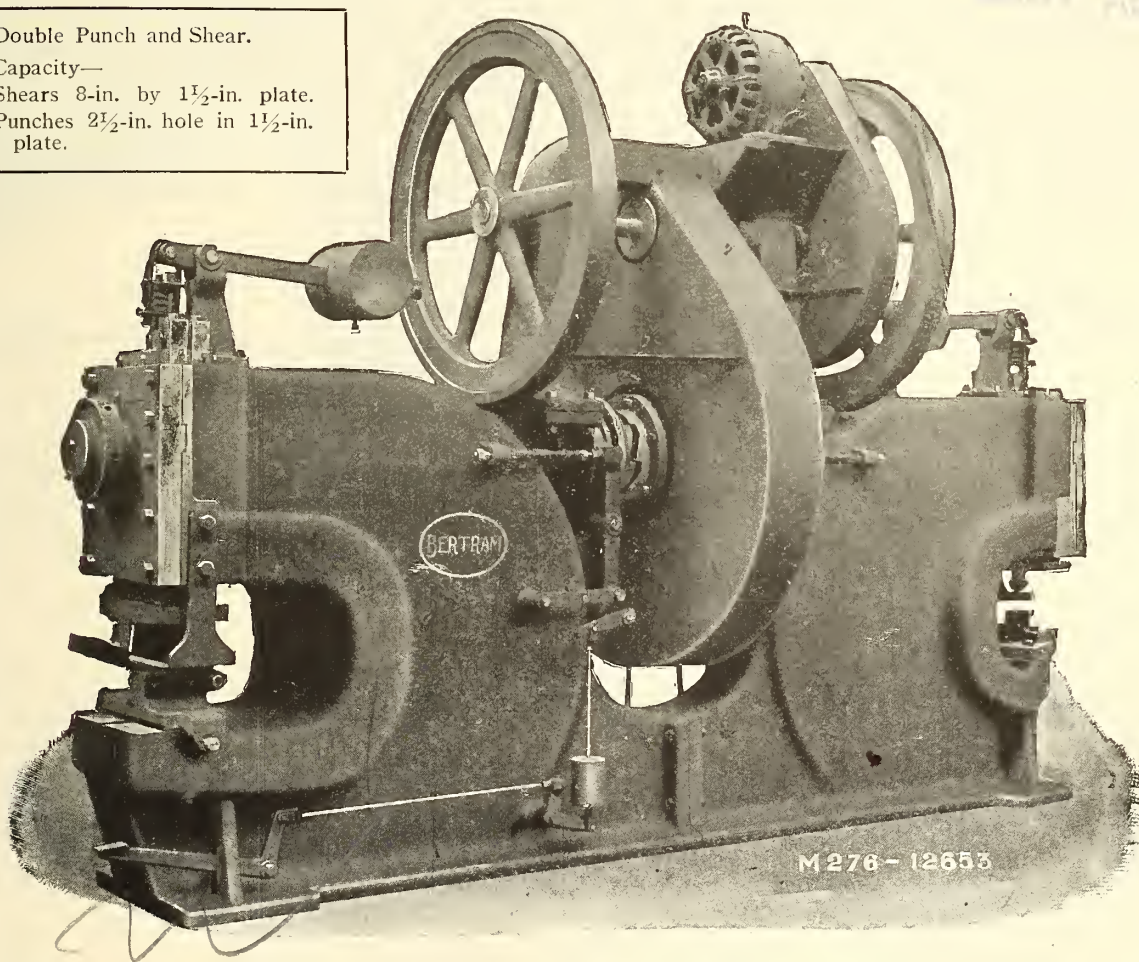
The assistance and advice of our engineers are yours for the asking.

Double Punch and Shear.

Capacity—

Shears 8-in. by  $1\frac{1}{2}$ -in. plate.

Punches  $2\frac{1}{2}$ -in. hole in  $1\frac{1}{2}$ -in. plate.



## The John Bertram & Sons Company Limited

DUNDAS, ONTARIO, CANADA

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723 Drummond Bldg.

Toronto  
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# WORKING FOR UNCLE SAM

RATHBONE, SARD & CO.

AND

DAVIS-BOURNONVILLE APPARATUS



*Day Shift  
Oxy-Acetylene Welders*



*Night Shift  
Oxy-Acetylene Welders*

*Oxy-Acetylene Welders  
and Government Inspectors  
at the Rathbone,  
Sard & Company Plant,  
Albany, N.Y.*



*Fully Equipped with  
Davis-Bournonville  
Oxy-Acetylene System of  
Acetylene Generation and  
Welding Apparatus.*

THIS is one of the many plants in the United States fully equipped with the Davis-Bournonville system of Oxy-Acetylene Welding, including acetylene generation on the premises, now engaged on 100 per cent work for Uncle Sam and his army and navy overseas and at home.

There is more Davis-Bournonville oxy-acetylene apparatus than of any other make in the metal-working plants of the country—in the steel mills, foundries, ship yards, munition plants, aeroplane factories, sheet metal working plants, general repair shops, and in the U.S. Navy Yards and with the U.S. Army at home and abroad—because it “leads the world” in range, efficiency, and has the longest successful experience back of it.

Stationary installations, with acetylene and oxygen generating systems or portable outfits, for every requirement, large or small.

## DAVIS-BOURNONVILLE COMPANY

General Office, Jersey City, N.J.

Atlanta  
Boston  
Chicago  
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Cleveland  
Detroit  
Jersey City  
Los Angeles



Minneapolis  
Niagara Falls  
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Pittsburgh

St. Louis  
San Francisco  
Seattle  
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*Factories at Jersey City, N.J., Elkhart, Ind., and Niagara Falls, Ontario*





## Fairbanks-Morse Railway Shop Supplies

Yale Triplex Blocks  
Norton Grinding Wheels  
Wells Taps, Dies and Gauges  
Cleveland Drills and Reamers  
Brown and Sharpe Tools and Cutters

Every Shop Requisite  
Bench Tools—Lathe Tools  
Blacksmiths' Tools—Carpenters' Tools  
Power Transmission—Goods Conveyors  
Anything you want—at a reasonable price



### The Canadian Fairbanks-Morse Co., Limited

*"Canada's Departmental House for Mechanical Goods"*

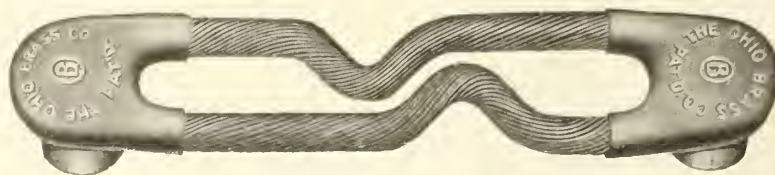
Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windson, Winnipeg  
Saskatoon, Calgary, Vancouver, Victoria





# PRODUCTS

*Quality First*



O-B Type F-3 Bond

## Examine an O-B Bond Quality Plainly Apparent

Take an O-B Stud Terminal Bond in your hands.

First of all you will notice the smooth finish of the terminals. They are milled accurately to size and each one is separately gauged by an inspector.

The terminal is a most vital part and so it is given special attention in O-B Bonds.

The highest grade of copper is used and handled very carefully during manufacture.

As a result, under pressure they expand evenly to make a tight enduring contact.

The quality of the weld between strand and terminal is not visible. But it shows up none the less in service.

It has taken years of constant effort to bring O-B Bonds to this present perfected state. And their quality is being and will be maintained without let-up.



Gauging the terminals

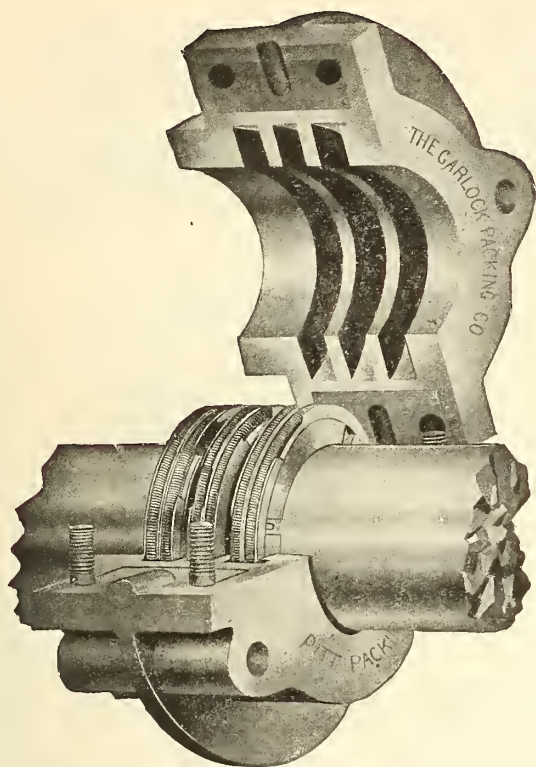


Welding the terminals  
(There is a homogenous union between strand and terminal)

***Good Bonding Saves Money  
O-B Bonds are Good Bonds***

**THE OHIO BRASS COMPANY, Mansfield, Ohio**





## GARLOCK Metal Packing

OUR position in the metal packing field is based on the principle that "No one style of metal packing can be made to meet all conditions." Working on this basis our experts study carefully the conditions surrounding each case, and with strict regard for mechanical principles, determine which type of packing is best suited to the conditions.

☐ The accompanying illustration shows our Flexible Packing, with split case, which is the most popular style and best all-round pack-

ing for stationary work, and when recommended by us to meet stated conditions, is guaranteed to give satisfactory service. This style is also made with solid or split-case to fit inside of stuffing box, when packing space is sufficient to permit inside application of case and segments. All of our metal packings are so designed that the piston rod has absolute freedom of lateral movement without affecting the efficiency or increasing the friction of the packing.

☐ Next to correct mechanical design the most important feature of metal packing is the material used in the bearing rings. Our materials are made from formulas which long experience has shown to give the best results. A special grade of cast iron is generally used for bearing segments, in order to secure minimum wear and friction, but under unusual conditions, or when considerable condensation enters stuffing box, bronze rings or segments of softer metal have to be used in the wearing parts.

☐ We can solve your metal packing problems, and we will give the usual Garlock guarantee of satisfactory service, if conditions are such as will admit of the successful use of any metal packing.

*Write for catalog describing our many styles of metal and fibrous packing.*

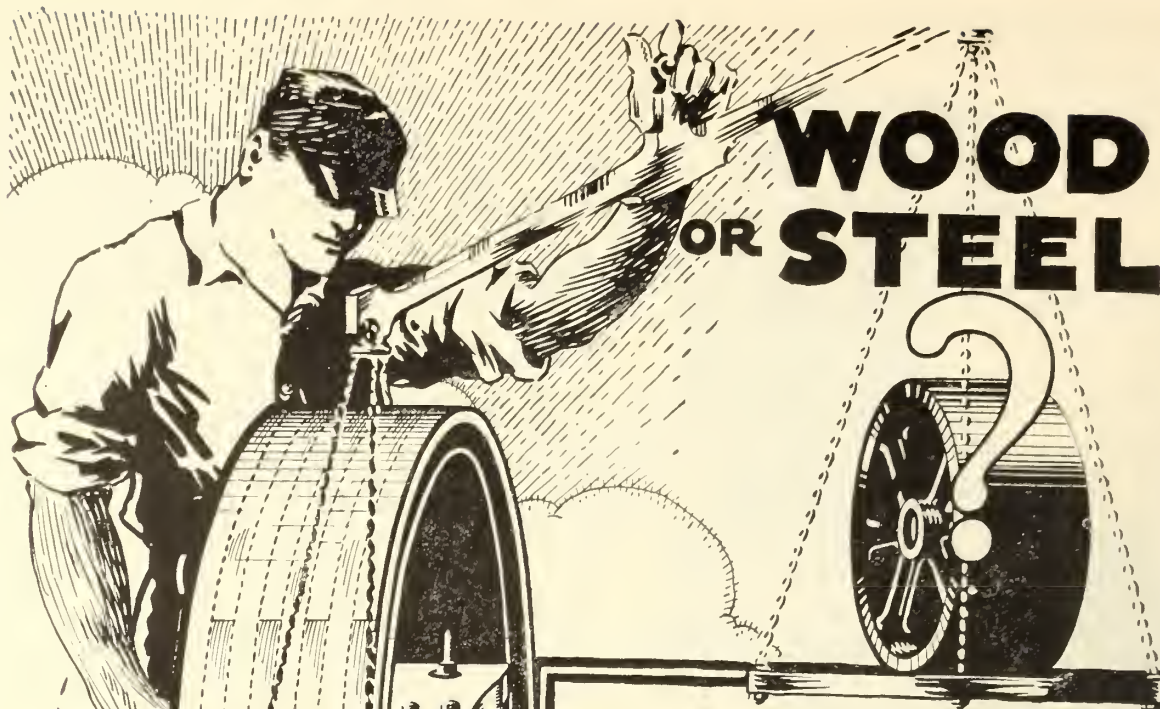
**The Garlock Packing Company - Hamilton, Ont.**

### BRANCHES :

Montreal, Quebec	-	-	-	409 Shaughnessy Building
Toronto, Ontario	-	-	-	404 Continental Life Building
Winnipeg, Manitoba	-	-	-	Galt Building
Calgary, Alberta	-	-	-	211 Eighth Avenue West







## Wood or Steel—Which?

There is a United States embargo on steel except for war orders, but we do not need to use this as a particular argument to persuade you to buy Dodge Wood-Split Pulleys.

Dodge Wood-Split Pulleys have sufficient qualities of their own to justify their use at any time in preference to metal pulleys.

Because of greater adhesion they provide a better belt surface, consequently, there is less belt slippage. They are lighter, hence there is less weight friction. Both of these qualities prevent waste of power. They also cost less to buy than metal pulleys.

And, you can get Dodge Wood-Split Pulleys when you order them—No waiting—No delays.

We ship in all sizes from 4-inch diameters up to 6-foot diameters on the day orders are received.

**The Dodge Manufacturing Co., Limited**  
Toronto, Ontario

Also 770 St. Paul St. West, Montreal

# DODGE

## WOOD SPLIT PULLEYS



# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg.,  
Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH,  
ENGINE and CAR OILS, and PERFECTION VALVE  
and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to  
five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organi-  
zation of skilled railway mechanics of wide and varied experi-  
ence. Services of Experts furnished free of charge to patrons  
interested in the economical use of oils.

## STREET RAILWAY LUBRICATION A SPECIALTY.

USE

## Galena Railway Safety Oil

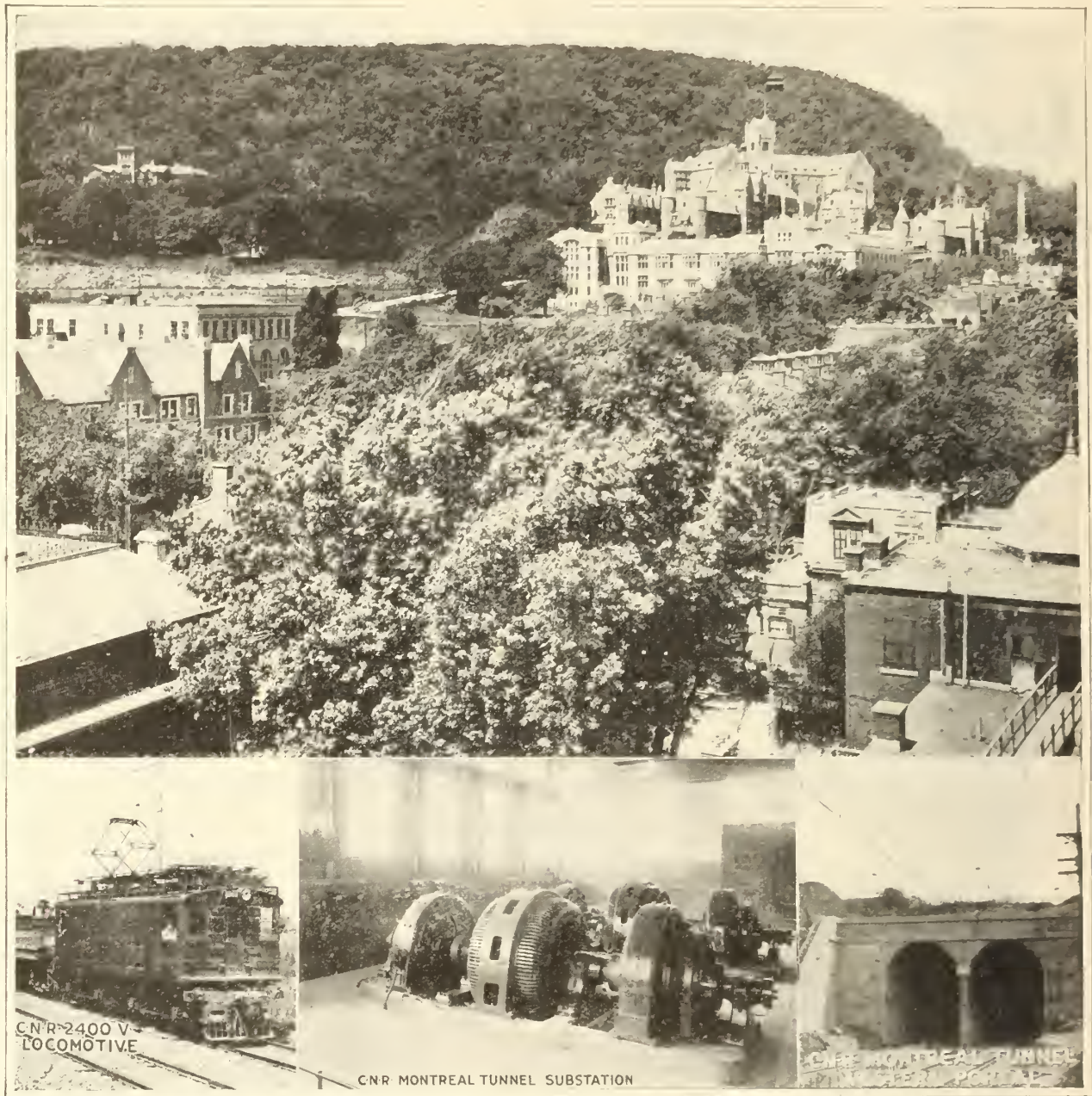
in Headlights, Marker and Classification Lamps, to secure Effi-  
ciency of Service, Maximum Candle Power, Clearness of Light.

## Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long  
time burning, to avoid smoked and cracked chimneys and  
crusted wicks.

Tests and Correspondence Solicited.





## Montreal Tunnel and Terminal C.N.R.

Our 2,400 volt. D.C. System selected as most economical for their combination of Trunk-Line Locomotive and Suburban Motor Car Service.

We are well equipped to deal with all the various problems arising out of Electrical Transportation and our Engineers will be glad to co-operate in solving them.

### CANADIAN GENERAL ELECTRIC CO. LIMITED

Head Office: Toronto. Sales Offices: Montreal, Quebec, Halifax, Sydney, Ottawa, Cobalt, South Porcupine, London, Winnipeg, Calgary, Edmonton, Nelson and Vancouver.



# War Output in Commercial Shapes

## Ingots

Square

8", 9", & 12"

Fluted

15", 18", 20" & 26"

Sand Cast Any  
Size.

## Blooms and Billets

Rolled

1 $\frac{3}{4}$ " to 6" Square

Cogged any size  
above rolled sizes.

## Forgings

Ship Forgings

Heavy Shafting

Locomotive Fr'g.

Electrical Work

Locomotive Axle

Car Axles

Miscellaneous

## Plates

High Carbon for  
Plows, Shovels,  
Harrow Discs  
Soft Centre  
Low Carbon

Any thickness and  
width up to 20"

## Castings

Locomotives

Cars

Electrical Work

Ship Castings

Rolling Mill

Steel Rolls

Miscellaneous

## Specialties

Draft Arm

Draft Gears

Truck Side Frames

Bolsters

Car Couplers

*We Specialize on High Carbon and Alloy Steels*

**The Dominion Foundries and Steel**  
Limited

HAMILTON

-

CANADA





## Why YOU Should Make Mudge Motor Cars Standard on Your Road

### Because:

1. Mudge engines work efficiently on kerosene or gasoline.
2. Mudge engines are air cooled. No water to dry out in summer or freeze in winter.
3. Mudge engines and parts are interchangeable, thus minimizing the number of repair parts to be carried in stock.
4. Mudge patented double frame rail construction insures strength and durability.
5. Mudge Automatic Carburetor adapts itself to all kinds of weather.
6. Mudge Motor Cars are made in models to meet all your requirements.
7. Mudge Motor Cars are always ready for action.

A thoroughly equipped and efficient service organization stands ready to assist you. Where shall we send you descriptive information?



## Mudge & Company

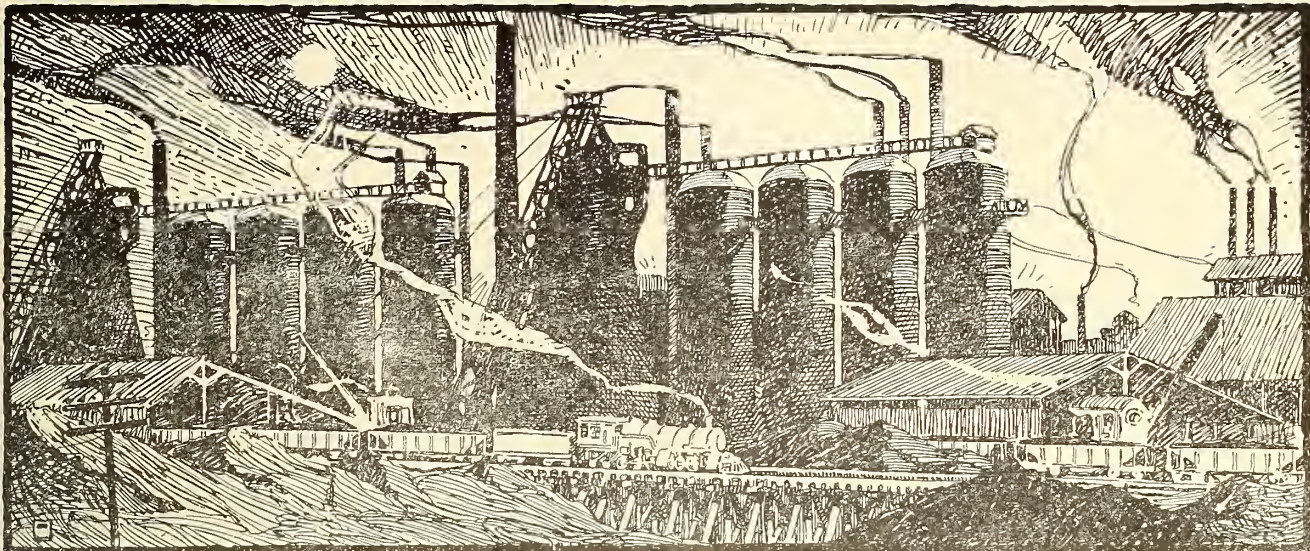
*Railroad Motor Car Specialists*

Railway Exchange

Chicago, Ill.







## LITTLE WORDS WITH BIG MEANING

**Quality**

According to "Webster," Quality is "an excellence of character; natural superiority."

**Service**

Webster's definition of "Service" is: "The performance of labor for the benefit of another."

We use these words advisedly—fully understanding their definitions—and realizing the obligation we place upon ourselves by their continued use in connection with our products of Iron and Steel, and our attitude to the people we serve.

THE  
**STEEL COMPANY**  
 OF  
**CANADA**  
 LIMITED  
 MONTREAL HAMILTON

Pig Iron,  
 Steel & Iron Bars,  
 Horse Shoes,  
 Steel and Iron Products.

Steel Billets,  
 Track Spikes &  
 Bolts, Forgings, Wire  
 of every description.





# **GENERAL RAILWAY SIGNAL COMPANY**

## **OF CANADA LIMITED**



Railway Operating Engineers, Manufacturers and Contractors  
Electrical and Mechanical Signal Apparatus

Specialties | Single Track Signaling  
| Electric Interlocking

Electric  
Interlocking

Mechanical  
Interlocking

Highway  
Crossing Gates

Highway  
Crossing Bells



A-P-B. Automatic  
Block Signals for  
Single Track

A-C. and D-C.  
Automatic Block  
Signals for  
Double Track

### **Advantages of Absolute-Permissive Block Signaling (A-P-B)**

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.



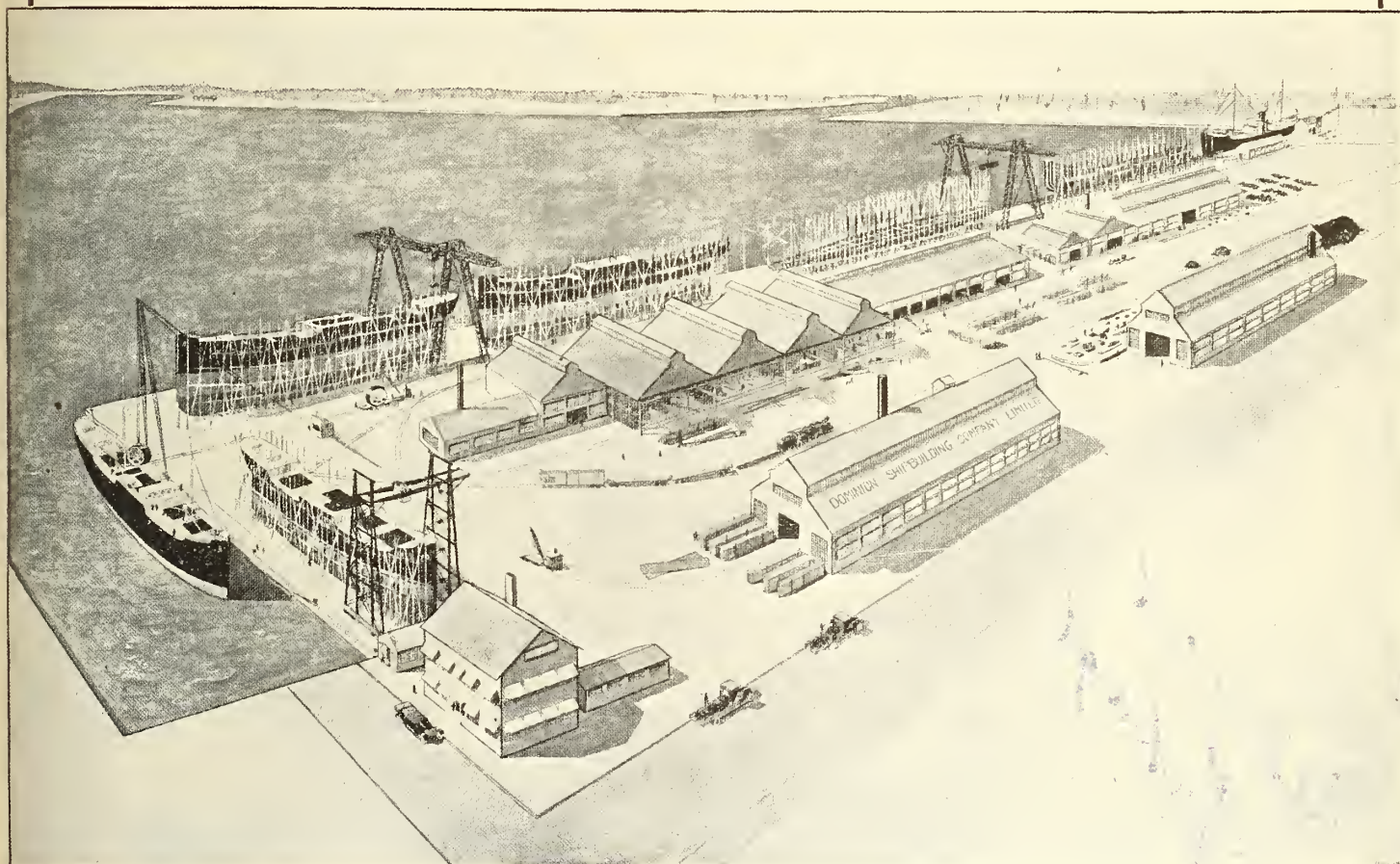
**Head Office and Works**  
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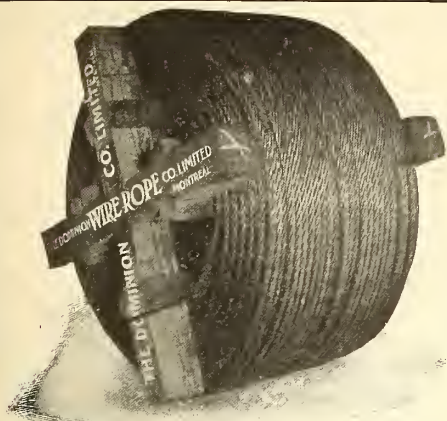
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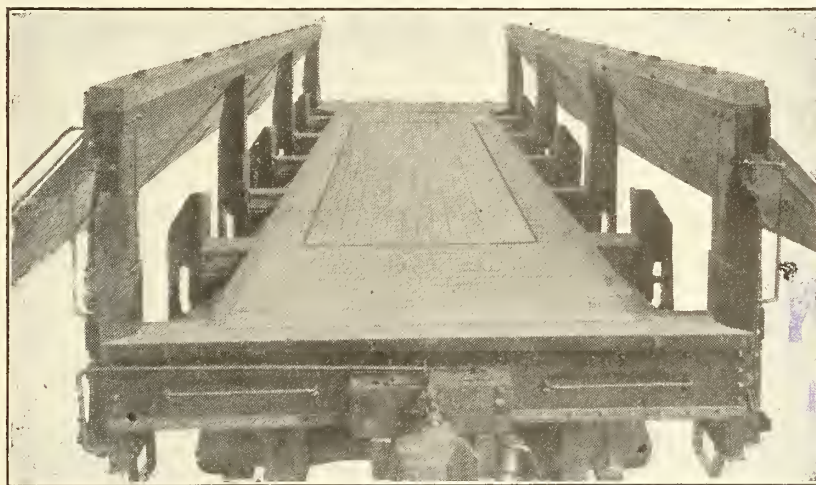
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The Car that will  
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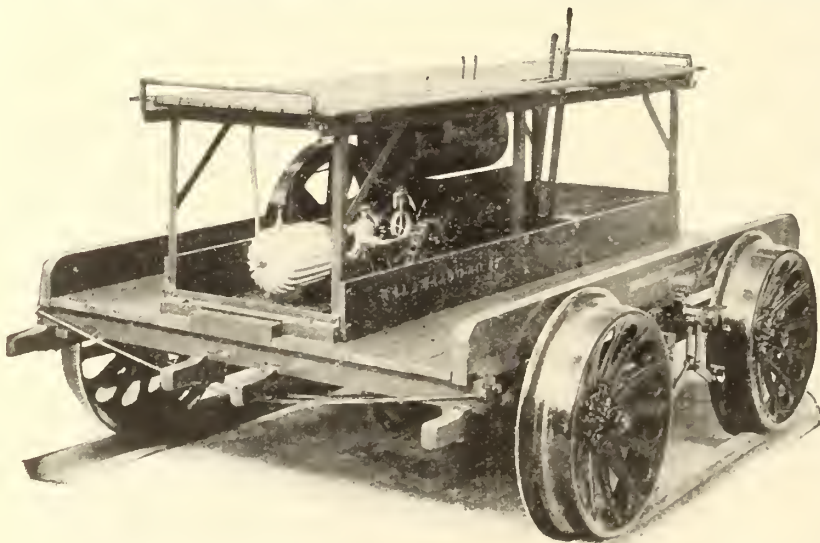
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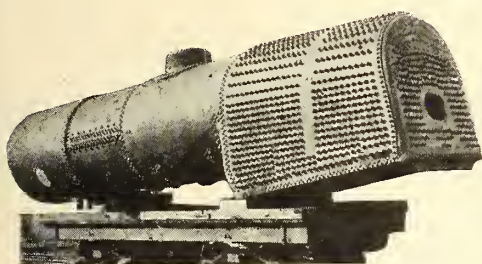
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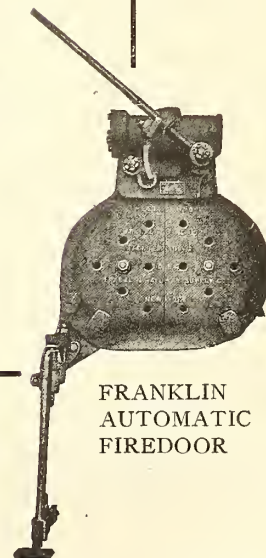
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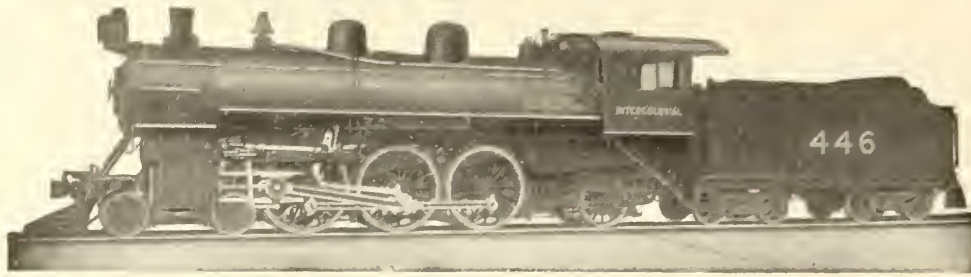
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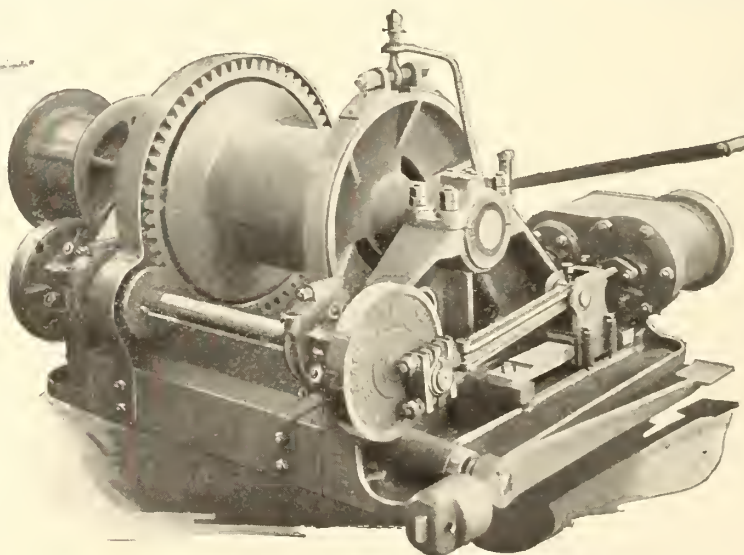
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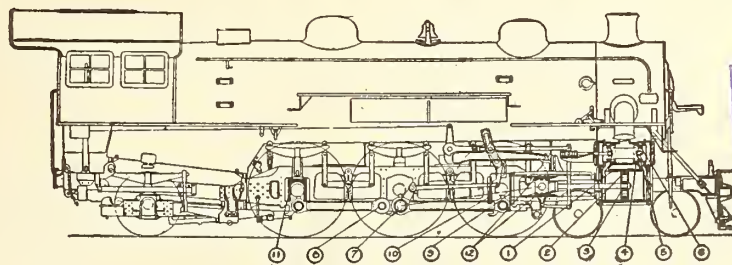
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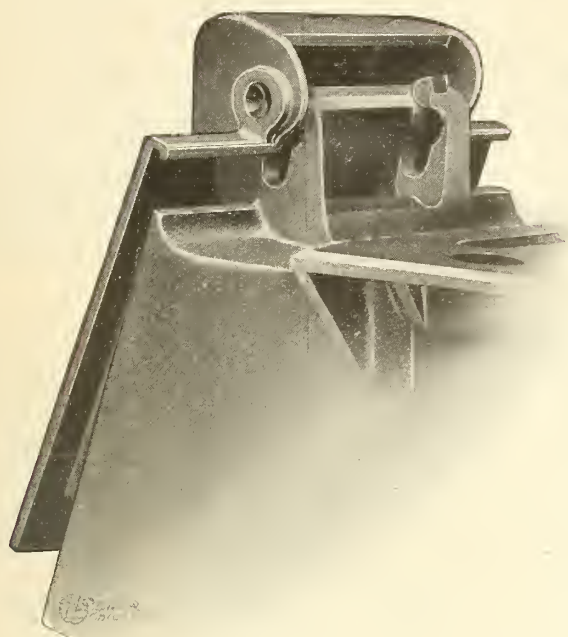
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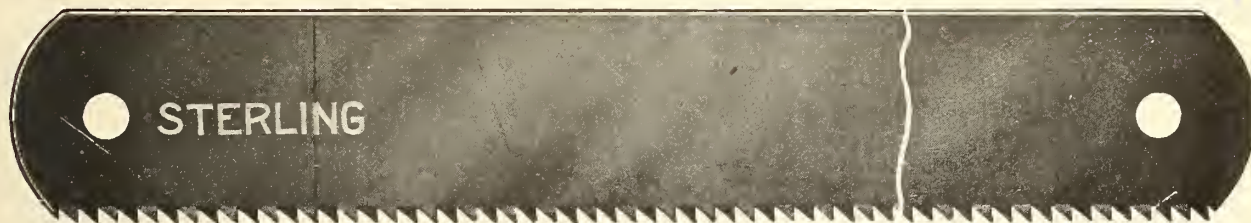
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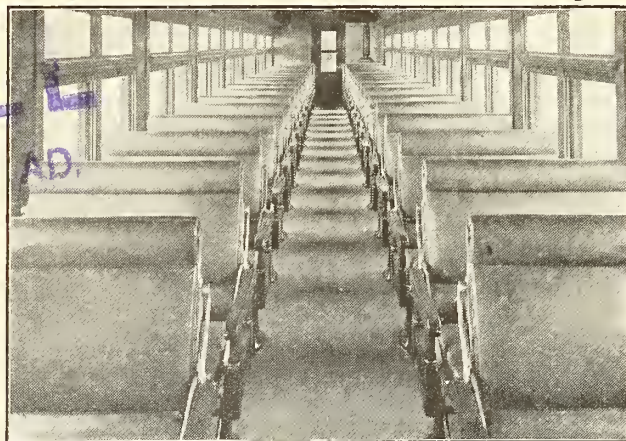
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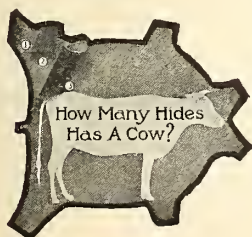
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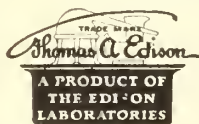
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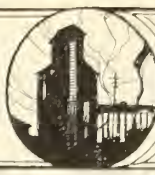
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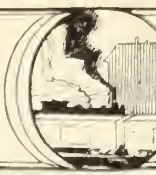
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These technical experts are not merely salesmen, *they know belting* and its requirements thoroughly and their services are at your command, without charge whether, you are a customer or not.

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The Dominion Rubber System is not only the largest, but the oldest organization of its kind in Canada, and has specialized in belting for more than fifty years—its entire facilities and Dominion Wide Service are at your command.

If you are in trouble or in doubt about a belt, 'phone, write, or wire our nearest branch and *let us prove that our Belting service means more than just selling belts.*

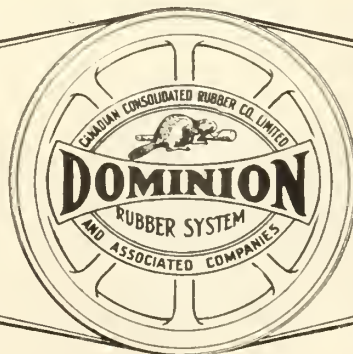
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# Canadian Railway and Marine World

November, 1918

## A Study of the Mechanics of Curve Resistance.

By J. G. Sullivan, Consulting Engineer, C.P.R., Winnipeg, formerly Chief Engineer, Western Lines, C.P.R.

This is a subject that the writer has been interested in for a great many years, and as chairman of committee 16, Economics of Railway Location, American Railway Engineering Association, he has had occasion to study several theories on this subject, even to the theory that curve resistance was caused by the friction between the inner wheels and the inside rail of the curve, on account of the obliquity of traction. The majority of the theorists, however, give centrifugal force the center of the stage as one of the main factors in this problem.

The Economic Theory of Railway Location, by A. M. Wellington (6th edition), states in paragraph 296, pages 233 and 284: "The coning now put in wheels is chiefly useful as a prospective provision for wear; and experiment shows that whether the wheels be coned or not, the tendency of any rectangular wheel-base is to roll very nearly in a straight line." This statement appears logical, but unfortunately it is not entirely true, as the writer will try to prove further on. What Mr. Wellington said years ago is still true (paragraph 292, page 281): "Curve resistance has never yet been exhaustively investigated, and our knowledge is in several respects deficient." The late Mr. Wellington seemed to have the most accurate knowledge of the actual conditions of any authority that the writer has ever read; still, we cannot agree with some of his conclusions. For instance, paragraph 314, page 294, in speaking of the conditions that exist, as shown in his figure 31, same page, states: "The consequences of this condition of things are these: first, the disproportion in the diameter of the wheels; hence the necessary longitudinal slipping, and hence the curve resistance is materially increased. If the increase of radius of wheel be  $\frac{3}{16}$  in., the extra distance slipped through per station of 100 ft. by one wheel will be 1.16 ft." The writer believes, which he hopes to prove later, that the emphasized statements are exactly opposite to the facts.

Referring to the theory of centrifugal force in this problem, the writer believes that with track having anything like the correct elevation of the outer rail, this is a very minor factor, that as far as the action of centrifugal force on the car body is concerned the result is simply the placing of more or less weight on the outer rail. Centrifugal force, acting on the truck, may effect the problem to a slight degree.

The theory of obliquity of traction, of course, is absurd, for we have on all railways positive evidence that the flanges of railway wheels cut away the head of the outside rail, while the evidence is plain that there is no flange wear against the head of the inner rail. The writer has no doubt that this obliquity of traction has a slight effect on the problem, but that this effect is very small is proved by the fact that a locomotive will practically push as many cars as it will pull. In the first place, the obliquity of traction

is forcing the equipment against the outside rail, in addition to the other force that makes the flanges run against the outside rail, while in the latter case, the obliquity of traction is pulling the cars away from the outer rail; therefore, if this force was of any great moment, doubling the effect, as in the cases mentioned, would be more apparent than it proves to be in actual practice.



J. G. Sullivan, C.E.

The writer is well aware of the fact that it is easier to tear down than to build up, and the reader will rightfully say: "What is the good of all this criticism unless we can get some constructive material in its place?" To this the writer will have to admit that he cannot offer any scientific formulae that will satisfactorily explain actual curve resistance as we find it in practice. On the other hand, the writer has never seen in print a statement of what he considers the real reason why all outer wheels of railway equipment exert a pressure against the outer rail on a curve. Wellington states it is the rigid rectangular shape of the wheel-base. Those who pin their faith on the centrifugal force theory would make you believe that the wheels press against either the inside or outside rail, depending on the elevation of the outer rail in reference to the velocity. This we know from experience and practice is not true.

The reason all wheels of modern equipment, regardless of degree of curve, speed of train or elevation of track (within reasonable limits) exert a pressure

against the outer rail on a curve is the fact that a revolving cylinder tends to rotate in a straight line perpendicular to the axis of rotation; or to reverse this proposition, to make a revolving cylinder move in a direction not parallel with a line perpendicular to the axis of rotation requires a greater force than the force necessary to rotate the cylinder in a straight line perpendicular to its axis of rotation. If our wheels were manufactured with flat treads and vertical flanges, on account of their being fastened rigidly to the axle, we would have in practice our equipment carried on revolving cylinders, with a portion of the cylinder cut away, and if this were the case, the writer believes it would be possible to devise formulae that would correctly represent actual amount of curve resistance. The writer's ideas can be made clearer by reference to plate 1, figs. 1 and 2, which represents a 4-wheel rectangular truck, with wheels rigid on the axle, rigid wheel-base and flat tread. The smallest force necessary to move this truck is the one required to move it on a straight line, perpendicular to the axis of rotation of the wheels. The force necessary to move such a truck parallel to the axis of the wheels, would be the weight of the truck multiplied by the coefficient of friction between the truck wheels and the surface on which it was skidded. If we represent these two forces by  $y$  and  $x$  respectively, and assume that we have a power at B moving in a straight line CB, such as a locomotive on a truck, and that this locomotive was attached by a flexible rope or cable to the center pin of the truck at C', the connection being made by swivel, and other details so perfect that the truck would maintain the same relative position while it was being moved along line C'B', the trucks would take the position so that the tangent of angle (a) made by the cable C'B and a line parallel with the axis of the trucks passing through C' would be constant and equal

to  $\frac{y}{x}$  and the strain in the cable would

be equal to  $\sqrt{y^2 + x^2}$ , and resolving this

force C'B' into two forces, one parallel to the line C'B' and the other perpendicular to this line, we get the actual pull in direction C'B' equal to C'y", and the pull on the locomotive at right angles to the track is equal to C"x"; if we give a definite value to angle  $\phi$  it would be easy to obtain actual values of  $x$  and  $y$ . Instead of allowing the truck to take the position indicated in fig. 2, if there were small cleats (R.R. and R'R') nailed on the flat surface on which it is assumed the truck is moving, as indicated in fig. 1, neglecting the amount of friction between the wheel and the cleat, the pull on the locomotive would be C'y" and the pressure against the cleats would be C"x". Now, instead of having a straight line C B, if we have a curve line passing through C, we could replace the two cleats



by a curved rail and have almost identical conditions. If we then had a flat tread wheel and vertical flange, as shown in fig. 4, with correct elevation, half the axle load would be on the outer rail and the horizontal pressure against the outer rail would be the total load on the axle, multiplied by the coefficient of friction necessary to skid the wheels. This force, acting against the flange of the rail, something in the position of the line AB, shown in fig. 5, might be susceptible of a mathematical solution, and we could no doubt get formulae which would correctly represent curve resistance as we know it to exist. Now, everything that has been said in regard to the truck in fig. 1 and fig. 2 would be actually true if applied to a single set of wheels.

It is generally conceded that curve resistance amounts to approximately 0.8 lb. per ton of load per degree of curvature. A great many believe that the major por-

rect, there would be no flange pressure on either rail; in other words, the diameter of the wheels was made directly proportional to the length of the two rails on an 8° 10' curve. These wheels were turned with a standard flange, but with a flat tread; they were put under C.P.R. steel flat car 311,074, 36 ft. 10 in. long, 5 x 9 in. journals, a simplex truck frame, center to center of axles 5 ft. 4 in., center to center of trucks 26 ft. 7 in., Susemihl side bearings. The tare of this car was 31,200 lb., live load 99,000 lb. of steel rails. The first experiments made with this car were with the idea of testing the tractive force necessary to move the same.

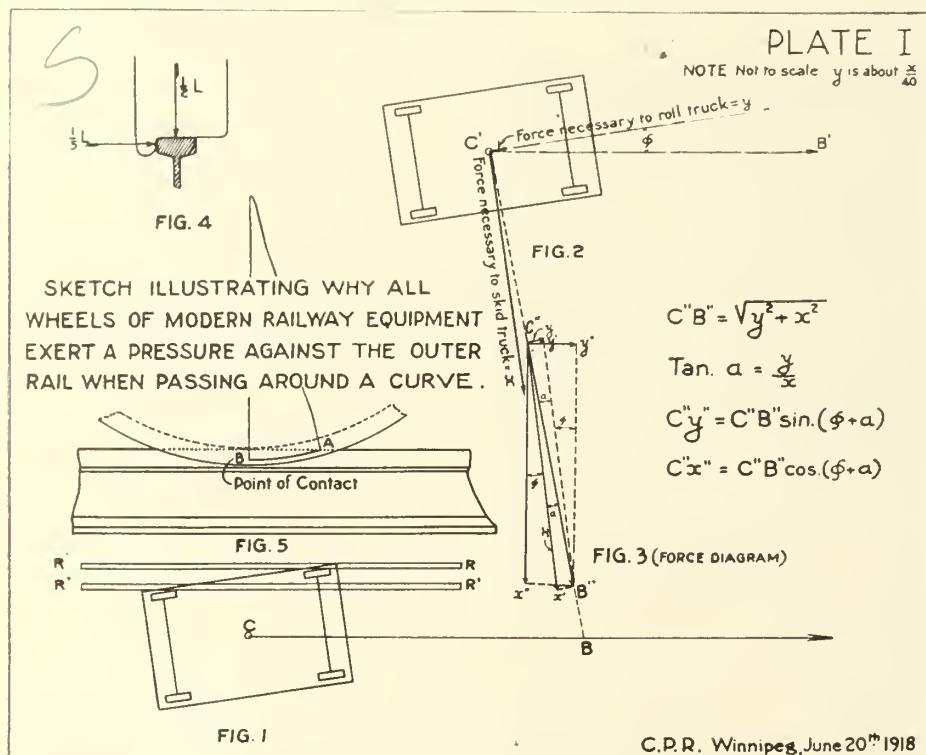
The writer asked the C.P.R. Mechanical Department officials to rig up a system of levers with a spring balance, that would be capable of measuring the tension necessary to pull the car on a level, straight track. The Mechanical Department officials, however, were of the

expected, viz., that the resistance on the 8° 10' curve was only 50% to 60% of the resistance on straight track, and when the car was pulling over the 5° reverse curve, which was really too short to get a constant pressure, being less than 150 ft. long, the indicator went up 10 to 20 over what it had been on straight track.

A very instructive lesson was obtained through a mistake that had been made. In going around the long 8° 10' curve at all speeds, varying from 5 to 20 miles an hour, it was noticed that the trucks would first run against one rail and then against the other. It was further noticed that the conditions were the same at every trial; that is, the location where the trucks would press against the outer rail were the same. The writer sent for the resident engineer, who was instructed to measure the curve, and he reported:—"I thought you wished to know what degree of curve would best fit this location; the curve is not true, it must be thrown 5 or 6 in. in or out at several points." This, of course, was the explanation why the trucks did not run true. We simply had a series of compound curves, some sharper and some flatter than 8° 10'; the elevation at this time was about 3 in.

The next test consisted of pulling C.P.R. flat car 310,173, similar in all details to 311,074, except that the former had standard trucks, which were in very good shape. The dynamometer car results indicated, as we expected, that the resistance on straight track was only 40% to 50% of the resistance on the 8° 10' curve. The tests were then stopped, the curve was properly lined and surfaced and the elevation reduced to 2 in. At a later date exactly the same tests that were mentioned above were repeated. The packing was somewhat loosened up and more accurate results obtained, but still not accurate enough to be given as a measure of either curve or track resistance. While the relative resistance of straight, versus curved track, was quite constant, the indicated resistance of different tests on the same track varied too much to justify even taking the mean of the number of tests we made as a measure of track resistance. The results, however, prove conclusively that the resistance offered on an 8° 10' curve to the car with the special wheels, was only 50% to 60% of the resistance on straight track, and, as you would expect, with another similar car 310,026 with a total weight of 129,000 lb., with nearly new standard wheels, the resistance on straight track was only 40% to 50% of the resistance on the curve; but the most important feature of this test was the fact that the trucks under 311,074, while going around the 8° 10' curve, never pressed against the head of either the inner or outer rails, but ran exactly as true as the ordinary truck runs on a straight track, as this was true regardless of the speed, from 5 to 25 miles an hour, thus proving, at least to the writer's mind, that the rectangular shape of wheel-base, especially so for the short wheel-base of a freight truck, has very little, or nothing, to do with causing the pressure of the wheels against the outer rail.

The next test that was made was one to determine, if possible, which wheels of a railway car do the skidding and the amount thereof. The writer has always been of the opinion that on account of the extra horizontal pressure of the leading wheel of a truck against the outside rail, that unless the vertical pressure on the inner rail was largely in excess of the vertical pressure on the outer rail, there would be very little or no skidding of the



tion of this resistance consists in the skidding of the wheels in a longitudinal direction, on account of the difference in length of the inner and outer rails. If this skidding actually took place, the difference in length between the inner and outer rails, on a one degree curve for a distance of 100 ft. being approximately 1 in., one half the load on the wheels would have to be skidded 1 in., or if the skidding backward and forward were equal, the entire load would have to be skidded 1/2 in.; and even assuming a large coefficient of friction for a moving body, say, 22%, a little calculation will prove that the work done in this skidding would only account for 1/4 of the 0.8 lb. mentioned above.

In order to check the writer's ideas that the greater portion of curve resistance was caused by the pressure of the wheels against the outer rail, caused by the tendency of a cylinder to rotate in a line perpendicular to its axis, as mentioned before, the writer had a long 8° 10' curve, leading off the yards in Winnipeg, carefully measured up. He then calculated what diameter the inner and outer wheels should be, so that in passing around this curve, if the theory of coning proved cor-

rect, there would be no flange pressure on either rail; in other words, the diameter of the wheels was made directly proportional to the length of the two rails on an 8° 10' curve. These wheels were turned with a standard flange, but with a flat tread; they were put under C.P.R. steel flat car 311,074, 36 ft. 10 in. long, 5 x 9 in. journals, a simplex truck frame, center to center of axles 5 ft. 4 in., center to center of trucks 26 ft. 7 in., Susemihl side bearings. The tare of this car was 31,200 lb., live load 99,000 lb. of steel rails. The first experiments made with this car were with the idea of testing the tractive force necessary to move the same.

Six or seven tests were made in hauling this loaded car over this 8° 10' curve, which was over 1,000 ft. long, then over a distance of 2,000 ft. of straight level track, thence over a short 5° curve in the reverse direction. It was apparent from the start that on account of the packing our machine was not delicate enough to accurately measure small pressures. The writer, therefore, abandoned the idea of attempting to get a definite figure in pounds per ton with this machine, but the results prove conclusively what the writer

C.P.R. Winnipeg, June 20<sup>th</sup> 1918



outer front wheel of the truck. The writer is convinced that this is true, also that there is no backward skidding of the inner front wheel, which was more than at first expected.

In plate II, there are five figures indicating various conditions that we meet with in general conditions. Fig. 1, shows standard wheels on C.P.R. standard 85 lb. rail straight track. The circumference that is measured in mating wheels is indicated as on "wheel diameter line," 1 in. from the base of flange and about 1 in. from the end of the 1 in 20 taper; that is, the radius of the wheel at the end of the 1 in 20 taper is about 0.05 of an inch less than at the point of measurement, making the small diameter about 0.10 of an inch less than at the point of measurement; that is, the circumference of the wheel at this point is nearly  $\frac{1}{3}$  of an inch less than at the point of measurement. The other figures are self explanatory, and indicate conditions that do exist, as any investigator can prove for himself by taking small gauge copper or soft iron wire and placing it transversely across the rail under a moving wheel on a curve. The condition shown in fig. 5 will not, of course, be constant, for the reason that the outside wheel in that case is rolling on such a very large diameter that it would soon slip away from the rail entirely if it could be supported on this large diameter; but what takes place in this case, and which can be verified by watching the leading inner wheel of a truck travelling on a worn rail (as is indicated) is a nosing motion; that is the wheel is constantly moving with a jerky motion. This feature can be very well observed by riding on the pilot of a locomotive with a sharp flange pony truck, whenever the same is going over a track where the outer rail on a curve is badly worn.

The writer has purposely called the attention of the reader to plate II and the various figures thereon, to prepare his mind for an explanation of the apparently contradictory evidence obtained in some tests made with a view of attempting to measure the amount of skidding of the wheels. C.P.R. flat car 310,016, gross weight 129,100 lb., was run at a speed of about four miles an hour a distance of about 600 ft. over the above mentioned  $8^{\circ} 10'$  curve; the car was started from rest, each wheel marked at point of contact with rail. It was then moved north until the leading wheel had made 70 revolutions, the revolutions on all the other wheels were counted and measurements taken to show how far they would have to go to complete the 70 revolutions. The car was then run in the reverse direction. Table I gives the results of these measurements; in column 2, actual distance traversed by each wheel in making 70 revolutions is recorded; in column 3, 70 times the circumference taped in the field close to the flange. It should be noted here, however, that only the wheels on the one side of the car were taped. It was taken for granted that they would be properly mated, as they showed no flange wear that would indicate they were not. Column 4 gives the difference, or apparent skidding distance of each wheel, if the wheels had been running on the diameter as measured. After the test was made, the car was sent to the shop, the wheels taken out and officially taped. In column 5, is shown 70 times the circumference of this official taping, and in column 6 the difference between 70 times the circumference and the actual difference travelled on the rail. We started out with the idea that there would be very little or no skidding of the outside leading

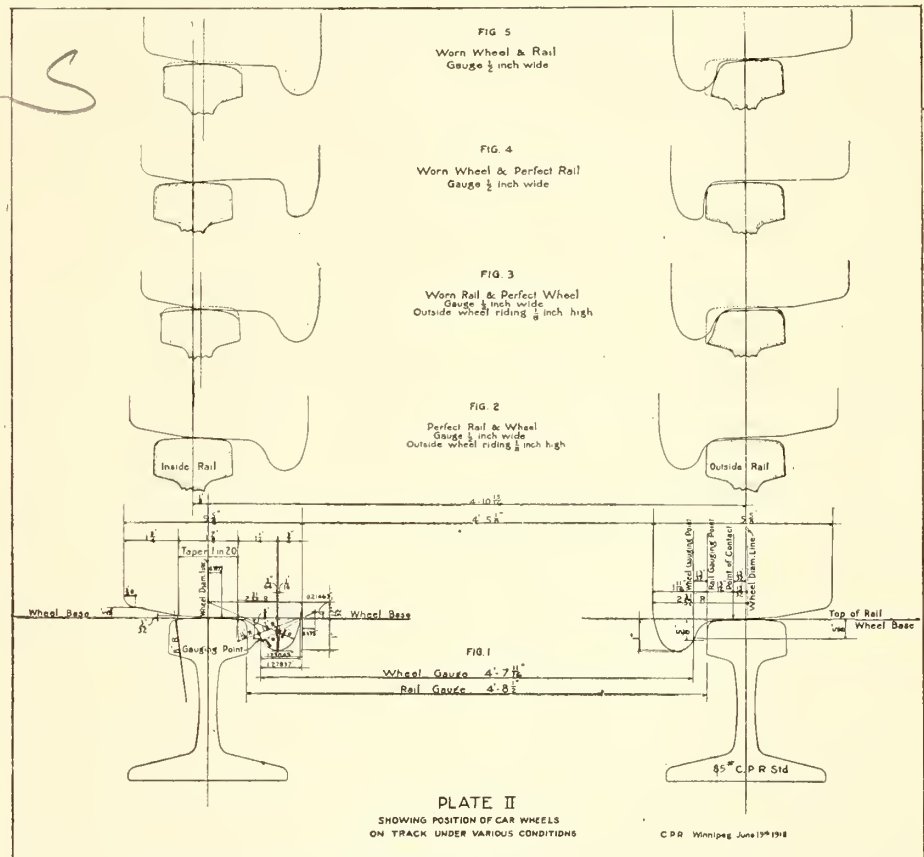
wheels of any truck. If one will note, however, the outer wheel's axle, nos. 1 and 3, column 4 and 6, the car going north, and also the outside wheel on axles 2 and 4 in column 4 and 6, when the car was going south, one would be apt to say that these were the wheels that did the skidding. As a matter of fact, however, from experiments made with a very soft fine wire, the writer is convinced that the outer leading wheels on a truck take the position indicated in figs. 2, 3, 4 and 5, plate II, and that there is absolutely no backward skidding of the inner leading wheels of any railway truck in rounding a curve. Any skidding that may take place in the wheels of the leading axle is equal and in a forward direction, taking the very small amount of indicated backward slip of the inner wheel axles 1 and 3 going north, and 2 and 4 going south, column 4, where we know the taping was

this forward skidding of both wheels of leading axle is quite natural.

It should be noted here that 5 or 6 rails were taken from the inside of the car, and placed on the outside, in an attempt to balance the vertical pressure on the two rails of the curve, on account of 2 in. being too much elevation for a speed of 4 miles an hour. However, there were not enough rails moved to entirely overcome the effect of the 2 in. elevation.

If the reader will again look at figs. 2, 3, 4 and 5, he will see how easy it is to get a wheel to ride  $\frac{1}{8}$  of an inch or more high; that is, increase the diameter on which the wheel rotates by  $\frac{1}{4}$  of an inch and that is all it requires to account for the extra 4,862 ft.

Now, making a study of all the outer rear wheels of the trucks, it is very plain to the writer, as observation and experiments proved, that these wheels press



taken on a larger diameter than the one the wheels were rotating on, and taking the figures in column 6 for the inner wheels of the leading axles of the trucks, which indicate a positive forward slip of the inner wheel, when we know that the diameter on which the wheels were rotating could not have been larger than the diameter on which measurements were made, would indicate that the outer wheel was pressed so hard against the outer rail that the resistance against free rotation was so great that the result is that both wheels were actually skidded a short distance forward. It is well known that a speedometer attached to the rear wheel of an automobile will register a greater amount of miles than one attached to the front wheel of the same diameter. If we reversed this situation, and there were obstructions placed in the way of a wheel, equal to the force exerted in driving the car, we would expect this wheel to show a loss in distance equal to the gain in distance shown by speedometer on the rear wheel. It appears to the writer that

against the outer rail and ride on a larger diameter than the official taping indicates, but not sufficient to overcome skidding entirely; that is, there is some skidding of the inner wheel of the rear axle of a truck, although the amount is rather small. This conclusion is directly opposite to that stated in paragraph 302, page 285, *The Economic Theory of Railway Location*, by Wellington. On a test with C.P.R. flat car 311,074, with the special wheels, on about 600 ft. of straight track, measurements were made for only the leading truck, and it was found that there was about 3 in. slip on the larger wheel of the leading axle and about 10 in. on the larger wheel of the rear axle. These amounts were reversed when the car was run in the reverse direction, and as the difference in the diameter of wheels, the treads being turned flat, amounts to about 4.2 ft., in going a distance of 603 ft., the writer was convinced that the small amounts of slip mentioned, 3 in. and 10 in. respectively, were accounted for by the fact that the wheels of smaller diameter,



in their attempt to mount the rail, rode on a larger diameter, and that there was very little, if any, slipping of the smaller wheels.

Similar tests as to that taken with C.P. R. car 310,016 had been previously made with C.P.R. flat car 310,073. They confirmed exactly the results obtained with car 310,016, but the car got out of the yard before the wheels could be officially taped, and the results made of that car are not reported. Another test on a side track, laid parallel and on the outside of the 8° 10' curve, track laid with 56 lb. steel, C.P.R. car 310,016 loaded as in the experiment recorded, gave practically identical results with those recorded.

The writer's object, in giving this matter to the public, is to revive interest in this subject, bring out discussion, and if possible get more information on this important question. It is only when the actual causes of trouble are really understood that the proper remedies can be applied. The second reason is to call the attention of railway operating officials to the fact that it is a waste of fuel to haul over railways cars, the wheels of which are not running true. It is the writer's belief that over 75% of the wheels that are taken out of service, on account of

general any skidding that does take place is on the inner wheel of the rear axle.

The reader will naturally ask: "If there is very little skidding of wheels, wherein lies the considerable resistance offered by curves that we know from experience actually exists?" That is the problem the writer started out to try and solve, but as stated at the beginning, he cannot give any reasonable formulae. The writer had formulae for the case of flat wheels and vertical flanges, that worked out beautifully close to the accepted amount of resistance offered by curvature in these formulae; however, coefficients of friction were taken rather large for bodies actually moving on each other, and the horizontal pressure against the outside rail was assumed to be  $\frac{5}{8}$  in. below the top of the flat top and vertical side of rail, as shown at B, figs. 4 and 5, plate I—but what is the use of giving formulae for conditions that we know do not exist? The only thing the writer can offer is his opinion, which is that the major factor in the resistance offered by curvature is caused by the flanges of the outside wheels striking the outside rail at an angle, instead of rotating in lines parallel with the gauge side of the head of the rail. Any one who doubts the reasonable-

## Railway Maintenance of Way Employees Wages.

Supplement 8 to the Director General of United States Railroads' general order 27, fixing rates of pay and rules for overtime and working conditions for railway maintenance of way employees, which became effective in the U.S. Sept. 1, is being considered by a committee representing Canadian railways collectively and a committee representing the Brotherhood of Maintenance of Way Employees, in order that an amicable understanding may be reached as to uniform application of the supplement's provisions on Canadian railways.

The members of the committee representing the railways is composed of M. S. Blaiklock, Engineer, Maintenance of Way, G.T.R.; A. E. Crilly, Assistant to General Manager, Eastern Lines, Canadian Government Railways, and G. Hodge, Assistant to Vice President, Eastern Lines, C.P.R.

The members of the committee representing the Brotherhood of Maintenance of Way Employees is composed of: A. McAndrew, acting General Chairman, C. P.R.; W. Robson, Secretary, Joint Protective Board, C.G.R.; W. Jewkes, Secretary, C.P.R. Joint Protective Board; P. Wood, General Chairman, Canadian Northern Ry.; W. Thompson, Assistant General Chairman, Canadian Northern Ry.; G. H. Cummings, General Chairman, G.T.R.; M. H. McCurdy, General Chairman, Dominion Atlantic Ry.; W. Aspinall, General Chairman, G.T.P.R.; G. W. Murray, General Chairman, Canadian Government Rys.; L. E. Moore, General Chairman, T. & N.O.R.; J. Sheppard, General Chairman, Q.M. & S.R.; W. Dorey, General Chairman, I.B. of M.W.E.

The Farmers Grain & Shipping Rd. runs from Devils Lake, N.D., where connection is made with the Great Northern and Minneapolis, St. Paul and Sault Ste. Marie Rys., to Starkweather, Crocus and Hansboro, 66 miles, and is operated under the U.S. Railroad Administration. The following appointments have been made: J. M. Gruber, General Manager; M. L. Countryman, General Solicitor; A. H. Hegeland, Chief Engineer; F. A. Bushnell, Purchasing Agent; F. A. Barnes, Federal Auditor; L. E. Katzenbach, Federal Treasurer, all of whom hold similar positions with the Great Northern Ry., under the U.S. Railroad Administration, with offices at St. Paul, Minn.

The Toronto Terminals Ry.'s application for permission to lay steam pipes from the Toronto Electric Light Co.'s plant at the foot of Scott St., along the Esplanade to the new Union Station, for the supply of heat for the premises, under a three year contract, came before the city's board of control Oct. 25, when the board decided to oppose the application, stating that the company should give preference to the city system. It was pointed out that the city hydro electric system could not supply steam for heating, and could not guarantee continuous lighting service, and the T.E.L. Co. would not supply the steam without the light.

D. O. Wood, Superintendent, Inland Transportation, British Ministry of Shipping (Canada), Montreal, in remitting his subscription to Canadian Railway and Marine World, which he has taken for many years, writes: "I like your paper very much and think it is the best of its kind."

Table 1.

Results of test to determine amount of slip C.P.R. flat car 310,016, loaded with steel rails, gross weight 129,100 lb.; 8° 10' curve; outer rail elevated 2 in.; speed about 4 miles an hour.

Axles numbered 1, 2, 3, 4 from north to south.	Distance on rail measured in feet travelled by wheels making 70 complete revolutions.		70 times circumference of wheels in feet taped in field close to flange.		Difference between distance measured on rail and 70 times circum- ference.		70 times circumference of wheels in feet as officially taped after test 1 in. from base of flange.		Difference between distance measured on rail and 70 times official taping of circumference.	
	Outer.	Inner.	Outer.	Inner.	Outer.	Inner.	Outer.	Inner.	Outer.	Inner.
Car moving north.										
No. 1	605.88	601.68	602.29	602.29	+ 3.58	- 0.61	601.01	600.83	+ 4.87	- 0.85
No. 2	605.58	601.39	605.21	605.21	+ 0.37	- 3.82	604.11	604.11	+ 1.47	- 2.72
No. 3	605.92	601.73	602.29	602.29	+ 3.63	- 0.56	601.38	601.01	+ 4.54	- 0.72
No. 4	605.46	601.27	603.02	603.02	+ 2.44	- 1.75	602.11	602.29	+ 3.35	- 1.02
Car moving south.										
No. 1	604.67	600.48	602.29	602.29	+ 2.38	- 1.81	601.01	600.83	+ 3.66	- 0.35
No. 2	608.88	604.68	605.21	605.21	+ 3.67	- 0.53	604.11	604.11	+ 4.77	- 0.57
No. 3	604.63	600.43	602.29	602.29	+ 2.34	- 1.86	601.38	601.01	+ 3.25	- 0.58
No. 4	607.08	602.89	603.02	603.02	+ 4.06	- 0.13	602.11	602.29	+ 4.97	- 0.60

sharp flanges, have only one wheel on an axle with a sharp flange. This is caused either by poorly mating the wheels, or by them being placed in trucks that are not properly squared. Whatever the cause, this matter should be given more attention by mechanical and operating officials.

The writer is convinced that the greater portion of curve resistance is caused by pressure of the flange against a single rail, therefore the mating of wheels or setting up of trucks not properly true, that causes the flange on one wheel of an axle to wear sharp, is not only shortening the life of the wheel, but is costing the company considerably more money to acquire this undesirable result.

The following is a summary of the writer's conclusions:—

1. All outer wheels of railway equipment exert a pressure against the outer rail when rounding a curve.

2. The cause of this pressure is the tendency of a cylindrical body to rotate in a straight line at right angles to the axle of rotation.

3. That there is never any skidding of either wheels of the leading axle of a truck, unless it is a forward skidding of both wheels, caused by the resistance to rotation being great enough to cause a slight retardation to rotation, which results in an apparent forward skidding.

4. That there is no skidding of the outer wheel of a rear axle, and that in

ness of this opinion can ask an old timer what his experience was in the days before gasoline, in pumping a velocipede over the road, with the leading wheel not set true, and especially when it was set to hug the rail.

The writer wishes to acknowledge, with thanks, some valuable criticisms on this subject by I. P. Church, Professor Emeritus of Cornell University, Ithaca, N.Y., and would be very glad if Professor Church could be induced to write a criticism of this paper to be given to the public.

## Electric Welding in the War.

Three hundred men from the Ordnance Department, U.S. Army, will be trained as electric welders in schools established by the electric welding section of the Industrial Relations Group. They will be used in the reclamation of millions of dollars worth of war materials gathered from the French battlefields. Ten men of the Expeditionary Forces already are in training at the Cleveland school, and the remainder will be sent to the schools in relays. It is estimated that millions of dollars will be saved to the War Department through this work.

Ship welders are being trained without charge in the electric welding section's schools at Schenectady, New York City, Cleveland and Philadelphia.



## Honoring Canadian Pacific Railway's Locomotive Men.

In order to give recognition to the part played by the locomotive men in building up and maintaining the efficiency of the train service, the C.P.R. some time ago inaugurated the plan of naming certain locomotives after men who have distinguished themselves by length and efficiency of service, or by some outstanding act of service deserve special notice. Several locomotives on both eastern and western lines have already been decor-

68	Port McNicoll	Shiner Rose
2659	Mactier	Jack Douglass
2055	Brooks	William Wilson
2230	Galt	Jack Mains
2223	Windsor	Geo. Blencoe
2528	North Bay	Geo. Leach
2597	Parry Sound	Frank Reynolds
2606	Cartier	Tom Turner
2509	Nemegos	Bill McAdam
2665	Heron Bay	Harry West
2626	White River	Jas. Rose
2663	Nipigon	Alfred Bilbie
2093	Webbwood, Thessalon	Jack Beattie
2527		H. Jackson
3491		A. Langlois
	St. Stephen-Edmundston	Jim Foster
		Harry Saunders

		Alec McQuarrie
	St. John	Charlie Lamoureux
	M. and O.	Jack Smith
2531	Kenora	Blennerhassett
2565	Kenora	Billy Woods
2631	Portage	Ash Kennedy
2648	Kenora	Kendall
2649	Portage	Jim Stuart
2523	Brandon	Jack Pascoe
2634	Regina	James Wilson
2651	Regina	Jim Brownlee
566	Nelson	Art Denman
567	Revelstoke	Armstrong
586	Revelstoke	Crawford
578	Vancouver	Bob Mee
466	Revelstoke	Lew Patrick
2585	Cranbrook	Tom Gill
562	Cranbrook	Dan Murphy
2540	Vancouver	Duke MacKenzie
2638		F. Allott
2057		Adam Hopkirk
2650		Con. Leary
2068		Andy McFarlane
2586	Vancouver	Ted Hosker



ated with a specially designed crest bearing the name of the driver honored. The design consists of the C.P.R. crest, viz.: a shield bearing a maple leaf and surmounted by a beaver, the whole enclosed in a circle, with the words, "Canadian Pacific" above, and the locomotive man's name in the lower sector. The locomotive carries this design on each side just below the cab window, as shown in the

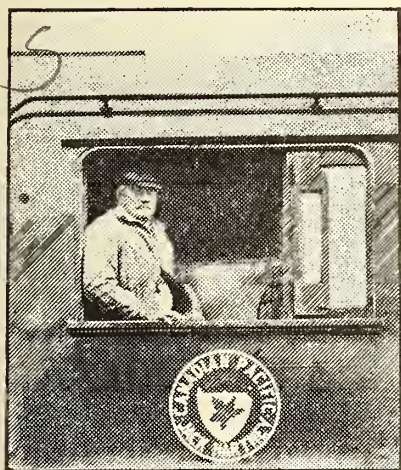


illustration herewith, which is taken from locomotive 2038, known as the President's locomotive.

Following is a list of locomotives already named, with their territory, and the name of the man placed thereon. In the few cases where the locomotive number is not given, selection of the locomotive to be named had not been made at the time of writing.

No.	Territory.	Name.
2038	President's locomotive	Jack Hartney
2621	Mattawamkeag-Moosehead	Ed. Cooney
2597	Newport	Geo. Magowan
2213	Sherbrooke	Bill Stapleton
2504	Three Rivers	Harry Leclerc
555	St. Agathe, Montreal	Bill Singleton
2518	Point Fortune	Art. Charlebois
2221	Winchester	Mike Carmody
2021	Chalk River	Michael Charrier
2625	Belleville	Steve O'Hara
2623	Oshawa	Billy Burnett
2554	Peterborough	Ed. Williams
2214	Havelock	Joe Dorricott

## Birthdays of Transportation Men in November.

Many happy returns of the day to—  
F. W. Alexander, Engineer, Alberta District, C.P.R., Calgary, born at Fredericton Jct., N.B., Nov. 22, 1878.

J. O. Apps, General Baggage Agent, C.P.R., Montreal, born at Tara, Ont., Nov. 9, 1877.

A. B. Atwater, Assistant to President, lines west of Detroit and St. Clair Rivers, G.T.R., Detroit, Mich., born at Sheffield, Ohio, Nov., 1845.

H. E. Beasley, General Superintendent, Esquimalt & Nanaimo Ry., Victoria, B.C., born at Hamilton, Ont., Nov. 10, 1862.

C. C. Bonter, General Baggage Agent, Canada Steamship Lines, Ltd., Montreal, born at Toronto, Nov. 13, 1884.

G. B. Burchell, Managing Director, Bras d'Or Coal Co., Ltd., North Sydney, N.S., born at Sydney, N.S., Nov. 1, 1877.

J. R. Cameron, Assistant General Manager, Canadian Northern Ry., Winnipeg, born at Truro, N.S., Nov. 5, 1865.

F. H. Clendenning, Division Freight Agent, B.C. Coast Service and Ocean Steamship Lines, C.P.R., Vancouver, B.C., born at Montreal, Nov. 9, 1881.

F. Conway, City Freight and Passenger Agent, C.P.R., Kingston, Ont., born at Ernestown, Ont., Nov. 19, 1850.

W. L. Crighton, Advertising Agent, Canadian Government Railways, Moncton, N.B., born at Derby, Eng., Nov. 9, 1871.

W. R. Davidson, General Superintendent, Eastern Lines G.T.R., Montreal, born at Everton, Mo., Nov. 8, 1871.

W. R. Devenish, Superintendent, District 3, Intercolonial Division, Canadian Government Railways, Moncton, N.B., born in County Tipperary, Ireland, Nov. 21, 1882.

A. C. Douglas, acting Assistant General Purchasing Agent, C.P.R., Montreal, born at Montreal, Nov. 10, 1881.

W. Downie, ex-General Superintendent, Atlantic Division, C.P.R., now of Whitby, Ont., born at Rock Currie, Ireland, Nov. 12, 1850.

Jos. Dubrule, jr., Manager, Canadian Pacific Car & Passenger Transfer Co., and President, Prescott & Ogdensburg Ferry Co., Ltd., Prescott, Ont., born at Spencerville, Ont., Nov. 14, 1872.

R. L. Fairbairn, General Passenger Agent, Canadian Northern Ry., Toronto, born at Stillwater, Minn., Nov. 24, 1880.

J. E. Gibault, Resident Engineer, District 1, Transcontinental Division, Canadian Government Railways, Quebec, Que., born at St. Jerome, Terrebonne County, Que., Nov. 16, 1887.

H. E. Haanel, Superintendent, Dominion Atlantic Ry., Kentville, N.S., born at Cobourg, Ont., Nov. 2, 1880.

Grant Hall, Vice President, C.P.R.,

Montreal, born there, Nov. 27, 1863.

W. E. Ladley, Superintendent of Motive Power, Reid Newfoundland Co., St. John's, Nfld., born at Leeds, Eng., Nov., 1875.

J. McGillivray, Receiver and Manager, Inverness Ry. & Coal Co., Inverness, N.S., born at Nairn, Scotland, Nov. 13, 1867.

J. McMillan, Manager of Telegraphs, C.P.R., Montreal, born at Liverpool, Eng., Nov. 2, 1866.

A. B. McNaughton, General Yardmaster, Ottawa Terminals, G.T.R., Ottawa, Ont., born at Arnprior, Ont., Nov. 10, 1877.

C. Murphy, General Manager, Western Lines, C.P.R., Winnipeg, born at Prescott, Ont., Nov. 20, 1865.

G. H. Nowell, Master Mechanic, Nelson Division, British Columbia District, C.P.R., Nelson, born at Montreal, Nov. 13, 1885.

W. J. Quinlan, District Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Montreal, Nov. 21, 1883.

J. J. Rose, ex-General Agent, Union Pacific System, Toronto, born there, Nov. 22, 18780.

G. H. Shaw, General Traffic Manager, Canadian Northern Ry., Toronto, born at Smiths Falls, Ont., Nov. 25, 1859.

P. D. Sutherland, General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Hong Kong, China, born at Toronto, Nov. 2, 1879.

L. C. Thomson, ex-General Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto, now in Imperial Munitions Board's service, born at Kingston, Ont., Nov. 25, 1882.

H. P. Timmerman, Industrial Commissioner, Eastern Lines, C.P.R., Montreal, born at Odessa, Ont., Nov. 6, 1856.

H. E. Whittenberger, General Manager, Grand Trunk Western Lines Rd., Chicago, Ill., born at Peru, Ind., Nov. 9, 1869.

C. G. Washbon, ex-Resident Engineer, Medicine Hat, Alta., now at Terrys Point, Va., born at Morris, N.Y., Nov. 27, 1887.

W. A. Whyte, District Freight Agent, Canadian Northern Ry., Regina, Sask., born at Hornsey, Eng., Nov. 24, 1890.

Aircraft Transport & Travel of Canada, Ltd., has been incorporated under the Dominion Companies Act, with authorized capital stock of \$250,000 in preference shares, and 2,500 common shares without nominal or par value, provided that the capital employed shall be \$262,500. The head office is at Montreal. The company has power to manufacture and deal in aeroplanes, balloons, airships and flying machines of all kinds, and to establish and maintain a regular service for the carriage of passengers and freight by air, water and land.



# Co-Ordination of the Various Branches of the Mechanical Department.

By W. U. Appleton, Superintendent of Motive Power, Canadian Government Railways, Moncton, N.B.

A system for regulating and combining the various branches of the mechanical department into one organization that will produce satisfactory service in the general repair shop and the operating department, obviously, must be broad and definite in its principles. Harmony between the various officers is essential, and the relationship between the branches must be very intimate. Success cannot be obtained if the general repair shop and the operating departments are not closely allied, as if the shop superintendent is working with the one object, "output," and the operating officers are not making every effort to obtain the greatest mileage from the locomotives, consistent with good service and economy, failure is sure to result.

In order to get results, it is necessary that we should have that co-operation, whereby the shop superintendent and all his subordinate officers are giving the same attention to proper repairs as to output, and it should be the object and pride of every master mechanic and his subordinate officers to obtain the greatest mileage between shoppings with the least number of failures. To repair a locomotive quickly, cheaply and properly, should be the ambition of the shop superintendent. To maintain it in service, with a minimum expense and the greatest number of miles between failures and shoppings, should be the aim and object of the master mechanic.

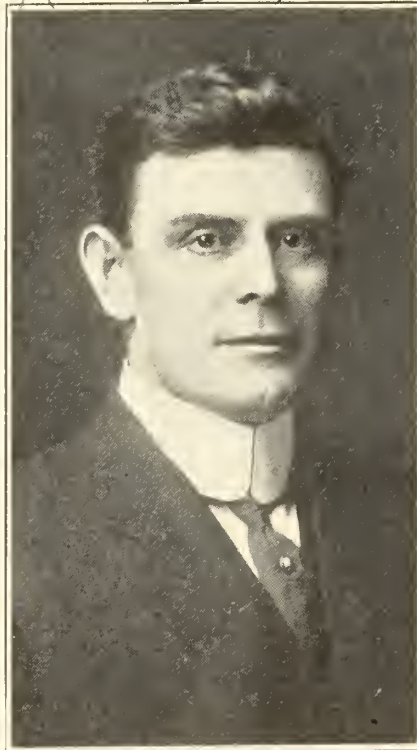
When locomotives are sent to the shop, there should be some system of defining the class of repairs required, and the writer believes that three classes, as described below, is the best method from the different points of view and sufficient to take care of all repairs. No. 1—General repairs, including a new firebox, a new cylinder or other such extra heavy repairs. No. 2—Ordinary general repairs. No. 3—Specific repairs that may be carried out at the roundhouse or shop. Abbreviations as follows should be used in conjunction with the numbers to describe specific repairs:

- No. 1, Repair—  
Convers. means conversion to superheater, etc.  
Boil. means new boiler.  
F. B. means firebox.  
Cyl. means cylinder (1 or 2).  
Fra. means frames.  
Int. means internal examination.  
Ext. means external.  
Der. means derailment.
- No. 2, Repair—  
Ext. means external.  
Der. means derailment.  
T. means new tires.
- No. 3, Repair—  
T. T. means tires turned.  
Fr. W. means frame welded.  
An. T. means annual test.  
In. means internal examination.  
TU. means fixing up tubes.  
DR. means driving boxes.  
Der. means derailment.

No. 1 or no. 2 repairs should not indicate any difference in the condition of the locomotives when turned out of the shop, as far as the operating department is concerned, as the distinction is only made for the information and assistance of the shop force in effecting repairs, and either of these repairs should represent a locomotive in first class condition in every respect, and capable of making the standard mileage of its class, according to the physical characteristics of the division on which it is employed and the service it is in.

The condition of all parts of the locomotive should be as nearly balanced as

possible, in order to obtain the greatest mileage with the least loss of service, and it is false economy to turn locomotives out of the shop, represented as having received the above classes of repair, with certain parts somewhat worn, due to having been renewed a short time previous to shopping. For instance, it may seem wasteful to renew tubes or some part of the machinery that is apparently still capable of making considerable mileage, but as these parts will become defective and make renewal necessary before those that were brought up to standard of shop practice, the result usually is: locomotive out of service when badly required—delay in effecting repairs—and higher cost of doing so on account of lack of facilities



W. U. Appleton,  
Superintendent of Motive Power, Canadian  
Government Railways.

at locomotive houses as compared with shops.

No. 3 Repair—This differs entirely from those referred to. It represents specific work and may be done at locomotive houses or shops, and is sometimes the result of an accident to or failure of some particular parts, but is generally due to ordinary wear and tear of certain parts of the locomotive that are subject to the most severe service. The parts subject to the greatest wear would not, if the locomotive is properly maintained while in service, represent sufficient work to justify a no. 1 or no. 2 repair, and in order to enable these parts to continue their work until the locomotive is generally worn to the extent necessary to justify a shop repair, it is usually economical to effect such repairs.

The latter class of repair generally consists of partial renewal of tubes and flues, rod bearing work, lining up wedges, examination of pistons and valves, refitting main driving boxes and sometimes tire turning, and removal of lateral play from

wheels. The parts requiring attention will, of course, be found to vary considerably with the different classes of locomotives, as well as with the different classes of service they give and the subdivisions on which they are employed. In some classes of locomotives, on some subdivisions, the tubes and flues will run from shopping to shopping with very little trouble, while others on the same division, or the same class on other division will require partial renewal when little more than half the required mileage has been accomplished.

The constant introduction of larger power is so changing conditions as to make the question of doing no. 3 repairs at locomotive houses one of considerable controversy, and the question naturally arises as to the best method of taking care of this work. In the writer's opinion the no. 3 repair should be continued and not confused with the heavier repairs under classes 1 and 2, this being important in order to determine the condition of the power at all times, based on mileage made according to class of repairs, and to avoid expenditures being made on the power that should not be necessary.

Facilities at locomotive houses are generally inadequate to take care of this work, except on the smaller and medium classes of power. At locomotive houses where there is a heavy fluctuation in traffic, it is an advantage to have a no. 3 repair gang, as it enables those in charge to hold their staff together and they can be employed to advantage on running repairs when necessary.

In general repair shops, where the work is done on schedule and arranged so that the locomotives will be turned out at regular intervals and no. 3 repairs cannot be taken care of without interfering with the regular work, it is a debatable question as to the advisability of breaking up the organization in order to take care of this work, although under existing conditions there is usually no alternative. The changing conditions will, no doubt, make it necessary to provide certain space in general repair shops for this class of work, where it may be done at lower cost than at locomotive houses, but where locomotives have to be hauled or worked a long distance, to get to the general repair shop for such repairs, it might be advisable to provide a small shop for this class of repair, if the number of locomotives tributary to the same is sufficient to justify it.

To enable the shop superintendent to plan his work and maintain his schedule, it is only fair that he should be given all the advice possible as to the class of repair, and a list of the important parts that require replacement at least 30 days in advance of the locomotive going to the shop. While it may not always be possible to do this on account of locomotives being damaged in accidents, there is no reason why it cannot be done to a very large extent in ordinary service. A form for reporting the work, as shown herewith, has been found to be very satisfactory.

When making out this report of shop repairs required, master mechanics should devote particular attention to the note advising them to describe any special or unusual defect.

We all know that when a group of locomotives is built from the same drawings,



centage of ordinary running failures, but there is a class of failure which cannot be guarded against by any such regulations. I mean failures due to faulty design and poor material. To deal with the failures of this kind is, obviously, the business of the engineering department, and its first and greatest effort should be to locate the prime cause of the failure. Very often, the actual part which fails is not the part which is at fault, and if we go ahead blindly and strengthen this

To determine the mileage that should be obtained from the different classes of locomotives, study and investigation would be required, and, in the writer's opinion, a minimum mileage requirement should be established for all sub-divisions for the various classes of locomotives according to service, after receiving a no. 1 or no. 2 repair—and if this is not done,



there is every possibility of locomotives being shopped for expensive repairs before actually required, while others, overdue for shopping on a basis of work done, remain in service, a source of trouble and expense to everybody. We make tests and establish standards as to tonnage, that locomotives of the same class shall haul and they are not arbitrary for all divisions irrespective of grades and curves—then why require a locomotive to make as much mileage with the same amount of repairs if in way freight service on a heavy division as in through service on a light division?

Locomotives in assigned service will, I am satisfied, make more mileage at less cost than those in the pool, and in a given time—say 18 months—the assigned locomotive will possibly make the greater mileage, due to its receiving more care and attention, which will keep it in continuous service; but in a rush of traffic for a short period the pooled locomotive will make the greater mileage. Where traffic is fairly steady, I believe that the assigned system is the best, but where

of the number of locomotives due for shopping or shortly to become due for shopping, and a host of other information.

It will be noticed that in the mileage set for different classes of locomotives to accomplish, there is no provision made for the class of service in which the locomotive is engaged, and it is therefore necessary sometimes to reduce the mileage required for locomotives working under severe conditions, such as way-freight service on a heavy division. It is a difficult and unsatisfactory matter to make rigid laws in cases of this kind, and the rules are necessarily slightly elastic.

Co-operation between the various branches of the mechanical department depends very much more on the men than on the system, and if the heads of the different departments all pull together, with the idea of attaining greater efficiency, and their subordinates back them up to the full extent of their ability, it will not be difficult to get results. The operating department should be very careful and very complete with its reports of repairs required when sending loco-

## War May Put Railway Track Work on a New Basis.

As a result of war conditions railway maintenance of way seems likely to attain a higher plane and to be accorded the attention which its importance to railway service demands. Such result will come, however, only through a trying and strenuous period of change. This radical change has been foreshadowed for some time and is indicated anew by the proceedings of the recent Roadmasters' and Maintenance of Way Association's convention.

These war conditions have compelled attention particularly to the vexed problem of labor supply and labor efficiency in railway track work. A direct outcome of this is the establishment of higher wages and the introduction of new methods of obtaining and controlling labor. This, together with the growing tendency to distribute maintenance work over the entire year, instead of concentrating it within a few busy months, may mean that railway maintenance will become a field for permanent gangs rather than for the shifting and ever-changing forces which have been characteristic of American railway service.

Supplementary to this is the wider consideration and use of labor saving machinery and appliances, which is the opening of a broad field of development. Such devices serve two different purposes. They may release men for military or other essential service, and they may enable a small force to do as much work and as good work as a larger force without such equipment. Furthermore, they may result in better work and greater permanence with consequent reduction in maintenance and increase in economy. Appliances that contribute to the stability of the track may be classed as labor saving devices from the fact that they tend to reduce the amount of maintenance work required.

Conservation of material used in track is another improvement forced by the shortage due to war conditions. Special care must be given to the proper use of existing supplies in order to make the most of what we have and avoid all unnecessary requisitioning of new material which is badly needed for other purposes. Much old material which once would have gone for scrap can be made available for use again if proper care is given to it. That which cannot be utilized directly must be collected to add to our stores of raw material.—Engineering News Record.

**Railway Company's Liability for Damaged Goods.**—The C.P.R. has been ordered by a Quebec court to pay \$229 damages to M. W. Fisher, for damages to 4 packages of merchandise. They were delivered at Bellamy station on June 28, 1917, and they were left on the platform during a rainstorm. The company claimed that they were left in an exposed position by the consignor, and therefore it was not liable for any damage. The court held that the responsibility for caring for goods delivered to it for consignment belonged to the company directly they were delivered into its agent's possession.

A. W. Smithers, Chairman of the Board, G.T.R., is expected in Montreal shortly to make his annual inspection trip over the line. It is reported that during his visit he will discuss with the Dominion Government the question of the acquirement of the G.T.R. and the G.T. Pacific Ry. for the Dominion.

### CANADIAN GOVERNMENT RAILWAYS. REPORT OF SHOP REPAIRS REQUIRED.

Station..... Date.....  
Mr. .... Ry.  
General Master Mechanic.  
Locomotive no.....requires the following repairs and should be shopped within.....days.  
Estimated class of repairs.....(See Main Card 99 M. R2.)  
Give general description of repairs required and describe any special or unusual defect, particularly defective counterbalance, cracked cylinders and those defects which are difficult to discover when engine is in shop.  
If No. 3 repair, describe fully what work is required to be completed in the shops.

### STANDARD MILEAGE BETWEEN REPAIRS. EITHER NO. 1 OR NO. 2.

Pacific	100,000	Ten-wheel	90,000
Consolidation, C1 Class	70,000	Switching	50,000 to 60,000, or 2 years' service.
Consolidation, C2, 3 & 4 Classes	80,000		

Miles made since last no. 1 or no. 2 repair..... Mileage less or more than standard.....%

Class of Service.....To be repaired at.....

Estimated cost of repairs: Labor.....Material.....Total.....

Last no. 1 or no. 2 repair.....Place.....Class of repair.....

Cost: Labor.....Material.....Total.....Per mile.....

Date of last no. 3 repair.....Date of last Flexible Staybolt Examination.....

Date of last internal examination.....Date of last annual test.....

Date of last external examination.....

Engineman.....Checked and signed, Foreman.....

General Boiler Inspector.....Master Mechanic.....

Shopping Approved:.....Cost and Mileage Clerk.....

.....General Master Mechanic.....Supt. Rolling Stock.

Date.....

Actual cost of above repairs:

.....Lahor.....Material.....Total.....Per Mile.....

heavy fluctuations in traffic have to be met, it might entail too great a capital outlay. I have known a locomotive in assigned service, when the locomotive man was taking an interest in his work, to make 55% more mileage than a locomotive of the same class, in the same service and division, in the pool.

The movement of power from one division to another should be done only under the advice of the motive power department, i.e., as far as selection of locomotives of the same class is concerned, otherwise it would possibly result in some locomotive houses having a high percentage of power over the shopping period and other with a similar proportion of power just out of the shop.

In order that we may have a comprehensive idea of the condition of our power at all times, the monthly statement reproduced herewith, showing the monthly mileage report of locomotives tributary to Moncton shops at June 1, 1918, has proved to be of considerable value. The form is self-explanatory and it is easy to get an idea of the condition of any particular locomotive, of the general con-

dition of a particular class of locomotive, motives to the shop, and should promptly report any defects in engines turned out of the shop. The shops department should work conscientiously, with the idea of making all locomotives good for their full mileage, and should pay special attention to any peculiar or unusual defects reported by the operating department. The engineering department should be ready at all times with advice and assistance to the shops and operating departments, and when investigating any defects should spare no pains to get right at the root of the trouble before attempting to eliminate it.

The foregoing paper was to have been read before the Canadian Railway Club in Montreal early in October, but owing to the influenza epidemic, its reading was postponed until the November meeting.

The Railway Y.M.C.A. at Field, B.C., was opened Oct. 2 in the building operated formerly by the C.P.R. as the Mount Stephen Hotel. It has 55 bedrooms, with dining and luncheon rooms in connection.



## Canadian Pacific Railway Commercial Telegraphers Wages, Etc.

Canadian Railway Board of Adjustment, no. 1, gave the following decision Sept. 13, on the points at issue between the C.P.R. and its commercial telegraphers, after hearing arguments of each party to the controversy:—

1. Definition of "Commercial Telegraphers" and rates for Morkrum operators. Article 1 as proposed by the employees is amended as follows:—

"1. Employees assigned to the commercial telegraph service, whether operated by the Morse system, telephone or any automatic device of any character, or who are required to devote any portion of their time to the transmission or receiving of telegraph matter by any device whatsoever (not including agents, wire chiefs, traffic supervisors or traffic chiefs having authority to hire or discipline employees) will be considered commercial telegraphers within the meaning of this schedule. This does not apply to employees handling such matter by telephone during the act of filing for transmission or delivery.

"2. Morse telegraphers, when not required to work as such, shall, if competent, have the right to operate any automatic device for the purpose of transmitting or receiving telegraph matter at the rate they were receiving in optional group as Morse operators in the office affected. Seniority shall govern."

Rate for Morkrum operators. Article 8, Clause 2, amended as follows:—"The rate for Morkrum employees shall be \$75 a month for the first year's service and \$85 a month thereafter."

Minimum performance. Article 6, clause 4, amended as follows:—"The average minimum performance on all Vancouver-Winnipeg, Montreal-Winnipeg, Montreal-Vancouver and Toronto-Winnipeg circuits, not including Morkrum operators, shall be 30 messages an hour, and on all other first class circuits 33 messages an hour, allowing 30 words to count as one message in case of press, and 20 shall be counted as one message in r.s. business and night lettergrams. Chief operators and traffic chiefs shall determine the carrying capacity of the circuit, and any loss through interruption shall not be charged against the telegrapher's average."

2. Working hours. Article 6, clause 1, of present schedule amended as follows: "At offices where two or more telegraphers are employed, the hours of duty shall be as follows: Eight hours shall constitute straight day duty, beginning and ending between 7 a.m. and 6 p.m. Seven hours shall constitute all night duty, beginning at or later than 8 p.m. Seven and a half hours shall constitute all other tricks. No trick shall be split more than once or extended over 12 hours. At all other offices the hours of duty shall be 10 consecutive hours, including one hour for lunch."

3. Overtime rate. Article 6, clause 3, of the present schedule reads:—"Overtime will be computed at the rate of 7 hours a day." The foregoing clause is amended as follows:—"Overtime accruing within 8 hours' service shall be paid for pro rata. Overtime after 8 or 9 hours' service, as the case may be, shall be paid for at time and one-half."

4. Inclusion of telegraph chiefs in schedule. The following words are inserted in article 1, clause 1, after the word "whatsoever":—"Not including agents, wire chiefs, traffic supervisors or

traffic chiefs having authority to hire or discipline employees."

5. Interpretation of McAdoo award. The board decided that neither of the bases submitted by the contending parties for rates in percentage offices was a correct application of the McAdoo award. The board also found it impossible to strictly apply the McAdoo award, on account of the changed conditions in the offices affected since 1915. On request of the parties to the dispute, the board established a basis for the readjustment of rates in these offices as follows:—

Vancouver Office—	Basic rate.	McAdoo award.
30% .....	\$100 a month.	\$131.75 a month.
30% .....	94 a month.	126.75 a month.
30% .....	88 a month.	121.75 a month.
Toronto Office—		
30% .....	90 a month.	123.25 a month.
30% .....	84 a month.	117.60 a month.
20% .....	78 a month.	109.98 a month.
20% .....	Optional.	
10% .....	Optional.	

Minimum rate of \$85 a month shall be paid to Morse telegraphers in all percentage offices in both east and west.

Duration of agreement.—Agreement is effective May 1, 1918, to continue for one year from that date in so far as it applies to wages. Agreement, in its pertinence to rules, shall become effective Oct. 1, 1918, and shall continue in effect both as to wages and rules until a rate not later than April 30, 1919, subject to termination thereafter upon service of 30 days' notice by either party.

Application of overtime rates and rules.—While the specific rates of pay named herein will be retroactive to May 1, 1918, the special overtime provisions established under this award will be effective as of Oct. 1, 1918. Overtime hours worked between May 1 and Sept. 30, 1918, will be paid for at the increased rates on the basis of rules heretofore in effect.

### What Government Control of Railways is Costing the United States.

Since April 1, 1918, the Director General of U.S. Railroads has advanced to railway companies \$294,845,170, exclusive of the current earnings of the roads applied directly by the individual roads to their current expenses and corporate needs. This amount went to 85 different roads or systems. The disbursements for September aggregated \$52,993,750.

Of the total disbursed to Oct. 1, \$209,347,910 was taken from the \$500,000,000 revolving fund, and \$85,497,260 came from the surplus earnings of various roads which were turned over to the Director General by the limited number of roads whose receipts for the period exceeded their requirements.

The total amount turned over to the Director General for the common fund from April 1 to Oct. 1 by roads reporting surplus earnings was \$113,000,000. To this should be added \$10,419,944 received from the new American Railway Express Co., making the total receipts from railway and express companies for the period \$123,419,944.

Of the \$113,000,000 turned over by the roads, \$64,507,660 went back to roads temporarily making the deposits with the Director General, these same roads subsequently calling upon the Railroad Administration for advances considerably in excess of the deposits which they had thus

temporarily turned over. Among the companies which have made deposits for the common fund during this period which have not asked for the refund of any portion of the funds deposited were the Northern Pacific Ry., which deposited \$2,500,000; the Pere Marquette Ry., \$1,500,000, and the Pullman Car Lines, \$1,000,000.

Among the advances made the railways up to Oct. 1, 1918, were the following:—

New York, New Haven & Hartford...	\$48,464,000
Pennsylvania .....	43,600,000
New York Central .....	42,920,000
Chicago, Milwaukee & St. Paul .....	16,725,000
Baltimore & Ohio .....	16,500,000
Illinois Central .....	13,775,000
Erie .....	10,900,000
Chicago, R. I. & Pac. ....	7,700,000
Southern Pacific .....	7,500,000
Southern .....	5,940,000
Chicago, Bur. & Quincy .....	5,800,000
St. Louis-San Francisco .....	5,608,000
Union Pacific .....	5,000,000
Denver & Rio Grande .....	4,400,000
Missouri Pacific .....	3,550,000
Lehigh Valley .....	3,500,000
Delaware & Hudson .....	3,500,000
Chicago & Northwestern .....	3,300,000
Wabash .....	3,225,000
Buffalo, Rochester & Pittsburgh .....	2,600,000
Philadelphia & Reading .....	1,400,000
Chicago & Alton .....	1,400,000
Minneapolis & St. Louis .....	1,350,000
Chicago, St. Paul, Minneapolis & Omaha .....	1,350,000
Grand Trunk Western .....	621,000
Boston & Maine .....	550,000
Chicago Great Western .....	507,660
Minneapolis, St. Paul & Sault Ste. Marie .....	350,000
Bangor & Aroostook .....	300,000
Central Vermont Ry. ....	285,000
Duluth, South Shore & Atlantic .....	150,000
Rutland .....	116,000
Maine Central .....	100,000

In addition to the above sums advanced the railway companies directly, the Director General has advanced \$30,660,255 on account of orders placed by him for locomotives and cars now under construction.

The payments shown in the above table are exclusive of very large amounts which were taken from the earnings of the roads between Jan. 1, 1918, and July 1, by the various railway companies to meet their interest and dividend requirements, and for other corporate purposes. The total funds therefore which the railway corporations have received since Jan. 1 from the Director General, and from the operations of the properties, and current balances, will reach approximately \$1,000,000,000.

The current operating expenditures and taxes of the railway lines which the Director General has also paid during the same period are estimated at between \$3,000,000,000 and \$3,500,000,000.

Railway Lands Patented.—Letters patent were issued during September, in respect to Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres
Alberta & Great Waterways Ry. ....	6.92
Calgary & Edmonton Ry. ....	797.83
Canadian Northern Ry. ....	480.00
Canadian Pacific Ry. grants .....	480.98
Canadian Pacific Ry. roadbed and station grounds .....	23.90
Edmonton, Dunvegan & British Columbia Ry. ....	82.58
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. ....	940.10
Total .....	2,757.31

Maintenance of Way Flagging Rules for Impassable Track.—Amendments to these rules were published in full in our last issue. Two typographical errors occurred in our reproduction, one being in paragraph 5, which should have referred to trains stopped by red signal, as per rule 3 (b), and not as per rule 3 (c); and the other in paragraph 9, referring to the use of a signal device, for displaying signals to be provided under rules 3 (b) and 8, which should have read rules 3 (b) and 6.



## Wages of Clerical, Station and Similar Forces on Railways.

At a meeting of the Canadian Railway War Board's Administrative Committee Sept. 30 it was decided to put into effect as from Sept. 1, 1918, the rates of pay and conditions as outlined in Supplement 7 to General Order 27 of the Director General of the United States Railroad Administration, on the basis of the interpretations as outlined below. The supplement is subject to some further interpretations on points which are not yet altogether clear, but in order to avoid delay in applying increased rates of pay, the supplement is to be made effective as outlined, and employes have been advised accordingly.

### CLERKS AND MISCELLANEOUS EMPLOYEES.

Effective Sept. 1, superseding General Order 27, and in lieu thereof, as to employes herein named, the following rates of pay and rules for overtime and working conditions for all clerical forces in all departments, and for certain employes in stations, storage and terminal warehouses, docks, storehouses, shops and yards, upon railroads under federal control, are hereby ordered:

**Article 1—Rates of Pay.**—(a) For all employes who devote a majority of their time to clerical work, of any description, including train announcers, gatemen, checkers, baggage and parcel room employes, train and engine crew callers, and the operators of all office or station equipment devices (excepting such as come within the scope of existing agreements or those thereafter negotiated with the railroad telegraphers), establish a basic minimum rate of \$62.50 a month; and to this basic minimum rate and all rates of \$62.50 and above, in effect as of Jan. 1, 1918, prior to the application of general order 27, add \$25, a month, establishing a minimum rate of \$87.50 a month.

**Interpretation:**—This clause includes:—All clerical forces, train announcers, station gatemen, freight shed checkers, car checkers, freight shed car service men, baggage and parcel room employes, train and engine crew supervisors. This clause does not include any employes covered in the telegraphers' schedule, clerical forces under 18 years of age, call boys (see article 6). Pending the receipt of more definite information, an increase of \$25 will be applied to the established rates of all positions as of Jan. 1, 1918. It is understood that in a few instances this may produce decreases from rates approved under the original application of general order 27.

(b) This order shall apply to chief clerks, foremen, sub-formen and other similar supervisory forces of employes herein provided for.

**Interpretation:**—This clause covers chief clerks, freight shed foremen, sub-formen, traffic supervisors, travelling auditors, travelling freight and passenger agents and positions of similar character.

(c) For office boys, messengers, chore boys, and other employes under 18 years of age, filling similar positions, and station attendants, establish a basic minimum rate of \$20 a month, and to this basic minimum rate and all rates of \$20 a month and above, in effect as of Jan. 1, 1918, prior to the application of general order 27, add \$25 a month, establishing a minimum rate of \$45 a month.

**Interpretation:**—This clause includes office boys, messengers, chore boys, clerical forces under 18 years of age, station

and waiting room attendants regardless of age. This clause does not include employes covered by telegraphers' schedule (see clause A, article 1), charwomen, "red cap" porters, call boys (see articles 6 and 9). This clause provides for an increase of \$25 a month over the rate in effect on Jan. 1, 1918, and establishes a minimum of \$45 a month.

(d) For all other employes, not otherwise classified, such as janitors, elevator and telephone switchboard operators, office, station and warehouse watchmen, establish a basic rate of \$45 a month, and to this basic minimum rate, and all rates of \$45 a month and above, in effect as of Jan. 1, 1918, prior to the application of general order 27, add \$25 a month, establishing a minimum rate of \$70 a month.

**Interpretation:**—This clause includes janitors, elevator operators, telephone switchboard operators, watchmen (office, station and warehouse). This clause provides for an increase of \$25 a month over the rates in effect on Jan. 1, 1918, and establishes a minimum of \$70 a month.

(e) The same increases provided for in sections a, b, c and d of this article shall apply to employes named therein paid on any other basis.

**Interpretation:**—This permits the continuation of the present practice of paying employes on monthly, daily and hourly or any other basis, provided that increases on the basis of \$25 a month, 96c a day or 12c an hour are added to the rates in effect at Jan. 1, 1918.

(f) The wages for new positions shall be in conformity with the wage for positions of similar kind or class where created.

**Article 2, Stationary engineers (steam), firemen and power house oilers.**—(a) For all stationary engineers (steam), establish a basic minimum rate of \$85 a month and to this basic minimum rate, and all rates of \$85 and above, in effect as of Jan. 1, 1918, prior to the application of general order 27, add \$25 a month, establishing a minimum rate of \$110 a month.

(b) This order shall apply to chief stationary engineers.

**Interpretation:**—For chief stationary engineers and all stationary engineers (steam), this clause provides for an increase of \$25 a month over the rates in effect on Jan. 1, 1918, and establishes a minimum of \$110 a month.

(c) For all stationary firemen and power house oilers, establish a basic minimum rate of \$65 a month, and to this basic minimum rate, and all rates of \$65 and above, in effect as of Jan. 1, 1918, prior to the application of general order 27, add \$25 a month, establishing a minimum rate of \$90 a month.

**Interpretation:**—For stationary firemen and power house oilers this clause provides for an increase of \$25 a month over the rates in effect on Jan. 1, 1918, and establishes a minimum of \$90 a month.

**Article 3—Locomotive Boiler Washers.** For all locomotive boiler washers who were on Jan. 1, 1918, prior to the application of general order 27, receiving less than 26c an hour, establish a basic minimum rate of 26c an hour, and to this basic minimum rate, and all hourly rates of 26c and above, add 12c an hour, establishing a minimum rate of 38c an hour, provided that the maximum shall not exceed 50c an hour.

**Interpretation:**—Covered by Canadian

Railway War Board Wage Agreement no. 1, article 7, clause B.

**Article 4—Power Transfer and Turntable Operators.**—For all operators of power driven transfer and turntables who were on Jan. 1, 1918, prior to the application of general order 27, receiving less than 21c an hour, establish a basic minimum rate of 21c an hour, and to this basic minimum rate, and all hourly rates of 21c and above, add 12c an hour, establishing a minimum rate of 33c an hour, provided that the maximum shall not exceed 45c an hour.

**Interpretation:**—Operators of power driven transfer tables are covered by Canadian Railway War Board Wage Agreement No. 1, article 7, clause E. For employes regularly assigned to operate power driven turntables, this clause provides for an increase of 12c an hour over the rates in effect on Jan. 1, 1918, and establishes a minimum of 33c an hour and a maximum of 45c an hour.

**Article 5—Shop, roundhouse, station, storehouse and warehouse employes (except employes provided for in awards).**—

(a) For all laborers employed in and around shops, roundhouses, stations, storehouses and warehouses (except employes provided for in harbor awards), such as engine watchmen, and wipers, fire builders, ashpit men, boiler washer helpers, flue borers, truckers, stowers, shippers, coal passers, coal chute men, etc., who were on Jan. 1, 1918, prior to the application of general order 27, receiving less than 19c an hour, establish a basic minimum rate of 19c an hour, and to this basic minimum rate, and all hourly rates of 19c and above, add 12c an hour, establishing a minimum rate of 31c an hour, provided that the maximum shall not exceed 43c an hour.

**Interpretation:**—This clause includes engine watchmen, engine wipers, fire builders, ashpit men, boiler washer's helpers, flue borers, coal passers, coal chute men, hostler's helpers, truckers, stowers, shippers, coopers, derrick men (freight yard), car sealers, freight shed car service men's helpers, employed in and around shops, roundhouses, stations, storehouses and warehouses, and provides for an increase of 12c an hour over the rates in effect on Jan. 1, 1918, and establishes a minimum of 31c an hour and a maximum of 43c an hour.

(b) For all common labor in the departments herein referred to and not otherwise provided for, who were on Jan. 1, 1918, prior to the application of general order 27, receiving less than 16c an hour, establish a basic minimum rate of 16c an hour, and to this basic minimum rate and all hourly rates of 16c and above, add 12c an hour, establishing a minimum rate of 28c an hour, provided that the maximum shall not exceed 40c an hour.

**Interpretation:**—For all unclassified labor employed in and around shops, roundhouses, stations, storehouses and warehouses, this clause provides for an increase of 12c an hour over the rates in effect on Jan. 1, 1918, and establishes a minimum of 28c an hour and a maximum of 40c an hour.

**Article 6—Monthly, Weekly or Daily Rates.**—For all monthly, weekly or daily rated employes, in the departments herein referred to, and not otherwise provided for, increase the rates in effect as of Jan. 1, 1918, prior to the application of general order 27, on the basis of \$25 a



month.

**Interpretation:**—This article includes chief draftsmen, draftsmen, call boys, "red cap" porters and charwomen (except as covered by article 9). For those and all other monthly, weekly or daily rated employes in the departments covered by Supplement 7, and not otherwise provided for, this article provides for an increase on the basis of \$25 a month over the rates in effect on Jan. 1, 1918. This article does not include restaurant help, sleeping, parlor and dining car employes, when employed on cars in train service. To these employes, general order 27 will apply except as provided by supplement 2.

**Article 7—Maximum Monthly Wage.**—No part of the increases provided for in this order shall apply to establish a salary in excess of \$250 a month.

**Article 8—Preservation of Rates.**—(a) The minimum rates, and all rates in excess thereof, as herein established, and higher rates which have been authorized since Jan. 1, 1918, except by general order 27, shall be preserved.

**Interpretation:**—As already stated, it is understood that in a few cases, this may produce decreases from rates approved under the original application of general order 27. This clause requires the maintenance permanently of rates established for positions as of supplement 7. If, however, the duties required in any position are changed, the compensation for the position may be changed in conformity therewith. (See article 1, clause f).

(b) Employes temporarily or permanently assigned to higher rated positions, shall receive the higher rates while occupying such positions; employes temporarily assigned to lower rated positions shall not have their rates reduced.

**Article 9—Exception.**—The provisions of this order will not apply in cases where amounts less than \$30 a month are paid to individuals for special service which only takes a portion of their time from outside employment or business.

**Article 10—Hours of Service.**—Eight consecutive hours, exclusive of the meal period, shall constitute a day's work.

**Interpretation:**—This article definitely establishes the 8-hour day, and when and where practicable the working hours of the day for all classes of employes covered by supplement 7 should be limited to 8 consecutive hours, exclusive of the meal period. Regular working hours for the various classes of employes at the different points should be established and reasonable notice of any change (not less than 40 hours) should be given.

In view of the fact that supplement 7 does not clearly set forth how monthly or daily rates are to be arrived at for the basic 8-hour day, pending the issue of any further interpretation, monthly or daily rates in effect as of Jan. 1, 1918, covering more than 8 hours service per day, should be converted to an 8-hour basis and increases of \$25 a month and 96c a day respectively added thereto, resulting rates to cover 8 hours service a day. The examples shown below are worked out on this basis. This basis is justified by the language of article 5, which for hourly rated men provides increased compensation per hour on rates employes were receiving per hour as of Jan. 1, 1918.

The principle of converting monthly and daily rates to an 8-hour basis is confirmed by the method set forth in article 3, general order 27, for applying basic 8-hour day rules.

## EXAMPLES.

### Method of Applying Basic 8-hour Day Rules.—

1. Position which on Jan. 1, 1918, paid \$2 a 9-hour day. Old rate for 9 hours service \$2; old rate for 8 hours 8/9 of \$2—\$1.78; new rate for 8-hour basic day \$1.78, plus 96c (8 hours at 12c)—\$2.74. If employe continues to work 9 hours a day wages would be \$2.74 plus 1 hour overtime at 34 $\frac{1}{4}$ c (1/8 of \$2.74)—\$3.

2. Position which on Jan. 1, 1918, paid \$2.40 a 10-hour day. Old rate for 10 hours service \$2.40; old rate for 8 hours (8/10 of \$2.40)—\$1.92; new rate for 8-hour basic day \$1.92, plus 96c (8 hours at 12c)—\$2.88. If employe continues to work 10 hours a day, wages would be \$2.88, plus 2 hours overtime at 36c (1/8 of \$2.88) 72c—total \$3.60.

3. Position which on Jan. 1, 1918, paid \$75 a month working 10 hours a day for 26 working days. Old rate for month's service \$75; old rate for 8 hours (8/10 of \$75)—\$60; new rate per month for 8-hour basic day (\$60, plus \$25)—\$85. If employe continues to work 10 hours a day wages would be \$85 plus 52 hours overtime at 40.6c (\$85 divided by 200 hours) \$21.25—total \$106.25.

4. Position which on Jan. 1, 1918, paid \$100 a month, working 11 hours a day for 31 working days. Old rate for month's service \$100; old rate for 8 hours (8/11 of \$100)—\$72.73; new rate per month for 8-hour basic day (\$72.73 plus \$25)—\$97.73. If employe continues to work 11 hours a day wage would be \$97.73, plus 62 hours overtime at 39.4c. (\$97.73 divided by 248 hours) and 31 hours overtime at 59.1c (one and one-half times 39.4c) \$42.75—total \$140.48.

If we consider a 30-day month in place of a 31-day month, as above, and the employe continues to work 11 hours a day, wages would be \$97.73, plus 60 hours overtime at 40.7c (\$97.73 divided by 240 hours and 30 hours at 61.1c (one and one-half times 40.7c) \$42.75—total \$140.48.

**Article 11—Overtime and Calls.**—(a) Where there is not any existing agreement or practice more favorable to the employes, overtime shall be computed for the ninth and tenth hour of continuous service, pro rata on the actual minute basis and thereafter at the rate of time and one-half time. Even hours will be paid for at the end of each pay period, fractions thereof will be carried forward.

**Interpretations:**—This clause requires the payment of overtime after 8 hours work on any day for all classes of employes covered by supplement 7, but only at a pro rata rate (except where there is an existing agreement or practice more favorable to the employe for the ninth and tenth hours of continuous service, exclusive of the meal period, and at the rate of time and one-half after 10 hours work. (See article 14, clause a). Pay for overtime should not be allowed unless specifically ordered to be worked.

With reference to the last sentence in clause (a), it is permissible and preferable to pay for the actual hours and fractions thereof complete at the end of each pay period, instead of carrying forward the fractions of hours.

(b) When notified or called to work outside of established hours, employes will be paid a minimum allowance of three hours.

**Interpretation:**—This clause is applicable only when employes have been called after they have gone off duty for the day. When service is continuous, except for the meal period, this clause does not apply.

(c) Employes will not be required to suspend work during regular hours to absorb overtime.

### Article 12—Promotion and Seniority.—

(a) Promotions shall be based on ability, merit, and seniority, ability and merit being sufficient, seniority shall prevail, except, however, that this provision shall not apply to the personal office forces of such officers as superintendent, trainmaster, division engineer, master mechanic, general freight or passenger agent, or their superiors in rank and executive officers. The management shall be the judge, subject to an appeal, as provided in article 13.

(b) Seniority will be restricted to each classified department of the general and other offices and of each superintendent's or master mechanic's division.

(c) Seniority rights of employes referred to herein, to: (1) new positions, (2) vacancies, will be governed by paragraphs (a) and (b) of this article.

(d) Employes declining promotion shall not lose their seniority.

(e) Employes accepting promotion will be allowed 30 days in which to qualify, and failing, will be returned to former position without loss of seniority.

(f) New positions or vacancies will be promptly bulletined for a period of five days in the department where they occur. Employes desiring such positions will file their applications with the designated official within that time, and an appointment will be made within 10 days thereafter. Such position or vacancy may be filled temporarily pending an assignment. The name of the appointee will immediately thereafter be posted where the position or vacancy was bulletined.

(g) In reducing forces seniority shall govern. When forces are increased, employes will be returned to the service and positions formerly occupied, in the order of their seniority. Employes desiring to avail themselves of this rule must file their names and addresses with the proper official. Employes failing to report for duty or give satisfactory reasons for not doing so within seven days from notification will be considered out of the service.

(h) A seniority roster of all employes in each classified department, who have been in the service six months or more, showing name, date of entering the service, and the date of each promotion or change, will be posted in a place accessible to those affected.

(i) The roster will be revised and posted in January of each year, and shall be open to correction for a period of 60 days from date of posting on presentation of proof of error by an employe or his representative. The duly accredited representative of the employe shall be furnished with a copy of roster upon written request.

### Article 13—Discipline and Grievances.

(a) An employe disciplined or who considers himself unjustly treated shall have a fair and impartial hearing, provided written request is presented to his immediate superior within 5 days of the date of the advice of discipline, and the hearing shall be granted within 5 days thereafter.

(b) A decision will be rendered within 7 days after the completion of hearing. If an appeal is taken it must be filed with the next higher official and a copy furnished the official whose decision is appealed within 5 days after date of decision. The hearing and decision on the appeal shall be governed by the time limits of the preceding section.



(c) At the hearing or on the appeal the employe may be assisted by a committee of employes or by one or more duly accredited representatives.

(d) The right of appeal by an employe or representative in regular order of succession and in the manner prescribed up to and inclusive of the highest official designated by the railroad, to whom appeals may be made, is hereby established.

(e) An employe on request will be given a letter stating the cause of discipline. A transcript of evidence taken at the investigation or on the appeal will be furnished on request to the employe or representative.

(f) If the final decision decrees that charges against the employe were not sustained, the record shall be cleared of the charge; if suspended or dismissed, the employe shall be returned to former position and paid for all time lost.

(g) Committees of employes shall be granted leave of absence and free transportation for the adjustment of difference between the road and the employes.

**Articles 12 and 13. Interpretation:**—It is intended that for employes not already covered by schedule agreements the spirit of the regulations should be applied. See note under article 15.

**Article 14—Rules for Application of this Order.**—(a) It is not the intention of this order to change the number of days a month for monthly paid employes. The increases a month provided herein shall apply to the same number of days a month which were worked as of Jan. 1, 1918.

(b) The pay of female employes, for the same class of work, shall be the same as that of men, and their working conditions must be healthful and fitted to their needs. The laws enacted for the government of their employment must be observed.

**Article 15—Interpretation of this Order.**—The rates of pay and rules here established shall be interpreted into existing agreements, and into agreements which may be reached in the future on the several railroads, and should differences arise between the management and the employes of any of the railroads to such interpretation, intent or application of this order, prior to the creation of additional railway boards of adjustment, such questions of difference shall be referred to the director of the division of labor for decision, when properly presented, subject always to review by the Director General. Agreements or practices, except as changed by this order, remain in effect.

**Interpretation:**—The Canadian Railway War Board has appointed a special committee, consisting of Geo. Hodge, Assistant to General Manager, Eastern Lines, C.P.R.; J. Coleman, Superintendent Car Department, G.T.R., and A. E. Crilly, Assistant to General Manager, Canadian Government Railways, to consider further interpretations of supplement 7 to general order 27 and make recommendations for uniform practice in connection therewith. If any questions arise on any railway as to the intent of this supplement or interpretations, no action should be taken until such questions have been referred to the Canadian Railway War Board. This committee will deal with these questions as submitted and copies of the questions and rulings thereon will be forwarded to all railways connected with the Canadian Railway War Board.

In the event of employes being unable

to adjust any differences with the heads of their departments in accordance with the method established by article 13, such differences may be referred to the Canadian Railway War Board for consideration and decision by this special committee.

### C.P.R. Scholarships at McGill University.

Five free scholarships, covering four years' tuition in chemistry, civil, mechanical or electrical engineering at McGill University, Montreal, are offered, subject to competitive examination, to apprentices and other employes enrolled on the C.P.R.'s permanent staff and under 21 years of age, and to minor sons of employes. The competitive examination, which will be the regular entrance matriculation examination provided for in the University's annual calendar, will be held at the University, and at other centers throughout Canada, in June, 1919. The candidates making the highest average, and complying with the requirements of admission, will be awarded the scholarships and have the option of tak-

ing any of the above courses. Scholarship will be renewed from year to year, to cover a period not exceeding four years, if, at the close of each session, the holder thereof is entitled, under the rules, to full standing in the next higher year. In case a scholarship holder finds it necessary to interrupt his course for a year or more, notice must be given at the close of the session to the company and to the Dean of the Faculty of Applied Science of the University, in order that the scholarship may be open to other applicants. In order to establish prior claim to the next available scholarship, notice of the student's intended return must be given to the company and to the Dean of the Faculty of Applied Science, not later than Jan. 1, preceding the opening of the session in which such scholarship will be available. Applications for certificates entitling eligible persons to enter the competition should be addressed to C. H. Buell, Staff Registrar and Secretary, Pension Department, C.P.R., Montreal. Copies of the annual calendar, containing the conditions of admission and announcement of courses may be obtained upon application to the Registrar, McGill University, Montreal.

## Canadian Pacific Railway's Honor Roll 38.

Bailey, Herbert M.	Car inspector	Hardisty	Presumed dead
Bain, Thomas	Porter	Fort William	Presumed dead
Banks, James	Car repairer	Toronto	Wounded
Bedford, Norman L.	Clerk	Winnipeg	Wounded
Breen, Joseph	Locomotive fireman	Kenora	Died of wounds
Bissett, Roderick	Wiper	Fort William	Died of wounds
Bugler, Herbert S.	Clerk	Ogden shops	Wounded
Buttimore, Thomas H.	Accountant	Banff	Wounded
Cable, Donald J.	Travelling pass. agent	Montreal	Wounded
Callard, Charles N.	Checker	Port McNicoll	Wounded
Cameron, Daniel G.	Clerk	Montreal	Wounded
Campbell, William	Section man	McTaggart	Wounded
Cassidy, Thos. J.	Porter	Campbell's Bay	Wounded
Caucutt, Edward	Yardman	Kenora	Wounded
Cleaver, Chas. H.	Section foreman	Furrer	Wounded
Comber, Ronald	Wiper	Moose Jaw	Wounded
Curtis, Bertie	Wiper	Fort William	Killed in action
Douglas, Archie	Coach carpenter	Winnipeg shops	Wounded
Drake, Leslie A.	Clerk	Montreal	Died of wounds
Duval, Leo M.	Draftsman	Kootenay Central Ry.	Wounded
Eaglestone, Edgar	Locomotive man	Winnipeg	Died of wounds
Elliott, George F.	Checker	Vancouver	Wounded
Falconer, Wm. L.	Assistant agent	Morden	Wounded
Ferrin, Wm. R.	Accountant	Calgary	Killed in action
Flynn, Edward	Wiper	Weyburn	Killed in action
Gibbon, Albert	Car checker	Fort William	Killed in action
Gough, Harry	Porter	Edmonton	Wounded
Gow, James	Bridgeman	British Columbia Dist.	Wounded
Griffiths, Jack B. M.	Shed foreman	Red Deer	Wounded
Hardy, Arthur T.	Waiter	B.C. Coast Strs.	Wounded
Hartley, Edmund H.	Section man	Manor	Wounded
Hutchison, W.	Clerk	Portage la Prairie	Died of wounds
Latimer, Hugh	Car repairer	West Toronto	Killed in action
Levinsky, Percy	Clerk	Toronto	Wounded
McCreary, Harry E.	Sleeping car conductor	Montreal	Died of wounds
McDonald, Leonard H.	Clerk	Ottawa	Believed drowned
McFadden, Ernest V.	Clerk	Brandon	Wounded
McKay, Roderick	Locomotive man	Kamloops	Wounded
McLean, Gordon D.	Barrister	Calgary	Killed in action
McLeod, Benjamin	Constable	Winnipeg	Killed in action
McTague, Robert M.	Asst. extra gang foreman		
Malpass, Wilfred A.	Porter	Algoma District	Died of wounds
Metcalfe, Alex.	Porter	Vancouver	Died of wounds
Moody, Ernest	Helper	Medicine Hat	Gassed
Moore, Stanley G.	Operator	Soo	Wounded
Morrison, Alfred L.	Trainman	Esquimalt	Wounded
Nelson, Thos. Wm.	Trainman	Kenora	Wounded
Nickleby, Theodore P.	Wiper	Edmonton	Presumed dead
Preston, Samuel	Laborer	Roseberry	Died of wounds
Purchase, W. H.	Clerk	Parkland	Killed in action
Reid, Ephraim J.	Conductor	Vancouver	Wounded
Ritchie, John	Locomotive fireman	Sutherland	Died of wounds
Sansom, Joseph	Blacksmith's helper	Chapleau	Wounded
Scriven, Lorne	Shed foreman	Winnipeg	Wounded
Sellick, Wm.	Pipe fitter	Orillia	Wounded
Shipman, Lewis A.	Apprentice	Hochelaga	Died of wounds
Shrubshall, Frank	Hostler	Winnipeg shops	Believed drowned
Sinnock, Samuel	Fitter's helper	Lambton	Killed in action
Smith, Harold	Clerk	Winnipeg	Killed in action
Stubbs, Robert	Bridgeman	London, Eng.	Killed in action
Turiff, John G.	Assistant agent	Fort William	Wounded
Walker, Hugh C.	Clerk	Rapid City	Killed in action
Watthew, John	Fitter's helper	Winnipeg	Wounded
Wheeler, Hy. A.	Clerk	West Toronto	Killed in action
Willson, George H.	Wiper	London, Eng.	Killed in action
Wilson, William	Wiper	Moose Jaw	Wounded
Wren, Wm.	Wiper	Medicine Hat	Wounded
	Sty. fireman	Ignace	Wounded

Shown on honor lists to date:—killed, 731; wounded, 1,575; total, 2,306.



# The Transportation Features of the Coal Situation in the Prairie Provinces.

By C. E. Stone, Secretary, Western Administrative Sub-Committee, Canadian Railway War Board.

In dealing with this question, I will confine myself mainly to the situation as it exists in the western prairie provinces, as it is in these provinces that it assumes its most acute form. In the eastern and mountain sections of the Dominion, except in the larger cities, wood can be, and is, used to a large extent to relieve a shortage in the coal supply, but on the prairies there is nothing to take the place of coal. Straw is to some extent used for firing threshing engines, but it is not adaptable in its present form for winter use. Therefore in winter, if the supply of coal is short, the prairie town and country dweller is faced with a desperate situation. It is chiefly to the credit of the railways that there has not in past years been much suffering due to a lack of this necessary commodity, as it can be stated generally, that with the exception of the United States coal which has been annually brought in and stored by the railways at the lake head, and the coal which the railways have stocked at various points for their own use, there has been in Western Canada, practically no stocking of coal during months favorable for its transportation, to provide for severe weather conditions. This has placed upon the railways the burden of handling a heavy coal tonnage during the worst weather, a tremendously difficult and costly operation.

In so far as Canada, east of the Great Lakes, is concerned, there are only two features which alter the situation to any extent over past years. The first is the enormous traffic with which the railways are now burdened, which of course adds to the difficulties experienced in handling coal, and second, the limitation in the allotment of U.S. coal to that territory, which will no doubt be reflected in an increased movement of wood in some sections. The situation has not altered in British Columbia, where the comparatively limited demand is met locally. It is in Alberta, Saskatchewan and Manitoba, and particularly in the two latter, that the situation takes on its difficult aspects. To a very large extent, Manitoba and eastern parts of Saskatchewan have in past years depended for their fuel on the supplies of anthracite brought in by lake and rail from the U.S. The transportation of the winter's coal supply from western mines places upon the railways a tremendously increased burden.

It is almost an impossibility to deal with this question statistically with any degree of accuracy. There are no statistical bases of comparison between the situation in Western Canada in past years and the situation as it exists today. In considering this matter from a transportation standpoint, I will take Winnipeg, the point which is most greatly affected by the change, as an illustration. During 1917, Winnipeg consumed a total of approximately 457,000 tons of commercial coal, of which about 215,000 tons were anthracite, 222,000 tons bituminous, and 20,000 tons lignite. The bituminous supply has not been greatly disturbed, but the Fuel Controller has stated that not more than 50% of last year's anthracite supply will be available this year, which means that, allowing for the difference in efficiency between anthracite and lignite, Winnipeg will have to receive from the western mines about 200,000 tons. As the railways cannot be expected

to maintain the movement at full capacity, after the commencement of the heavy grain movement, this means that from May 15 to Oct. 1, a period of 138 days, coal should have been coming into Winnipeg from the west at the rate of 50 cars a day. As a matter of fact, it has not been coming in anything like that quantity. During May, the average number of cars to arrive in Winnipeg daily was 13; in June, 29 cars, and in July, 27 cars. During the week ended July 14, there were shipped to Winnipeg from all mines in Western Canada, 217 cars of coal, an average of 31 a day. During the week ended July 21, there were shipped a total of 252 cars, an average of 36 a day. During the 10-day period ended July 31, there were shipped a total of 333 cars, an average of 33 a day.

While these figures are typical of a section of Manitoba, they are not so of Saskatchewan, where stocking of western coal has been fairly heavy, and into which province, shipments for the three weeks prior to July 31, averaged over 125 cars a day.

From May 15 up to the end of July, all the mines in Western Canada shipped to all points, of all classes of coal, a total of 1,238,000 tons, as compared with a total of 592,000 tons shipped in the same period last year, but the figures mean very little when it is remembered that last year, from early in May until about July 1, almost all the coal mines in Alberta had strikes on their hands. In addition, a very large proportion of the increase is made up of steam coal stocked for railway purposes.

Winnipeg's anthracite supply, brought in during the lake navigation period to the lake head, was, in railway movement, distributed over 8 months. By far the greater portion of it, however, was handled during the months in which the grain was moved to the lakes, giving the railways a westbound coal movement to Winnipeg, and to some extent beyond, corresponding with the eastern grain movement, and thus limiting in some measure, that bane of the transportation officer—empty car haulage. Now look at the situation created by the substitution of western coal for anthracite. This must be brought from mines located an average of 900 miles from Winnipeg. It must largely come down in a period of approximately four months. It must be handled in the same direction with the preponderance of traffic during the greater portion of the year, meaning an empty car hauled for nearly every car of coal brought in. Where to bring in a car of coal from Port Arthur or Fort William only meant a loaded car haul of 420 miles, to bring one in from the western mines means an empty car haul from Winnipeg west of 900 miles, and as during the grain shipping period, which extends over a considerable portion of the year, every car sent west from Winnipeg for coal loading necessitates an equivalent empty movement from the lake head to Winnipeg, the total empty haulage for each car of western coal brought to Winnipeg is 1,320 miles. Add to this the return loaded haul of 900 miles, and you have a mileage of 2,200 a car, or over five times the distance is covered to bring a car of coal to Winnipeg from the western mines than was covered to bring a car from the lake

head. The car efficiency is actually reduced by more than five times, because the western railways, between Winnipeg and the western mine territory, all operate through a section of prairie country, where the scarcity and poor quality of the water reduces locomotive efficiency, and makes railway operation at certain seasons very difficult and costly.

The greatest movement must be crowded into 4 or 5 months, because during the latter part of September and the months of October and November, when the bulk of the crop is moving out, the railways cannot undertake to move coal from the west in any quantity, and at the same time discharge their essential duty as grain carriers. The very fact that the bulk of the western coal must be moved during the summer, however, would, if taken advantage of, to a slight extent offset the disadvantages referred to, as that is the period when the railways in the west have usually had a surplus of men, power and cars, and weather conditions are most favorable to an uninterrupted movement.

Under the conditions created by the necessity for bringing the coal supply from the west, a feature upon which too much stress cannot be laid, is that of capacity loading of cars. Practically all of the railways in Canada, as a result of exhaustive tests, have increased the loading capacity of their cars beyond that formerly allowed, as high in some cases, as 20%, basing it upon the carrying strength of the axles. Loading cars with all they will carry, in the direction of the preponderance of traffic, increases transportation efficiency enormously, and the Canadian Railway War Board has been urging upon all shippers the importance of giving attention to this feature. It is one way in which the railways can be assisted by the shipping public to give better service to that public.

The railways were early in the field to assist in improving this season's fuel situation. Through the Canadian Railway War Board they have entered into all movements looking to a solution of the problem. On their behalf, Grant Hall, Chairman of the western administrative sub-committee of the board, at a meeting which was held in Calgary on Feb. 11, gave assurance that the railways would be prepared to handle all the coal offered up to the commencement of the grain movement, and W. P. Hinton, representing the administrative sub-committee, repeated this assurance at a meeting held in Ottawa on April 18, and they have not failed to do this. Steps were taken by the railways to begin at once to stock all the railway steam coal which the mines could turn out, in order to free railway facilities for handling domestic coal later on. Empty cars, which, accumulating in the east as a result of the winter all-rail grain movement, are usually moved west gradually throughout the summer, as traffic conditions permit, were in early spring handled west in train loads, and an uninterrupted full supply of cars has been maintained at all mines throughout the spring and summer, with a surplus always available to meet any needs which might arise.

It is not the intention to criticize the efforts of anyone else, but the movement of coal from the west has not, up to the present, been what the railways had



hoped for, and were led to expect. There are several reasons for this, chief among which, I imagine, are, first the difficulties experienced by the mines in securing labor, and in getting full time work from that available, and second the fact that certain of the western coals will not stand outdoor storing without deterioration, making dealers hesitate to stock it in any quantity. Consumers, notwithstanding repeated warnings, have not laid in as much as was hoped, due, in some measure, no doubt, to the difficulty in financing at once a whole or considerable portion of a season's supply.

More than any other large employers of labor, the railways have found it difficult to secure capable employes to take the place of those who either voluntarily

enlisted or were called to the colors. Those classes of employes whose duties are connected with the movement of trains must be of high standard, and some of them must be trained for years before they can be entrusted with the lives of passengers and fellow employes. Troop movements and heavy traffic of an emergent nature due to the war have made their demands on the railways. They have met these and will continue to meet them. If a coal shortage should develop this coming winter, it will not be because the railways have failed to do everything in their power to prevent it.

The foregoing paper was read before the Engineering Institute of Canada's Saskatchewan branch in Saskatoon recently.

## Marking and Addressing of Freight for Transportation Between Points in Canada.

The Canadian Freight Association issued the following circular Oct. 1:—

The attention of all concerned is directed to the following rules regarding marking and addressing of freight, framed for the purpose of minimizing, so far as possible, loss or miscarriage of the property.

1. Freight, when delivered to carriers to be transported at less than carloads, or any quantity ratings, must be marked in accordance with the following requirements and specifications, except as provided in rules 7 and 8, or in the Board of Railway Commissioners for Canada Regulations, for the transportation of explosives and other dangerous articles by freight.

2. (a) Each package, bundle, or loose piece of freight, except as provided for in rules 7, 8 and 9, must be plainly, legibly and durably marked by brush, stencil, marking crayon (not chalk), rubber type, metal type, pasted label (see note 1), tag (see note 2), or other method which provides marks equally plain, legible and durable, showing the name (not initials) of only one consignee, and (except as provided in rule 2 (b) of only one town or city, and province or state to which destined.

When consigned to a place of which there are two or more of the same name in the same province or state, the name of the county must also be shown.

When name and address of shipper is marked on freight, it must be prefixed by the word "From."

(b) When consigned to a place not located on the line of a carrier, each package, bundle, or loose piece required to be marked by this rule, must be marked with the name of the station at which the consignee will accept delivery, in addition to the name of final destination, if routed in connection with a water line via which there are no joint rates in effect, the name of the station at which delivery is to be made to such water line, must also be shown.

(c) When consigned "To order" each package must be so marked, and further marked with an identifying symbol or number which must be shown on shipping order and bill of lading.

Note 1. Labels must be securely attached with glue or equally good adhesive.

Note 2. Tags should be used only when the nature of the freight will not readily permit the use of labels, or other suitable marking. Tags must be made of metal, leather, cloth or rope stock or sulphite fibre tag board, sufficiently strong and

durable to withstand the wear and tear incident to transportation; and

When such cloth or board tag is tied to any bag, bale, bundle or piece of freight, it must be securely attached through a reinforced eyelet.

Tags used to mark wooden pieces or wooden containers must be fastened at all corners and centre, with large headed tacks or tag fasteners; or

Tags may be securely tied to wooden pieces when the freight would be injured by the use of tacks or tag fasteners.

Tags tied to bags, bales, bundles or pieces must be securely attached by strong cord or wire, except that when tied to bundles or pieces of metal, they must be securely attached by strong wire or strong tarred cord.

3. The marks on bundles, packages or pieces must be compared with the shipping order or bill of lading and corrections, if necessary, made by the shipper or his representative before bill of lading is signed by agent of the carrier.

4. Marks on bundles, packages, or pieces must correspond with those shown on shipping order or bill of lading. For example, on a shipment to Winnipeg, the package must be marked "Winnipeg," and not some other destination for which the goods may be ultimately intended. If packages are intended for reshipment, a special designating mark may be used for the guidance of those attending to the reforwarding, but only the destination given in the shipping order or bill of lading must be shown on the goods.

5. Old consignment marks must be removed or effaced by the shipper.

6. Freight in excess of full cars must be marked as required for less than carload freight.

7. Shipments of bar iron and steel must be marked as follows:—

All iron and steel bars five-eighths inch and under to be bundled; a tag to be placed on each bundle.

All iron and steel bars over five-eighths inch, in addition to each shipment being painted on end a distinctive color, to be tagged as follows:—

Shipment of 50 bars and under, 1 tag for every 5 bars.

Shipment of over 50 and under 100, 1 tag for every 10 bars.

Shipment of 100 or over, 1 tag for every 20 bars.

These tags to be fully addressed to consignee and destination and endorsed "Part of lot of 5, 10, 50, or 100, as the case may be, marked Red, Green, Yellow, etc." in

accordance with the colors painted thereon.

Shipments of bars, in 5 ft. lengths or under, exceeding a value of 10c a pound, to be either boxed or crated.

8. (a) A shipment that fully occupies the visible capacity of car or that weighs 24,000 lb. or more, when shipped from one station, in or on one car, in one day, by one shipper, for delivery to one consignee, at one destination, need not be marked, except when for rail and water transportation, as provided in rule 9.

(b) L.c.l. shipments of cheese may be accepted with the factory brand plainly stencilled on the container, instead of name and address of consignee.

9. Each package, bundle or piece of freight, either in carloads or less than carloads, for transportation via rail and water, must be fully marked as required for less than carload freight, except for shipments of flour and other grain products, sugar, cement, and salt bearing standard brands or trade-marks.

10. Freight traffic for points in United States must be marked as required by the Official Classification and supplements thereto.

The proper marking and addressing of freight is as much in the interest of the shipper as of the carrier, as neglect in the addressing of packages may result in the loss or miscarriage of the goods.

If the above requirements and specifications are not complied with, freight will not be accepted for transportation.

## Coal Shipments From Sydney, N.S.

The Railways Department at Ottawa has issued the following statement:—"The Canadian Government Railways, between May and Sept. 12, carried 196,189 tons of coal from Sydney, N.S.

"From May 1 to Aug. 23, the Dominion Coal Co. shipped from Sydney 3,697 cars, 129,734 tons of coal, of which 1,440 cars, 55,934 tons, were on railways' account, and the balance, 2,257 cars, 73,800 tons, for private consumers. From Aug. 23 to Sept. 12, 564 cars, 21,382 tons, were shipped on railways' account, and 393 cars, 14,934 tons, for private consumption.

"Since Aug. 23, the output has increased from an average of 36 cars to an average of 63 cars per working day, due to the coal company having provided additional facilities for loading box cars.

"Shipments of both private and railway coal are consigned almost exclusively to places in Nova Scotia and New Brunswick, less than 2% of the total being consigned to other provinces.

"The car supply was adequate during the period covered by this report, and there are a large number of empties available in Nova Scotia to take care of shipments for some time to come.

"The movement of coal from Sydney is well in hand, although hampered to some extent by passing tracks in Cape Breton being congested with Newfoundland freight. Additional power has been transferred to that section of the railway to enhance the movement. Mikado and Santa Fe locomotives were transferred early in October, which will materially reduce the number of trains to be dispatched, thereby increasing the capacity of the railway in Cape Breton for prompt movement.

"In addition to rail shipments, 20,692 tons were forwarded to Halifax and 9,447 tons to St. John from Sydney in railway steamships and barges from May 1. This coal was consigned to the railway."



## Poles Bought in Canada in 1916 and 1917.

The statistics herein are based on reports received by the Interior Department's Forestry Branch from 294 buyers of poles in Canada in 1917. The purchasers consisted of 167 telephone companies, 89 electric light and power companies, 19 electric railways, 16 steam railways, and 4 telegraph companies. The statistics are divided into two main groups; those concerning steam railway, telegraph, and telephone companies, and those concerning electric railway, power and light companies.

There were 11,042 more poles purchased in Canada in 1917 than in 1916, an increase of 6.1%. Poles were cut from 13 different kinds of wood, and of these kinds eastern cedar composed 74.5% and western cedar 18.7%, a total of 93.2% of cedar. The species next in order was spruce, which made up 3.7% of the total. The number of poles cut from eastern and western cedar, spruce, jack pine, chestnut, ash, and oak increased, while all other species show decreases, except maple and poplar, which were not reported in 1916 and which reappear in the list in 1917. Douglas fir, which formed 1.4% of the poles in 1915, is not reported in 1916 nor 1917. The steam railway, telephone, and telegraph companies purchased 57.9% of the poles, compared with 74.6% in 1916 and 61% in 1915.

The average purchase price of all poles has varied as follows in recent years: 1913, \$2.22; 1914, \$2.33; 1915, \$2.52; 1916, \$2.34; 1917, \$2.65.

The prices in the tables are based on the cost at the point of purchase. Arbitrary factors, as farmers cutting poles for local lines, low prices caused by lack of transportation facilities, high prices caused by long hauls and demand for particular lengths, make specific prices irregular. Only where poles are used in large numbers can the values be taken as representative.

**Canadian Economic Commission for Russia.**—To act in conjunction with other allied countries, Canada has appointed an economic commission to assist in the economic restoration of Siberia, and to assist the people to secure the things required for the equipment and carrying on of necessary industrial projects. The persons appointed are:—C. F. Just, Chief Canadian Trade Commissioner in Russia; W. D. Wilgress, Canadian Trade Commissioner at Vladivostok; Lieut.-Col. J. S. Dennis, C.M.G., Red Cross Commissioner and Liaison Officer of the Canadian Siberian Expedition, and Assistant to the President, C.P.R.; and Ross Owen, C.P.R., Transportation Officer in Russia. The commission's duties cover the whole industrial, social and economic situation, including the necessary transportation facilities.

**Pacific Great Eastern Ry. Passenger Service.**—The West Vancouver, B.C., municipal council on Sept. 28 approved of this company's winter train schedule, as submitted by the management, for the section between North Vancouver and Whytecliffe, which was put in operation Oct. 3, and is being worked in connection with the West Vancouver ferry service. Nine trains are run daily from Monday to Friday, and 11 trains on Saturdays. The schedule includes trains at suitable times for shipyard workers and school children. The 30 days time limit on settlers' tickets has been abolished.

## Poles bought in Canada 1912-1917.

Table 1.—Poles bought, 1916 and 1917, by kinds of wood and chief users.  
Total purchased by all users.

Kind of Wood.	1916.				1917.			
	Number.	Value.	Av. value.	Per cent.	Number.	Value.	Av. value.	Per cent.
<b>Total.</b>	<b>182,317</b>	<b>\$427,154</b>	<b>\$2.34</b>	<b>100.0</b>	<b>193,359</b>	<b>\$511,776</b>	<b>\$2.65</b>	<b>100.0</b>
Eastern cedar	143,018	300,438	2.10	78.4	144,036	310,399	2.16	74.6
Western cedar	23,834	105,173	4.41	13.1	36,222	182,879	5.05	15.7
Spruce	3,167	5,082	1.60	1.7	7,219	11,286	1.56	3.7
Tamarack	8,807	9,179	1.04	4.8	4,310	3,154	0.73	2.2
Jack pine	705	971	1.38	0.4	752	2,614	3.48	0.4
Chestnut	173	126	0.73	0.1	359	288	0.80	0.2
Ash	100	60	0.60	0.1	178	134	0.75	0.1
Maple	.....	.....	.....	.....	90	263	2.92	*
Oak	24	144	6.00	*	75	120	1.60	*
White pine	100	1,000	10.00	0.1	60	591	9.85	*
Balsam fir	2,055	3,580	1.74	1.1	46	32	0.70	*
Hemlock	334	1,401	4.19	0.2	6	12	2.00	*
Poplar	.....	.....	.....	.....	6	4	0.67	*
<b>Electric Railway, Power and Light Companies.</b>								
<b>Total.</b>	<b>46,252</b>	<b>\$205,602</b>	<b>\$4.45</b>	<b>100.0</b>	<b>81,397</b>	<b>\$283,347</b>	<b>\$3.48</b>	<b>100.0</b>
Eastern cedar	34,905	127,005	3.64	75.5	65,983	161,888	2.45	81.1
Western cedar	11,158	78,297	7.02	24.1	14,777	120,773	8.17	18.2
Tamarack	179	282	1.58	0.4	554	574	1.04	0.7
Spruce	10	18	1.80	*	42	84	2.00	*
Balsam fir	.....	.....	.....	.....	29	12	0.41	*
Hemlock	.....	.....	.....	.....	6	12	2.00	*
Poplar	.....	.....	.....	.....	6	4	0.67	*
<b>Steam Railways, Telephone and Telegraph Companies.</b>								
<b>Total.</b>	<b>136,065</b>	<b>\$221,552</b>	<b>\$1.63</b>	<b>100.0</b>	<b>111,962</b>	<b>\$228,429</b>	<b>\$2.04</b>	<b>100.0</b>
Eastern cedar	108,113	173,433	1.60	79.5	78,053	148,511	1.90	69.7
Western cedar	12,676	26,876	2.12	9.3	21,445	62,106	2.90	19.2
Spruce	3,157	5,064	1.60	2.3	7,177	11,202	1.56	6.4
Tamarack	8,628	8,897	1.03	6.3	3,756	2,580	0.69	3.3
Jack pine	705	971	1.38	0.5	752	2,614	3.48	0.7
Chestnut	173	126	0.73	0.1	359	288	0.80	0.3
Ash	100	60	0.60	0.1	178	134	0.75	0.2
Maple	.....	.....	.....	.....	90	263	2.92	0.1
Oak	24	144	6.00	*	75	120	1.60	0.1
White pine	100	1,000	10.00	0.1	60	591	9.85	*
Balsam fir	2,055	3,580	1.74	1.5	17	20	1.18	*
Hemlock	334	1,401	4.19	0.2	.....	.....	.....	.....

\*Less than one-tenth of 1 per cent.

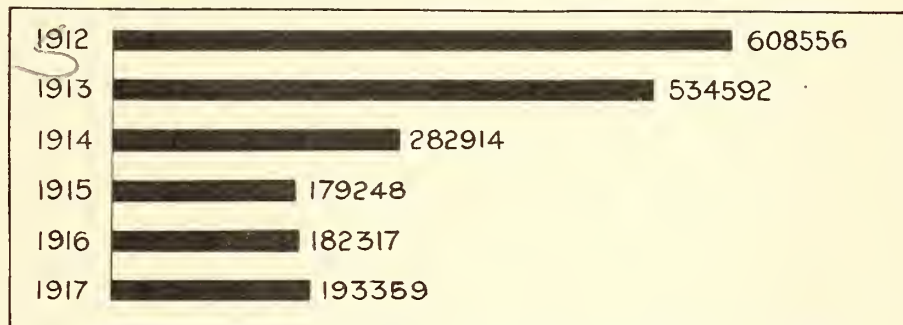


Table 2.—Poles bought, 1917, by length—classes and kinds of wood.

Kind of work.	20 to 25 ft. (64.7 per cent.)				26 to 30 ft. (17.0 per cent.)				31 to 35 ft. (9.6 per cent.)				36 to 40 ft. (5.5 per cent.)				41 ft. and over (3.2 per cent.)			
	Number.	Value.	Av. value.	Per cent.	Number.	Value.	Av. value.	Per cent.	Number.	Value.	Av. value.	Per cent.	Number.	Value.	Av. value.	Per cent.	Number.	Value.	Av. value.	Per cent.
<b>Total.</b>	<b>193,359</b>	<b>\$511,776</b>	<b>\$2.65</b>	<b>100.0</b>	<b>125,166</b>	<b>\$160,255</b>	<b>\$1.28</b>	<b>100.0</b>	<b>18,560</b>	<b>\$103,498</b>	<b>\$5.58</b>	<b>100.0</b>	<b>6,241</b>	<b>\$73,240</b>	<b>\$11.74</b>	<b>100.0</b>	<b>6,241</b>	<b>\$73,240</b>	<b>\$11.74</b>	<b>100.0</b>
Eastern cedar	144,036	310,399	2.16	74.5	100,877	125,998	1.25	80.6	11,270	55,386	4.91	60.7	5,334	35,427	6.40	52.1	2,281	23,737	10.41	36.6
Western cedar	36,222	182,879	5.05	18.7	13,134	26,347	2.01	10.5	6,666	45,465	6.82	35.9	4,843	36,093	7.45	45.6	3,466	41,859	12.08	55.5
Spruce	7,219	11,286	1.56	3.7	6,245	4,378	0.70	5.0	328	1,598	4.87	1.8	139	1,274	9.17	1.3	294	3,319	11.29	4.7
Tamarack	4,310	3,154	0.73	2.2	4,031	2,683	0.66	3.3	.....	.....	.....	.....	73	351	4.81	0.7	149	717	4.81	2.4
Jack pine	752	2,614	3.48	0.4	169	280	1.66	0.1	.....	.....	.....	.....	25	30	1.20	0.2	.....	.....	.....	.....
Chestnut	359	288	0.80	0.2	359	288	0.80	0.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ash	178	134	0.75	0.1	178	134	0.75	0.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maple	90	263	2.92	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oak	75	120	1.60	*	75	120	1.60	0.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
White pine	60	591	9.85	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Balsam fir	46	32	0.70	*	42	23	0.55	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hemlock	6	12	2.00	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poplar	6	4	0.67	*	6	4	0.67	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>36 to 40 ft. (5.5 per cent.)</b>																				
<b>Total.</b>	<b>10,626</b>	<b>\$73,240</b>	<b>\$6.89</b>	<b>100.0</b>	<b>6,241</b>	<b>\$70,168</b>	<b>\$11.24</b>	<b>100.0</b>	<b>6,241</b>	<b>\$70,168</b>	<b>\$11.24</b>	<b>100.0</b>	<b>6,241</b>	<b>\$73,240</b>	<b>\$11.74</b>	<b>100.0</b>	<b>6,241</b>	<b>\$73,240</b>	<b>\$11.74</b>	<b>100.0</b>
Eastern cedar	5,334	35,427	6.40	52.1	2,281	23,737	10.41	36.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Western cedar	4,843	36,093	7.45	45.6	3,466	41,859	12.08	55.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spruce	139	1,274	9.17	1.3	294	3,319	11.29	4.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jack pine	73	351	4.81	0.7	149	717	4.81	2.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tamarack	25	30	1.20	0.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
White pine	9	55	6.11	0.1	51	536	10.51	0.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maple	3	10	3.33	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

\*Less than one-tenth of 1 per cent.



# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

27667. Sept. 14.—Relieving Canadian Northern Ry. from providing further protection at King St., Pefferlaw, Ont.

27668. Sept. 16.—Authorizing Kettle Valley Ry. to build bridge across Similkameen River at Princeton, B.C.

27669. Sept. 16.—Approving Canadian Northern Ry. revised location in n. e. ¼ Sec. 19, Tp. 21, Range 28, west 4th meridian, Alta., and rescinding order 27612, Sept. 4.

27670. Sept. 12.—Ordering Canadian Northern Ry. to build bridge over Serviceberry River, Alta., on right of way north of railway bridge.

27671. Sept. 16.—Approving Canadian Northern Ry. revised location in s. w. ¼ Sec. 26 and s. e. ¼ Sec. 26, Tp. 59, Range 10, west 5th meridian, Alta., and rescinding order 27620, Sept. 4.

27672. Sept. 17.—Authorizing McKim Tp., Ont., to make highway over C.P.R. at mileage 83.13, on Lot 11, Con. 5, McKim Tp.

27673. Sept. 16.—Authorizing C.P.R. to build spur for Alberta Stockyards Co., Calgary, Alta.

27674. Sept. 17.—Authorizing Ontario & Minnesota Power Co., until further order, to build and operate power line along dyke on water front at Port Frances, Ont., subject to cancellation of such permission upon notice from Ontario Lands, Forests and Mines Department, use of such power line limited to company's own business, and prohibiting use for ordinary commercial purposes.

27675. Sept. 11.—Authorizing International Bridge & Terminal Co. to erect loading hunkers on Shevlin-Clarke Co.'s property at Port Frances, Ont., for loading mill refuse to cars.

27676. Sept. 20.—Authorizing Canadian Northern Ry. to build spur for Crescent Collieries at mileage 15.36, Bienfait Subdivision, Alta.

27677. Sept. 18.—Authorizing C.P.R. to rebuild bridge 44.53 over North River, Lachute Subdivision, Que.

27678. Sept. 14.—Relieving G.T.R. from providing further protection at public road between Lots 9 and 10, Broken Front Concession, at Bowmanville, Ont.

27679. Sept. 18.—Authorizing G.T.R. to build spur for Dillon Crucible Alloys, Welland, Ont.

27680. Sept. 17.—Recommending to Governor in Council for sanction, General Rules and Instructions 1918, Niagara, St. Catharines & Toronto Ry.

27681. Sept. 19.—Authorizing G.T.R. to build spur for De Laval Co., Peterborough, Ont.

27682. Sept. 18.—Authorizing C.P.R. to build spur for Dominion Wire Manufacturing Co., Lachute, Que.

27683. Sept. 20.—Authorizing Canadian Northern Ry. to build spur for Robin Hood Coal Co., in n. w. ¼ Sec. 21, Tp. 28, Range 19, west 4th meridian, Alta.

27684. Sept. 12.—Approving location of Grand Trunk Pacific Branch Lines Co.'s station, N.T.R. design A, at Lydden, Sask.

27685. Sept. 18.—Authorizing G.T.R. to build extension to siding for McColl Bros. & Co., Toronto.

27686. Sept. 18.—Approving agreement, Sept. 4, between Bell Telephone Co. and Sunderland Telephone Co., Ontario and York Counties, Ont., and rescinding order 23351, Feb. 23, 1915.

27687. Sept. 20.—Approving location of Grand Trunk Pacific Branch Lines Co.'s station at Central Butte, Sask.

27688. Sept. 16.—Ordering C.P.R. to carry out terms of order 26841, Dec. 14, 1917, by stopping train 821 at Oakville, Ont., when there are passengers for that point from Toronto.

27689. Sept. 16.—Approving agreement, Aug. 30, between Bell Telephone Co. and North Horton Telephone Association, Ltd., Renfrew County, Ont.

27690. Sept. 13.—Ordering Canadian Northern Ry. to cut down hedge and trim trees 12 ft. from ground at crossing of Sidney St., Trenton, Ont.

27691. Sept. 16.—Ordering G.T.R. southbound and C.P.R. northbound trains to connect at Inglewood Jet.; when either is late and there are passengers to connect with other train, last named to be held at least 10 minutes to enable connection to be made.

27692. Sept. 20.—Authorizing Saskatchewan Highways Department to make highway over C.P.R. station grounds and tracks at Lajord.

27693. Sept. 16.—Dismissing application of Board of Trade, Edmonton, Alta., for order directing Canadian Northern Ry. to appoint station agent at Legal, Alta., upon undertaking of C.N.R. to carry out order 26362, July 24, 1917.

27694. Sept. 16.—Authorizing C.P.R. to remove regular agent at Senate, Sask., caretaker to be appointed to see station is kept clean and heated for passengers on arrival and departure of trains, and care for l.c.l. freight and express matter.

27695. Sept. 16.—Authorizing C.P.R. to use Canadian Northern Ry. spur into Davidson &

Smith elevator, Fort William, Ont., switchmen to be appointed by C.N.R. to operate switch day and night; spur to be maintained by C.N.R.; wages of switchmen and maintenance of spur to be apportioned on a wheelage basis.

27696. Sept. 16.—Ordering Canadian Northern Ry. to erect third class station at Durban, Man., by Dec. 1.

27697. Sept. 21.—Amending order 27324, June 19, re London & Port Stanley Ry. spur on Bathurst St., London, Ont.

27698. Sept. 23.—Approving clearances at C.P.R. heated building for oil cars at Weston, Winnipeg.

27699. Sept. 23.—Authorizing C.P.R. to divert road allowance on northern boundary of n. e. ¼ Sec. 10, Tp. 3, Range 4, west 2nd meridian, and to close within limits of right of way diverted portion of road allowance at mileage 131.2, Estevan Subdivision, Sask.

27700. Sept. 23.—Approving Canadian Northern Ry. revised plan of bridge across Trent River, at Trenton, Ont., and rescinding order 12356, Nov. 23, 1910.

27701. Sept. 13.—Amending order 15377, Nov. 7, 1911, re provision of gates by G.T.R. at highway west of Cornwall station, Ont.

27702. Sept. 16.—Approving North Mountain Ry. standard passenger tariff C.R.C. 1.

27703. Sept. 23.—Suspending order 27074, Mar. 18, re C.P.R. spur for E. W. Gillette Co., Toronto.

27704. Sept. 16.—Ordering Canadian Northern Ontario Ry. to install interlocking plant at junction with C.P.R. near Harrowsmith station, Ont., by Oct. 1, 1919; pending installation all trains to stop before running through crossovers there.

27705. Sept. 24.—Extending to Nov. 1, time within which Kettle Valley Ry. shall enlarge freight shed end of station building at Rock Creek, B.C.

27706. Sept. 24.—Ordering C.P.R. within 60 days to install improved automatic bell at King St. West, Ingersoll, Ont.; 20% of cost to be paid out of railway grade crossing fund.

27707. Sept. 24.—Approving location and details of temporary station and facilities to be maintained by Montreal Tunnel & Terminal Co. (C.N.R.) at Lagauchetiere St., Montreal.

27708. Sept. 25.—Authorizing G.T.R. to build extensions to 2 spurs for Watson & Todd, Ltd., Ottawa, Ont.

27709. Sept. 16.—Ordering G.T.R. forthwith to put station at Low Banks, Ont., in proper repair and appoint caretaker to look after l.c.l. freight and express and keep station heated and lighted for passengers.

27710. Sept. 24.—Authorizing G.T.R. to build siding and spurs therefrom, for Crane, Ltd., Montreal.

27711. Sept. 21.—Approving Quebec Ry., Light & Power Co.'s standard mileage freight tariff C.R.C. 113.

27712. Sept. 25.—Extending to Nov. 15 time within which Canadian Northern Ry. shall erect third class station at Lanfane, Alta., as required by order 27416, July 8.

27713. Sept. 24.—Ordering C.P.R. to install bell at highway crossing north of Crowell's siding, mileage 39.4, Newport Subdivision, Que., 20% of cost to be paid out of railway grade crossing fund.

27714. Sept. 27.—Authorizing G.T.R. and any other railways that have made similar publications to amend tariffs providing free storage for 10 days on and after Oct. 1, providing that should Montreal Harbor Commissioners extend their free storage period beyond 10 days, the railway tariffs shall be simultaneously amended to provide for at least the same free storage period.

27715. Sept. 27.—Dismissing complaint of Bole Grain Co., Fort William, Ont., that C.P.R. refuses to issue bills of lading for grain weighed by government weighing department, except with the provision, "Shippers load and count."

27716. Sept. 27.—Ordering C.P.R. to install automatic bell at crossing of Main St., Morse, Sask.

27717. Sept. 27.—Ordering C.P.R. to extend track at Readlyn, Sask., to serve elevator there; work to be completed Nov. 1.

27718. Sept. 28.—Suspending, on complaint of Dominion Travellers Association, and other commercial travellers associations, Quebec, Montreal & Southern Ry. and Napierville Jet. Ry. tariffs which cancelled reduced fares and special haggare for commercial travellers pending before the Board.

27719. Sept. 27.—Ordering G.T.R. to build 2 stock pens at Goldstone, Ont., and sink well for supplying water for the stock.

27720. Sept. 26.—Authorizing C.P.R. to build diversion of road allowance on north boundary of n. e. ¼ Sec. 33, Tp. 11, Range 2, west 2nd meridian.

27721. Sept. 28.—Authorizing Dominion Atlantic Ry. to open for traffic portion of its North Mountain Branch from Centreville to Weston, 15.03 miles.

27722. Sept. 27.—Authorizing C.P.R. to build across and divert east and west road allowance

between n. e. ¼ Sec. 9, and s. e. ¼ Sec. 16, Tp. 61, Range 24, near Tawatinaw, Alta.

27723. Sept. 27.—Approving location of Canadian Northern Ry. Medicine Hat line through Tps. 27 and 22, Ranges 12 to 11, in Alberta, from mileage 22.22 to 58.94.

27724. Sept. 30.—Approving proposed C.P.R. mixed train service between Coronation and Kerrobert, Alta.

27725 to 27727. Sept. 30.—Ordering C.P.R. to restore until Dec. 31 semi-weekly mixed train services on its Irricana and Sterling-Manyberries Subdivisions, and between Suffield and Lomond, Alta.

27728. Sept. 30.—Ordering C.P.R. to establish a tri-weekly mixed train service carrying mail and express between Lethbridge and Cardston and between Lethbridge and Coutts, Alta.

27729. Sept. 30.—Authorizing C.P.R. to make crossing in Sec. 22, Tp. 36, Range 10, west 3rd meridian, and necessary road diversion to reach it and to close present crossing in Sec. 26, Sask.

27730. Sept. 30.—Authorizing C.P.R. to build extension to spur for Eagle Lumber Co., St. Jerome Parish, Que.

27731. Sept. 30.—Authorizing Quebec, Montreal & Southern Ry. to build spur for Leclaire Shipbuilding Co., St. Joseph, Que.

27732, 27733. Sept. 30.—Approving Bell Telephone Co.'s agreement with Vespra Tp., Ont., Sept. 16; and Tyndinaga Tp., Ont., Sept. 20.

27734. Oct. 1.—Amending order 27287, June 6, which restricted speed of Grand Trunk Pacific Ry. trains over certain bridges between Wainwright and Irma, Alta.

27735. Oct. 1.—Authorizing C.P.R. to operate over spurs serving Canadian General Electric Co., Peterborough, Ont.

27736. Oct. 1.—Authorizing Mount Royal Tunnel & Terminal Co. to cross Dorchester St., Montreal, carrying highway over its tracks by a viaduct.

27737. Sept. 27.—Authorizing Canadian Northern Western Ry. to open for traffic its line from mileage 32.1 Peace River Extension to mileage 33.8 Alta.

27738. Oct. 2.—Approving clearance of C.P.R. standard commercial coal sheds.

27739. Oct. 2.—Authorizing C.P.R. to build spur for Dryden Timber & Power Co., near Eagle River, Ont.

27740. Oct. 2.—Authorizing Canadian Northern Ontario Ry. to build branch line from its yard to Cartierville Village, Que.

27741. Oct. 1.—Ordering Quebec, Montreal & Southern Ry. to rearrange its train service between Iberville and Noyan Junction, Que.

27742. Oct. 7.—Authorizing C.P.R. to build spur for Gordon, Ironsides and Fares, Packers, Ltd., Moose Jaw, Sask.

27743. Oct. 4.—Authorizing Mount Royal Tunnel & Terminal Co. (C.N.R.) to open for traffic its line from junction with the C.N.O.R. near St. Laurent to terminal at Lagauchetiere St., Montreal.

27744. Oct. 3.—Authorizing Mayfield rural municipality no. 406, Sask., to make two highway crossings over Canadian Northern Ry. in Sec. 31, Tp. 42, Range 14, west 3rd meridian.

27745. Oct. 2.—Authorizing Templeton East, Que., to make highway crossing over C.P.R. near line along lots 2 and 3, Range 2, Templeton Tp., Que.

27746. Oct. 3.—Approving G.T.R. clearances of G.T.R. at certain spurs for Canadian General Electric Co. at Peterborough, Ont.

27747. Oct. 7.—Authorizing Hamilton Radial Electric Ry. to build branch across Wilson St., Hamilton, Ont.

27748. Oct. 7.—Ordering Michigan Central Rd. not to exceed 10 miles an hour over crossing of Bridge St. and Victoria Ave., Niagara Falls, Ont.

27749. Oct. 7.—Approving Canadian Northern Ry. time table effective Oct. 20, providing local train eastbound due at Fallowfield 10.05 a.m. and westbound 5.49 p.m.; train due to leave Ottawa at 12.45 p.m., daily except Sunday to stop at Fallowfield on flag for passengers west of Forgar.

27750. Sept. 30.—Relieving C.P.R. from providing further protection at the crossing of Admiral's Road, near Victoria, B.C.

27751. Sept. 28.—Authorizing C.P.R. pending further order to remove regular agent at Midnapore, Alta., waiting room to be kept clean and heated and lighted for passengers.

27752. Oct. 8.—Extending to Nov. 20 time within which Canadian Northern Ry. shall enlarge station room at Lamont, Alta.

27753. Sept. 28.—Ordering Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to build stone or timber wall 3 ft. high to prevent stones and gravel rolling down the slopes at crossing of Ross Road, Aldergrove, B.C.

27754. Oct. 7.—Authorizing Grand Trunk Pacific Saskatchewan Ry. and C.P.R. to operate over connection in s. e. ¼ Sec. 26, Tp. 36, Range 6, and in s. w. ¼ Sec. 16, Tp. 36, Range 4, west 3rd meridian.

27755. Oct. 9.—Relieving C.P.R. from providing further protection at 8th Avenue East, Moose Jaw, Sask.



27756. Oct. 9.—Dismissing complaints of Martin and Robertson, Ltd., and Imperial Rice Milling Co., Vancouver, B.C., against increased carload rates on rice from Vancouver to Eastern Canada, which went into effect August, 1917.

27757. Oct. 8.—Extending to Nov. 15, time 23, 1915, re removal by C.P.R. of its agent at Jeanette station, Ont.

27758. Oct. 9.—Authorizing Canadian Northern Ry. to build spur to its freight shed at Fort William, Ont., crossing Vickers and Cameron Sts.

27759. Oct. 9.—Authorizing Temiscouata Ry. to remove regular station agent at St. Hilaire, N.B., caretaker to be appointed to see station kept clean, and heated and lighted for passengers.

27760. Oct. 9.—Amending order 23341, Feb. within which A. B. Pottinger, District Registrar, Supreme Court of British Columbia, may make enquiry into and report upon cost of building Hastings St. viaduct over Vancouver, Victoria & Eastern Ry. (G.N.R.), Vancouver, B.C.

27761. Oct. 9.—Authorizing Canadian Northern Ry. to remove regular station agent at Brookings, Sask., caretaker to be appointed to see that station is kept clean and heated and lighted for passengers.

27762. Oct. 7.—Amending order 27629, Sept. 4, re replacement of wooden trestles at C.P.R. bridges 36.4 and 36.97 over the Frenchman River, Govenlock Subdivision, Sask.

27763. Oct. 21.—Ordering Canadian Northern Ry. to build transfer track with C.P.R. near Bain-tree station, Alta.

27764. Oct. 11.—Extending to Nov. 15 time within which the C.P.R. shall build two-pen stock yard at Cairns, Alta., as required by order 27505, July 30.

27765. Oct. 11.—Authorizing C.P.R. to make a diversion in lieu of portion of road allowance between Cons. 6 and 7, Albion Tp., Peel County, Ont., near mileage 28.9, MacTier Subdivision.

27766. Oct. 9.—Authorizing protection by bells as provided by G.T.R. at following crossings: Second Ave., Lachine; French Road, Vaudreuil; Military Road, Lancaster; Rock Cut, Collins Bay; Laidley Crossing, Ernestown; Geddes St., Belleville; Grier St., Belleville; Lakeborne Road, Colborne; Corbett's Crossing, Whitby Jct.; and Kingston Road Scarborough Jct.

27767 to 27770. Oct. 9.—Authorizing protection by watchmen by G.T.R. at 42 crossings.

27771. Oct. 12.—Authorizing C.P.R. to build spur for Prairie Rose Brewery Ltd., Moose Jaw, Sask.

27772. Oct. 21.—Ordering G.T.R., C.P.R. and Toronto, Hamilton & Buffalo Ry. to publish tariffs of joint through rates on turnpikes, in carloads, to principal destinations in southern United States as arranged between parties concerned, that shall not exceed lowest combination of rates to and beyond Buffalo, N.Y., or to and beyond basing points commonly called Ohio River Crossings; said tariffs to become effective not later than Nov. 1.

27773. Oct. 22.—Disallowing rates published in commodity tariffs on building material, which have been increased more than 25%, authorized by order in council 1863, July 27, by G.T.R., C.P.R., C.N.R., T.H. & B.R., Q.M. & S.J. Napierville Jct. Ry., D.A.R. Glangarry & Stormont Ry., Chatham, Wallaceburg & Lake Erie Ry., N.Y.C.R., M.C.R., P.M.R. and Wabash Ry.

27774. Oct. 22.—Ordering C.P.R., in connection with spur to be built for Laing Produce & Storage Co., to pay Mrs. Fraser, owner of lot immediately west, \$1,250 as compensation.

27775. Oct. 23.—Authorizing C.P.R. to deepen existing drain from Sydney St., Trenton, Ont., southeasterly.

27776. Oct. 24.—Authorizing Canadian Northern Ry. to open for traffic line from Eston to Glidden, Sask., 20 miles, speed of trains from mileage 101 to 104.5 limited to 18 miles an hour.

27777. Oct. 24.—Suspending Bell Telephone Co. schedules containing proposed increased tolls and charges, effective No. 20, pending hearing to be fixed by the Board.

27778. Oct. 24.—Amending order 27736, Oct. 1, re crossing of Dorchester St., Montreal, by Mount Royal Tunnel & Terminal Co.

27779. Oct. 24.—Approving location of C.P.R. station at Raymond, Alta., crossing of Broadway be narrowed to 66 ft., and street continued in its present line.

27780. Oct. 25.—Authorizing G.T.R. and Grand Trunk Pacific Saskatchewan Ry. to operate over connection at Duro, thence to Engen, Sask., through connection of C.P.R. and G.T.P.R., thence over C.P.R. through Saskatoon, thence through connection between C.P.R. and G.T.P.S.R. and over G.T.P.S.R. and through connection between G.T.P.S.R. and G.T.P.R., about 16 miles.

27781. Oct. 28.—Suspending rate of 2c per 100 lbs. on milling-in-transit, pending further hearing.

L. C. Fritch, Vice President, Chicago, Rock Island & Pacific Ry., and Minneapolis & St. Paul Rd., Chicago, in writing to have his address changed, says:—"Please change my address so that I may get your valuable paper regularly. I enjoy it very much."

## Canadian Northern Railway Construction, Betterments, Etc.

**Mount Royal Tunnel.**—The President and directors made a trip of inspection over the line from Toronto, reaching Montreal Sept. 29. The regular operation of trains in and out of the temporary terminal on Lagachetiere St., Montreal, through the tunnel, was started Oct. 21.

**Eastern Lines.**—Tenders have been asked for the erection of concrete abutments for bridges at mileage 129, Trenton subdivision, near Malvern, Ont., and mileage 0, on the Brockville subdivision at Brockville, Ont.

Tenders have also been asked for grading team tracks at the Cherry St. yards, Toronto.

The President and directors inspected the works in progress at the Leaside terminals, Toronto, Sept. 28. It was reported that progress on these works has not been as rapid as was anticipated, owing to the scarcity of labor and the difficulty of getting materials.

**Central District.**—A press report states that the relaying of the line west of Port Arthur with heavier steel rails has been completed as far as Mokomon, 32 miles, and that work has been suspended for the season.

A press report states that plans for the consolidation of the C.N. Ry. and Great Northern Ry. passenger stations and freight sheds at Warroad, Minn., are under consideration.

The Premier of Saskatchewan is reported to have said at Moose Jaw recently that the agreement providing for a joint station for the C.N.R. and the Grand Trunk Pacific Ry. in that city had been signed. It is said that the new station will be built on the C.N.R. property on

the Crescent, to which point the company has already built its line. The present G.T.P.R. station is outside the city limits. In addition to building a new station, the agreement provides for the use by the C.N.R. of the G.T.P.R. line between Moose Jaw and Regina. The building will be erected, the Premier said, in the near future, the Saskatchewan Legislature having made provision for guaranteeing bonds to provide the funds. A press report of Oct. 13 says that the proposed union station is to be on Stadacona St., between Third and Fourth Avenues, facing west, and that the freight sheds will be built north of Caribou St., in the vicinity.

**Vancouver Island Lines.**—M. H. MacLeod, General Manager and Chief Engineer, is reported to have informed the Premier of British Columbia, Oct. 10, that there were then 15 cars of steel rails at Patricia Bay, and that tracklaying out of Victoria towards Nitinat would be commenced Oct. 14 or 15; also that arrangements had been completed for the transfer of a continuous supply of the rails released by the B.C. Government from the Pacific Great Eastern Ry. dump at Squamish, and that 10 additional cars of rails which had just been released from Chicago for the P.G.R. would be diverted to the C.N. Ry. (Oct., pg. 440.)

Werner Horn, who was sentenced to 18 months imprisonment by a United States court for carrying dynamite, contrary to law, was brought before the U.S. Commissioner at Atlanta, Ga., Oct. 9, upon requisition proceedings from New Brunswick to answer a charge of blowing up the C.P.R. bridge on the New Brunswick-Maine boundary in 1895. Horn protested against the proceedings and asked to be interned in the U.S.

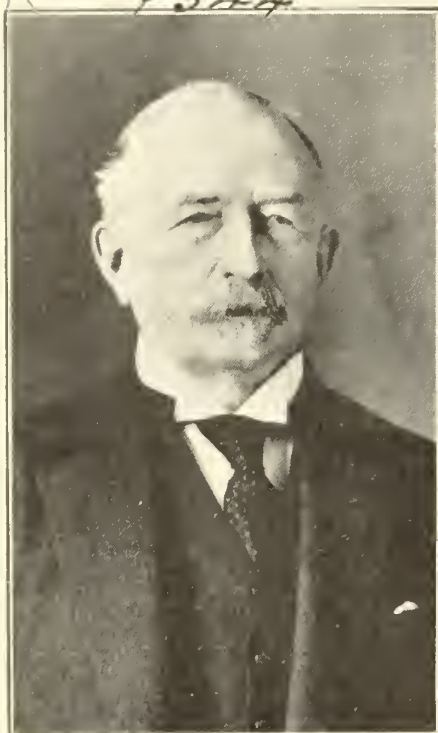
## Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Oct. 11, 1918.	Wheat. Bush.	Oats. Bush.	Barley. Bush.	Flax. Bush.	Totals. Bush.
<b>Fort William—</b>					
C.P.R. ....	149,193	40,571	33,542	6,210	229,516
Consolidated Elevator Co. ....	509,120	9,300	21,664	17,945	558,029
Empire Elevator Co. ....	440,710	55,264	39,199	5,767	540,940
Ogilvie Flour Mills Co. ....	390,075	65,109	78,139	.....	533,321
Western Terminal Elevator Co. ....	350,725	15,119	22,319	9,054	397,217
G.T. Pacific ....	459,384	267,848	51,709	4,846	783,787
Grain Growers' Grain Co. ....	484,131	307,854	209,730	.....	1,001,815
Fort William Elevator Co. ....	369,246	175,192	29,999	6,640	581,077
Eastern Terminal Elevator Co. ....	84,279	44,125	11,937	.....	140,341
<b>Port Arthur—</b>					
Port Arthur Elevator Co. ....	392,877	516,127	217,533	9,788	1,136,325
Canadian Government Elevator ....	132,454	107,606	14,793	15,209	270,062
Thunder Bay ....	169,344	95,868	94,191	1,906	361,309
Saskatchewan Co-op. Elevator Co. ...	717,378	117,185	30,872	7,221	872,656
<b>Total Terminal Elevators ...</b>	<b>4,648,916</b>	<b>1,817,268</b>	<b>855,625</b>	<b>84,586</b>	<b>7,406,395</b>
<b>Saskatoon Can. Govt. Elevator ....</b>	<b>104,137</b>	<b>45,245</b>	<b>3,903</b>	<b>468</b>	<b>153,753</b>
<b>Moose Jaw Can. Govt. Elevator ....</b>	<b>363,053</b>	<b>31,905</b>	<b>3,263</b>	<b>120</b>	<b>398,341</b>
<b>Calgary Can. Govt. Elevator ....</b>	<b>191,483</b>	<b>96,110</b>	<b>20,066</b>	<b>83</b>	<b>307,742</b>
<b>Vancouver Can. Govt. Elevator ....</b>	<b>26,934</b>	<b>37,630</b>	<b>.....</b>	<b>.....</b>	<b>64,564</b>
<b>Total Interior Terminal Elevators..</b>	<b>685,607</b>	<b>210,890</b>	<b>27,232</b>	<b>671</b>	<b>924,400</b>
<b>Midland—</b>					
Aberdeen Elevator Co. ....	101,127	4,457	.....	.....	105,584
Port McNicol ....	220,575	4,927	.....	.....	225,502
<b>Goderich—</b>					
Elevator & Transit Co. ....	232,512	235,780	.....	.....	468,292
Western Canada Flour Mills, Ltd....	20,155	9,334	.....	.....	29,489
<b>Kingston—</b>					
Commercial Elevator Co. ....	.....	27,640	.....	.....	27,640
Port Colborne, Can. Govt. Elevator...	128,404	.....	.....	.....	128,404
Port Colborne, Maple Leaf Milling Co.	293,854	.....	.....	.....	293,854
<b>Montreal</b>					
Harbor Commissioners No. 1 ....	16,649	130,626	59,409	.....	206,684
Harbor Commissioners No. 2 ....	26,221	291,068	59,251	.....	376,540
Montreal Warehousing Co. ....	.....	3,994	61,798	.....	65,792
Quebec Harbor Commissioners ....	10,379	182,527	748	†24,401	218,055
West St. John, N.B. ....	.....	13,583	.....	.....	13,583
Halifax, N.S. ....	19,649	.....	.....	.....	19,649
<b>Total Public Elevators .....</b>	<b>1,069,525</b>	<b>903,936</b>	<b>181,206</b>	<b>†24,401</b>	<b>2,179,068</b>
<b>Total quantity in store .....</b>	<b>6,404,048</b>	<b>2,932,094</b>	<b>1,064,063</b>	<b>†85,257</b>	<b>10,509,833</b>
† Wheat overshipped. *Corn.					



## The Changes in the Canadian Pacific Railway Management.

Following a meeting of C.P.R. directors in Montreal, Oct. 10, the following statement was given to the press:—"At a meeting of the directors held in Montreal today, Lord Shaughnessy, after 20 years of office, retired from the presidency of the C.P.R. Co., so that, while relieved of executive duties, he will continue to serve with his counsel and ex-



Rt. Hon. Lord Shaughnessy, K.C.V.O.  
Chairman, Canadian Pacific Railway Company.

perience. This change is due to Lord Shaughnessy's conviction that in view of the extensive programme planned by the C.P.R. for the period of the war, the best interests of the company would be served if a younger man were to assume the active direction of so large and complex a system. Although several years older than either of his predecessors were at the time when they retired from the presidency, he decided when the war broke out to carry on till the financial horizon should lighten. Now, however, he feels less hesitation in handing over the executive responsibility to a successor, especially to one who has shown notable administrative ability, and who enjoys to a marked degree the confidence not only of the political and business leaders of Canada, but also of the employees of the Canadian Pacific Railway itself. E. W. Beatty, the new president, has been Vice President and General Counsel, and also a director of the C.P.R. Co. for several years.

"Sir George Bury, on account of ill health, is retiring from the position of Vice President, and Grant Hall, who has been Vice President in charge of Western Lines, has been appointed in his place."

In a newspaper interview on the same day Lord Shaughnessy is reported to have said:—"Sir George Bury entered the company's service in the early part of 1883, as a junior stenographer in my office when I was General Purchasing Agent, and during the following 35 years he steadily advanced, receiving promo-

tion after promotion in recognition of the fidelity and ability with which his duties were performed wherever he was located and whatever his position, until he finally became Vice President and a member of the executive committee. Unfortunately, his state of health has not been satisfactory for a couple of years past, and with a view to rest and recuperation he asked to be relieved from the duties of the Vice Presidency, and the request was granted by the directors. Although he has retired from the official position he will not be entirely disassociated from the company's affairs."

Lord Shaughnessy retains the suite of offices on the second, or executive, floor of the general office building at Windsor St. Station, Montreal, which he has occupied since the extension down to St. Antoine St. was built. E. W. Beatty remains in room 203, which has been his office as Vice President and General Counsel.

Grant Hall arrived in Montreal from Winnipeg on Oct. 10 and went to work immediately in the office occupied formerly by Sir George Bury. He is reported as saying in a newspaper interview:—"The recent change in my position means, of course, that in future I shall reside in Montreal, but it is my intention to keep in close touch with western conditions and to make my inspection trips over that portion of the system as frequent as possible. The selection of D. C. Coleman as resident Vice President will no doubt commend itself to the public, as he has

A few days after the changes were announced, Sir George Bury left for Washington, D.C., and other southern points, accompanied by Lady Bury.

Full particulars of other promotions in the company's service are given under "Transportation Appointments Throughout Canada" and biographical information about all the appointees is given under "Mainly About Railway People Throughout Canada" on other pages of this issue.

These are days of intensely interesting events in regard to the management of Canadian railways. In September, the reorganization of the Canadian Northern directors was accomplished, and D. B. Hanna was promoted to the presidency. Early in October, Lord Shaughnessy retired from the presidency of the C.P.R., after 35 years continuous service with the company.

When Thomas G. Shaughnessy, as he then was, took over the C.P.R. presidency in 1899, from the great and gifted miles and its annual gross revenue has grown to \$152,389,334.95. Van Horne, but for whose remarkable ability and indomitable courage the company could not have built its transcontinental line, the company was operating 9,618.6 miles of track and its gross annual revenue was \$26,138,977.13. During the twenty years of Lord Shaughnessy's able administration, the company's railway lines have been extended to 18,625.7



Edward W. Beatty, K.C.  
President, Canadian Pacific Railway Company, in his office.

spent his entire railway career in Western Canada and is thoroughly conversant with traffic conditions and public sentiment in that territory. It can be accepted as an intimation that the railway will be efficiently and capably managed and that the policy of the company there will continue on broad and generous lines."

That Lord Shaughnessy performed his duties as President in a most able way, and with due regard not only to the company's interests, but to those of the people as well, is undoubted, and in retiring from active work he has the satisfaction of handing over to his successor, in a magnificent financial position, the



greatest transportation system in the world, whose own combined steamship and railway lines extend from England to China. Lord Shaughnessy has not confined his activities to his railway work, but has taken an active part, as a financial and other institutions. He has played a magnificent part in regard to the war and has been of the greatest assistance to both the British and Canadian governments in this respect, and he has proved himself in every way one of the very foremost and most useful citizens of his adopted country, the people generally of which will wish him many years of comparative relaxation from the arduous work he has carried on for so many years.

E. W. Beatty's appointment to the presidency did not come in the nature of a surprise, except possibly as to its date. For a considerable time he has been looked on as Lord Shaughnessy's logical successor. Some newspapers have referred to his career as a meteoric one. It is nothing of the kind. He has risen, rapidly, it is true, and at a comparatively early age, to the greatest position Canada offers, but this rise is not owing to luck, or anything of a meteoric nature, but simply to sheer force of ability and the possession of most undoubted qualifications.

The C.P.R. has passed through three stages in its career, the first, its inception and early financing, etc., under George Stephen; the second, the construction of its transcontinental line and a number of branches, the establishment of ocean steamship lines, the creation of world wide traffic connections, and the policy of retaining all earning powers in its own hands, under Van Horne; the third, the building of extensions and more feeding lines, the extension of its traffic connections, the development of its lands and the placing of its finances in an unassailable position, under Shaughnessy. Now it enters on its fourth stage, in which its relations to the public and the question of its future as an independent privately owned line, or as a part of a great government system, will be very much to the fore. For dealing with these questions, as well as with the general administration of the immense property, Mr. Beatty is most thoroughly equipped.

Grant Hall's continued promotions, since he first entered C.P.R. service, have been amply justified. He leaves the direct control of the western lines with a splendid record of successful administration and is amply equipped for the larger responsibilities which have been given him.

The changes in executive positions have resulted in several others, which are detailed on other pages of this issue, and have opened the door of opportunity for a number of other officials who have well earned their promotions.

Sir George Bury's retirement from railway service at the early age of 52 is much to be regretted. He is unquestionably a very able operating man, and, unless his state of health prevents, he should have many useful years before him.

The Eastern Canadian Passenger Association met in Montreal, Oct. 8, under the presidency of A. J. Parr, General Freight and Passenger Agent, Timiskaming & Northern Ontario Ry. A. Miller, who had been General Agent, New York Central Rd., at Montreal, and who has been appointed General Agent at Albany, N.Y., resigned the chairmanship of the Association.

## Railway Finance, Meetings, Etc.

**Grand Trunk Ry.**—A London, Eng., cable stated, Oct. 6, that it was announced there that the G.T.R. directors were unable to pay dividends on the guaranteed or preference stock out of the net earnings for the half year ended June 30.

**Grand Trunk Pacific Ry.**—The directors for the current year elected at the recent annual meeting, are:—A. W. Smithers,



Grant Hall,  
Vice President, Canadian Pacific Railway.



Sir George Bury  
Who has retired from the Vice Presidency of the Canadian Pacific Railway.

Chairman; H. G. Kelley, President; W. H. Biggar, Vice President and General Counsel; Frank Scott, Vice President and Treasurer; J. E. Dalrymple, Vice President (Traffic); W. H. Ardley, Comptroller; Sir H. M. Jackson, Sir W. L. Young, J. A. Clutton-Brock, Hon. R. Dandurand, Jules Hone, E. J. Chamberlin, J. B. Fraser and P. McAra. W. P. Hinton is Vice President and General Manager.

**Moncton & Buctouche Ry.**—A meeting

of shareholders for transacting all business necessary to consummate the sale of all the real and personal property belonging to the railway, was called to be held in Moncton, N.B., Oct. 8, but was adjourned until Oct. 15.

The M. & B. Ry. is one of the branch lines for acquiring which provision was made by the Dominion Parliament at its last session. The amount voted by parliament for the purchase of this line was \$70,000. The company's history was given in Canadian Railway and Marine World for July, on pg. 280.

**Temiscouata Ry.**—Gross earnings for July, \$36,014; operating expenses, \$25,622; net earnings, \$10,392.

**Thousand Islands Ry.**—The annual meeting was held at Gananoque, Ont., Oct. 4. The officers for the current year are: E. W. Rathbun, President; H. W. Cooper, Manager; J. H. Valteau, Secretary and Treasurer.

**Timiskaming & Northern Ontario Ry.**—Passenger receipts for August, \$64,298.36; freight receipts, \$171,875.53; total receipts, \$235,173.89, against \$61,955.09, passenger receipts; \$117,419.45, freight receipts; \$179,374.54, total receipts for Aug., 1917.

## Freight and Passenger Traffic Notes.

The last boat of the season from Farcross for Atlin, B.C., left the former point Oct. 28, carrying passengers who had left Vancouver Oct. 19.

The Edmonton, Dunvegan & British Columbia Ry. will, it is reported, inaugurate a through train service from Edmonton to Grand Prairie, Alta., Nov. 1.

The St. John's, Nfld., Board of Trade has taken up with the Reid Newfoundland Co. and the Newfoundland Government, the question of the increased rates on the company's railway, which came into force Oct. 5.

The Canadian Northern Ry. has discontinued operating a local train between Winnipeg and Emerson, Man., leaving this traffic to the Great Northern Ry., which operates over the branch under no agreement.

The Grand Trunk Pacific Ry., in order to meet the wishes of the Canadian Railway War Board regarding the conservation of fuel, has discontinued for the winter operating parlor-observation cars between Winnipeg and Edmonton.

The Grand Trunk Pacific Ry. has begun operating its trains, both east and west bound, into the C.P.R. station at Saskatoon, thus eliminating the transfer from South Saskatoon into the city. The C.P.R. station thus becomes a union station for both railways, and South Saskatoon is discontinued as a ticketing station.

The Victoria, B.C., Board of Trade, on Oct. 3, discussed the stoppage of the running of the C.P.R. steamship to the mainland on Sunday nights, and a suggestion was made that if it was absolutely necessary to suspend the service one night in the week, Saturday night would be a more convenient night than Sunday for cutting the service.

The C.P.R. has completed arrangements for the sale of through tickets from points on its line to points on the Edmonton, Dunvegan & British Columbia Ry. Baggage may be checked through to provide for their own transfer between the stations of the two companies in Edmonton. These stations are about a mile apart, and there is street car connection between them.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta & Great Waterways Ry.**—J. D. McArthur, President, is reported to have said in an interview at Edmonton, Oct. 4, that rails would be laid into McMurray this autumn, and that traffic would be carried to that point as it offered during the winter. Traffic to warrant a frequent service could not be expected at first. (July, pg. 285.)

**The Beaver Cove Lumber & Pulp Co.** has deposited plans with the Minister of Public Works, Ottawa, for railway trestles, log dump, wharf, buildings, etc., to be built on Beaver Cove, Broughton Strait, in front of section 2, Rupert District, B.C. E. A. Cleveland, Vancouver, is engineer in charge.

**Canadian Pacific Ry.**—The Mayor of Victoria, B.C., is reported to have informed the city council recently that in the discussion of the Johnston St. bridge matter with the C.P.R. directors, Lord Shaughnessy summed it up by stating that the discussion narrowed down to three propositions, namely: (1) That the railway would proceed to carry out the terms of the order in council of 1887, providing accommodation for railway, foot and vehicular traffic. (2) The railway would join with all other interested parties in the construction of a modern up to date joint highway and highway bridge. (3) The construction, alongside of one another, of two separate bridges, one, a highway bridge, constructed by the government, the city, and other interested parties, excepting the Esquimalt & Nanaimo Ry.; the other bridge to be constructed by the Esquimalt & Nanaimo Ry., for the use of the railway, of a design in harmony with the highway bridge. A decision as to what will be done is expected to be reached shortly. The mayor had a conference with H. E. Beasley, General Superintendent, Esquimalt & Nanaimo Ry., and P. B. Motley, Engineer of Bridges, in regard to the matter, Oct. 12. Mr. Motley left the same day for Montreal to report on the question. (Sept., pg. 438.)

**Central Canada Ry.**—J. D. McArthur, President, is reported to have said in Edmonton, Oct. 4, on returning from a trip of inspection over the line made in company with the Premier and other members of the Alberta Government, that the line is ballasted throughout to the crossing of the Peace River. Rapid progress was made this year with the erection of the bridge across the river. The contract calls for the completion of the bridge by April, 1919, but it was expected to be finished by Nov. 1. The bridge will not be available for general traffic until the 50 ft. dump at the east end is completed next summer, the material for the widening having to be obtained from an excavation at the west end of the bridge. Grading has been in progress on a 14 mile stretch on the west side of the river, and with the exception of 5 miles of heavy work partially done, this is finished. This carries the line to the upland level on a gradient of 1.5%. There will be difficulty in getting rails for this line and for the further extension into the water hole district. (Sept., pg. 390.)

**Dominion Atlantic Ry.**—The Board of Railway Commissioners has authorized the opening for traffic of the company's North Mountain Branch, 15.03 miles. This branch starts at Centerville, on the Cornwallis Branch, 7 miles from Kentville, and extends to Weston, on the Bay of Fundy.

Construction was started in 1914, the track being laid the same year. Following are the stations on the line, with their mileages from Centerville:—Billtown, 2.9 miles; Lakeview, 5.3 miles; Woodville, 7.2 miles; Grafton, 9.5 miles; Somerset, 12.3 miles, and Weston, 15.3 miles. (Sept., pg. 390.)

**Edmonton, Dunvegan & British Columbia Ry.**—The Premier and other members of the Alberta Government and J. D. McArthur, President, E.D. & B.C. Ry., were guests at a dinner given by the Grande Prairie Board of Trade, Oct. 1. The occasion was a general inspection of this and the other railway lines in which the government is interested, and which are being built by J. D. McArthur. On returning to Edmonton, Oct. 4, J. D. McArthur is reported to have said that ballasting on the line had been completed to within 12 miles of Spirit River, and that work would be started at once in putting the Grande Prairie Branch into good shape for traffic. A through train service to Grande Prairie will be inaugurated Nov. 1. The completion of the extension of the main line from Spirit River to the Pouce Coupe extension could not be decided upon definitely owing to the difficulty of obtaining rails. (July, pg. 285.)

**Grand Trunk Pacific Ry.**—In an interview at Vancouver, B.C., Oct. 10, H. Carlton, of Carlton & Co., contractors, said his firm had been engaged during the summer on ballasting and other work on the G.T.P. Ry. in British Columbia. The headquarters of the work were at Prince George, and there had been employed 8 steam shovels and a hydraulic plant. Slides of embankments had been removed and cuttings had been improved, while ballasting and other betterment work had been done. (Sept., pg. 90.)

**The Michigan Central Rd.'s freight sheds** at Ridgeway, Ont., were destroyed by fire caused through sparks from a passing train Oct. 10. The loss is estimated at \$10,000. The building was of frame and over 100 ft. long. (Oct., pg. 438.)

**North Shore Ry.**—The Moncton, N.B., Board of Trade has asked the Dominion Government to take over and operate as a branch of the Intercolonial Ry., this line, which runs from Adamsville Jct., on the Intercolonial Ry., to Beersville, N.B., 14 miles. (Oct., pg. 438.)

**Pacific Great Eastern Ry.**—A press report states that 8 miles of track have been laid on the extension of the line beyond Clinton, B.C., since work was resumed. Other work done includes the distribution of 25,000 ties, the stringing of 19 miles of telephone line, the completion of bridge 132, a 340 ft. structure, and the making of considerable progress with bridge 133. A contract is reported to have been let locally for the erection of a station and freight shed at the Seventy-Mile crossing of the Cariboo Road. (Oct., pg. 438.)

**Quebec & Saguenay Ry.**—A press report states that it is expected to have the grading, etc., from Baie St. Paul to Murray Bay, Que., ready for tracklaying before the end of the year. There is reported to be one obstacle in the way of completing the line, viz., the building of a bridge over the River du Graffe at Baie St. Paul. The plans call for the erection of a fixed span bridge resting on piers built in the bed of the river. Local people

claim that the river is a navigable one and that the bridge should be built so as not to impede navigation. This matter is reported to have been taken to a Quebec court for decision. (Oct., pg. 438.)

**Roberval-Saguenay Ry.**—We are officially advised that the company has decided to postpone for the present the proposed construction of a spur line from near Pont Arnaud, on the main line, to a loading point at Riviere-du-Moulin, Que., 1.5 miles. (June, pg. 241.)

**St. John & Quebec Ry.**—C. O. Foss, Chief Engineer, is reported to have said at a dinner given by the St. John, N.B., Board of Trade, Oct. 7, that it was hoped to have the extension from Gagetown to a connection with the C.P.R. ready for operation this year, but labor was so scarce that no definite date could be set for the opening of the extension. The main work of construction had been completed, all that remained to be done was the placing in position of three or four bridge spans and the ballasting of the tracks. (Oct., pg. 438.)

**Sydney & Louisburg Ry.**—A press report states that a contract has been let to Chappell Bros. for the erection of a locomotive house at Sydney, N.S., the building to be of concrete and brick, with a modern truss roof, and that it is expected to be completed within three months, and that the estimated cost of the work is \$75,000.

## Canadian Railway War Board's Work.

**Changes in Committees.**—D. B. Hanna, President, Canadian Northern Ry., has succeeded Sir Wm. Mackenzie on the executive committee on war and national defence. Grant Hall, Vice President, C.P.R., has succeeded Sir George Bury as a member of the administrative committee, and has been appointed its acting chairman during the absence through illness of the chairman, U. E. Gillen, Vice President, G.T.R. M. H. MacLeod, Vice President, operation, etc., Canadian Northern Ry., will succeed D. B. Hanna as a member of the Administrative Committee. W. P. Hinton, Vice President and General Manager, Grand Trunk Pacific Ry., is reported to have been appointed to succeed Grant Hall as chairman of the Western administrative sub-committee.

**Freight House Hours of Labor.**—Owing to the insistent demand of labor for an 8-hour day, which has been recognized, and which railways have undertaken to apply in Canada, it is considered necessary to work freight house staffs on the 8-hour day basis. It is, therefore, directed that, effective Oct. 15, 1918, railway freight houses shall be opened for the receipt and delivery of freight on week days at 7.30 a.m. daily, and closed at 5 p.m. daily, except Saturday, on which day houses shall be closed at 1 p.m.

G. Black, formerly local manager, Great North Western Telegraph Co., Hamilton, Ont., died there Oct. 2, aged 81. He was born at Montreal, and was in telegraph service at St. Hyacinthe, Que., and Brockville, Ont., before being appointed to Hamilton, where he remained as local manager for about 40 years, retiring about 10 years ago.

W. E. Norman, heretofore Assistant Superintendent, has been appointed Superintendent, Canadian Express Co., vice E. Allen, deceased.



## Mainly About Railway People Throughout Canada.

**W. B. Howard**, District Passenger Agent, C.P.R., Toronto, was married there, Oct. 8.

**Sir Henry Drayton, K.C.**, Chief Railway Commissioner, resumed his duties, Oct. 18, after an attack of influenza.

**James Barbour**, Claims and Right of Way Agent, Canadian Northern Ry., Toronto, died there, Oct. 17, aged 50.

**Frank Scott**, Vice President and Treasurer, G.T.R., Montreal, has also been elected a director of the Central Vermont Ry. Co.

**Hon. J. D. Reid**, Minister of Railways and Canals, returned to Ottawa at the end of October after a trip to California with Mrs. Reid.

**Sir Henry Drayton, K.C.**, Chief Railway Commissioner, was confined to his home at Ottawa, early in October, with influenza, and resumed his duties Oct. 16.

**A. S. McDonald**, Locomotive Foreman, C.P.R., Regina, Sask., was presented with a case of silver by the local locomotive staff, Sept. 30, on his retirement on superannuation, after 35 years service.

**Capt. T. A. Hiam**, formerly private secretary to Sir Donald Mann, who went overseas with the Canadian Buffs from Toronto, and transferred to the Royal Engineers, has been sent to Salonika in the railway operations branch.

**E. P. Cushing**, formerly private secretary to the President, C.P.R., was presented with a smoker's set by a number of his associates at Montreal, recently, on his appointment as Purchasing Agent, C.P.R., Winnipeg.

**W. B. Lanigan**, Freight Traffic Manager, C.P.R., was entertained to luncheon by the Winnipeg Board of Trade, Oct. 8, and presented with a grandfather's clock, on leaving Winnipeg, where he had been Assistant Freight Traffic Manager, for Montreal, to take up his new duties.

**W. F. Langton**, whose appointment as General Manager, Dominion Transport Co., Montreal, was announced in our last issue, was presented with a desk and an illuminated address by the staff at Toronto, before leaving there, where he had been Superintendent for a number of years.

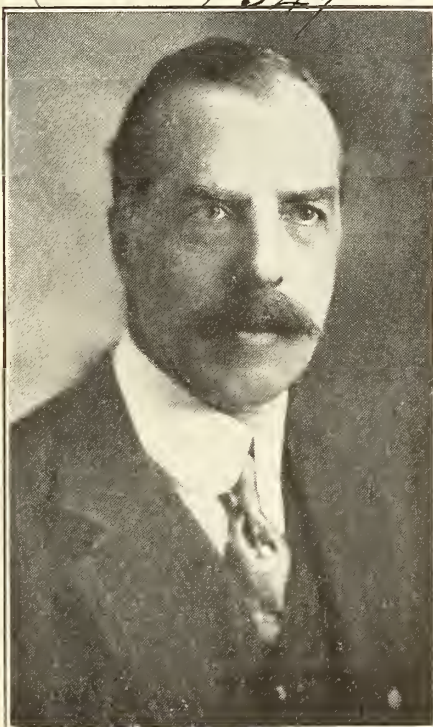
**George Cairns**, at one time Yardmaster, C.P.R., Ottawa, Ont., and for some time subsequently, up to his superannuation about three years ago, baggage man on C.P.R. trains through the Gatineau Valley, died at Westboro, near Ottawa, Oct. 22. He had been in railway service for nearly 50 years.

**J. F. Aitchison**, who has been appointed acting Auditor of Disbursements, G.T.R. and Grand Trunk Pacific Ry., Montreal, entered G.T.R. service in 1897, since when he has been, to 1914, in accounting department, London, Ont.; 1914 to 1917, travelling accountant, Montreal; 1917 to Oct., 1918, special auditor, Montreal.

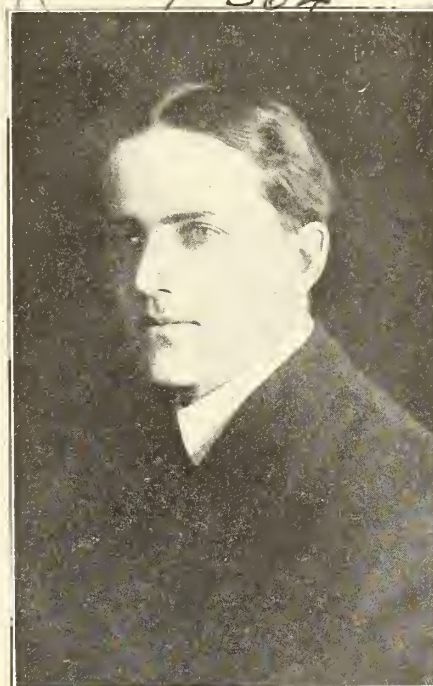
**W. W. Butler**, Vice President and Managing Director, Canadian Car and Foundry Co., Montreal, has won the shield trophy donated by the Canadian Northern Ry. annually to any non-resident angler catching the largest speckled trout with the regulation tackle prescribed for Nipigon waters. The fish was 23 in. long and 15 in. in girth.

**Victor Albert George Day**, who has been appointed Resident Engineer, Toronto Terminals, C.P.R., was born at Aberdeen, Scotland, Feb. 4, 1883, and entered

C.P.R. service in Sept., 1903, since when he has been, to June, 1907, draftsman, Montreal; June, 1907, to June, 1911, office engineer, Montreal; June, 1911, to Aug., 1918, Assistant Engineer, Construction Department, Montreal.



A. D. MacTier,  
Vice President, Eastern Lines, Canadian Pacific  
Railway.



D'Alton C. Coleman,  
Vice President, Western Lines, Canadian Pacific  
Railway.

**J. M. Rosevear**, who has been appointed General Auditor, G.T.R. and Grand Trunk Pacific Ry., Montreal, was born at St. Lambert, Que., Aug. 9, 1869, and entered G.T.R. service in 1897, since when he has

been, to 1905, clerk in Accounting Department; 1905 to 1907, travelling accountant; 1907 to Sept. 1, 1908, chief clerk to Auditor of Disbursements; Sept. 1, 1908, to Oct., 1918, Auditor of Disbursements.

**Basil Magor**, formerly Vice President and Managing Director, National Steel Car Co., who left Hamilton, Ont., some months ago and returned to the United States, has been appointed by the Vice President and General Manager of the United States Shipping Board Emergency Fleet Corporation, as District Manager for the North Atlantic District. Additional particulars are given in the Marine Department, farther on in this issue.

**C. F. Burns**, Auditor of Disbursements, Canadian Government Railways, Moncton, N.B., died suddenly through heart failure, at his home, Oct. 16. He was born at Clementsport, N.S., Sept. 10, 1853, and held the position of Auditor of Disbursements since July, 1906, when that department was inaugurated. Prior to that appointment he was connected with the Audit Department as travelling auditor and chief clerk, and was in C.G.R. service for about 20 years.

**Charles Spencer**, who died at Ottawa, Oct. 15, aged 85, was, at the time of his superannuation a few years ago, one of the oldest employes of the C.P.R., having been in the service of the company and its predecessor for about 45 years. He was for many years a conductor on various C.P.R. lines. H. B. Spencer, Superintendent, Ottawa Division, Ontario District, is a son, and the late C. W. Spencer, at one time in the C.P.R. service and afterwards with the Canadian Northern Ry., was another son.

**T. T. Irving**, whose appointment as Chief Engineer, G.T. Western Lines Rd., Detroit, Mich., was announced in our last issue, was educated at the Prince of Wales College and McGill University, and graduated in 1898. He entered G.T.R. service in May, 1898, and was to 1904, Assistant Engineer, Eastern Division, Montreal; 1904 to 1912, Resident Engineer on the Western Lines; 1912 to 1913, Trainmaster, and 1913 to Aug., 1918, Division Engineer, Western Lines, Chicago, Ill.

**G. U. Ryley**, Land Commissioner, Grand Trunk Pacific Ry., Winnipeg, has retired from the service. He was born at Hamilton, Ont., June 16, 1853, and is a Dominion Land Surveyor. He was engaged in Manitoba and the North West Territories on surveys for the Dominion Government in 1881 and 1882, and in 1883 he entered the Department of the Interior's lumber and mines branch at Ottawa, Ont., becoming chief clerk, July 1, 1898. He was appointed Land Commissioner, Grand Trunk Pacific Ry., at Winnipeg, in Nov., 1906.

**E. B. Skeels**, formerly Resident Engineer, C.P.R., Lethbridge, Alta., now Superintendent, Bates & Rogers Construction Co., civil engineers and contractors, has been transferred from Cincinnati to Toledo, Ohio, where he has been given charge of the construction of the water and sewer systems for the \$15,000,000 air nitrates plant being built for the Air Nitrates Corporation by the Bates & Rogers Construction Co. He retains charge of the work near Cincinnati on which he was engaged previously until its completion.

**M. W. Bard**, who has been acting as acting Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, Que.,



was born at Walnut, Bureau County, Ill., June 27, 1871, and entered railway service, Jan. 8, 1890, since when he has been, to Aug. 2, 1901, freight brakeman, Chicago, Burlington & Quincy Rd.; Aug. 2, 1901, to Aug. 1, 1913, freight conductor, same road; Aug. 1, 1913, to 1914, passenger conductor, same road; 1914 to Jan. 24, 1916, Trainmaster, Construction Department, same road; Jan. 24, 1916, to Oct., 1918, Assistant Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, Que.

**Karl Fritjof Nystrom**, who has been appointed chief draftsman, Chief Mechanical Engineer's office, C.P.R., Montreal, was born in Sweden, Sept. 2, 1881, and came to North America in 1905, since when he has been, to 1908, draftsman, Pressed Steel Car Co., Pittsburg, Pa.; 1908 to 1909, draftsman, Pullman Co., Chicago, Ill.; 1909 to 1911, designing engineer, Southern Pacific Co., San Francisco, Cal.; 1911 to 1912, Assistant Mechanical Engineer, American Car & Foundry Co., St. Charles, Mo.; 1912 to 1913, Mechanical Engineer, Acme Supply Co., Chicago, Ill.; 1913 to 1918, chief draftsman, Car Department, G.T.R., Montreal.

**A. D. MacTier**, who has been appointed Vice President in charge of C.P.R. lines east of Port Arthur, Ont., at Montreal, was born at Blairgowrie, Scotland, Dec. 27, 1867, and entered C.P.R. service in May, 1887, since when he has been, to Apr., 1896, successively, in General Baggage Agent's office, General Superintendent's office, Superintendent Sleeping, Dining and Parlor Car Stores, and Car Service Departments; Apr., 1896, to Nov., 1899, General Baggage Agent; Nov., 1899, to June, 1907, General Fuel Agent; June, 1907, to Dec. 31, 1912, Assistant to Vice President, Montreal; Dec. 31, 1912, to Oct. 15, 1918, General Manager, Eastern Lines, Montreal.

**B. J. Farr**, who has been appointed Superintendent, Motive Power and Car Department, Grand Trunk Western Lines Rd., Detroit, Mich., under the U.S. Railroad Administration, entered railway service July 1, 1893, with the Central Vermont St. Ry., St. Albans, Vt., as a machinist apprentice, and was subsequently Erecting Shop Foreman, Locomotive Foreman and General Foreman there, resigning in 1907 on his appointment as Master Mechanic, Northern Ry. of Costa Rica. From 1909 to 1914 he served on the Panama Ry. during the construction of the Panama Canal, and on Jan. 1, 1915, was appointed General Foreman, Western Lines, G.T.R., Battle Creek, Mich., and in Oct., 1916, Master Mechanic Battle Creek, Mich.

**Charles Henry Towle**, who has been appointed Assistant Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., was born at Enfield, Me., Apr. 13, 1878, and entered railway service in Oct., 1893, since when he has been, to Feb., 1894, station baggage master, Maine Central Rd., Enfield, Me.; Feb., 1894, to Aug., 1896, freight brakeman, same road, Bangor, Me.; Aug., 1896, to Dec., 1898, freight brakeman, C. P.R., Brownville Jct., Me.; Dec., 1898, to Sept., 1914, freight conductor, same road, Brownville Jct., Me.; Sept., 1914, to Nov., 1915, General Yardmaster, same road, McAdam Jct., N.B.; Nov., 1915, to Oct., 1918, Assistant Superintendent, Brownville Division, New Brunswick District, same road, Brownville Jct., Me.

**Ross Garfield Edwards**, who has been appointed Assistant Superintendent, Windsor Division, Ontario District, C.P.R., London, Ont., was born at Maitland,

Ont., Oct. 10, 1883, and entered C.P.R. service Dec. 24, 1900, since when he has been, to May 31, 1901, caller; May 31, 1901, to July, 1902, checker; July, 1902, to Apr. 14, 1904, yard office clerk; Apr. 14, 1904, to Oct. 21, 1906, chief clerk;



Alfred Price,  
General Manager, Eastern Lines, Canadian Pacific  
Railway.



C. Murphy,  
General Manager, Western Lines, Canadian Pacific  
Railway.

Oct. 21, 1906, to Apr. 5, 1907, yardman and yard foreman; Apr. 5, 1907, to Feb. 11, 1909, Yardmaster; Feb. 11, 1909, to May 31, 1915, General Yardmaster, all at Smiths Falls, Ont.; May 31, 1915, to Nov., 1917, Assistant Superintendent, Montreal

Terminals Division, Quebec District, Montreal; Nov., 1917, to Oct., 1918, Assistant Superintendent, Trenton Division, Ontario District, Havelock, Ont.

**Lord Southborough, G.C.B., G.C.M.G., G.C.V.O.**, has been elected a director of the Grand Trunk Ry. Co., in place of the late Col. F. Firebrace. Better known as Sir Francis Hopwood, he was associated with the British Board of Trade from 1885 until his recent retirement. He was appointed Secretary to the Railway Department in 1893, and has visited Canada, Newfoundland and the U.S. on various missions. He founded the hospital and medical service for Canadian and Newfoundland fishermen, and was a British delegate to the International Railway Congress in London in 1895, and Paris in 1900. He has been a member of numerous royal commissions, including those on London traffic, shipping rings, canals, etc., and was on the staff of the Prince of Wales, now King George, on his visit to Canada in 1908.

**Edward W. Beatty, K.C.**, who has been elected President, C.P.R., Montreal, was born at Thorold, Ont., Oct. 16, 1877. He was educated at the Model School, and Harbord Collegiate Institute, Toronto, and the University of Toronto, graduating in 1898. He served his articles with the late D'Alton McCarthy, of McCarthy, Osler, Hoskin & Creelman, Toronto, and was admitted to the bar in 1901. On the appointment of A. R. Creelman, as Chief Solicitor, C.P.R., he accompanied him to Montreal, and was appointed Assistant Solicitor, Jan. 1, 1905; General Solicitor, Mar. 1, 1910; General Counsel, June, 1913, and Vice President and General Counsel, Dec., 1914. He is a son of the late Henry Beatty, at one time Manager, Upper Lakes Steamships, C.P.R., Toronto, and Dr. H. A. Beatty, Chief Surgeon, Ontario District, C.P.R., Toronto, is a brother.

**William Allan Mather**, who has been appointed General Superintendent, Manitoba District, C.P.R., Winnipeg, was born at Oshawa, Ont., September, 1885, entered C.P.R. service in May, 1903, and during the summers of 1903, 1905, 1906 and 1908, acted as axeman, tapeman, rodman and instrument man, at Rush Lake and Deception, Ont.; Apr. 1 to Oct. 1, 1909, instrument man, Kenora, Ont.; Oct. 1, 1909, to Jan. 1, 1910, transit man, Laggan, B.C.; Mar. 15, 1910, to Mar. 1, 1912, Resident Engineer, Winnipeg and Portage la Prairie, Man.; Mar. 1, 1912, to Jan. 1, 1913, acting Superintendent, Kenora, Ont.; Jan. 1, 1913, to Jan. 1, 1915, Superintendent, Kenora, Ont.; Jan. 1 to June, 1915, Superintendent, District 1, Alberta Division, Medicine Hat, Alta.; June, 1915, to Oct., 1918, Assistant General Superintendent, British Columbia District, Vancouver.

**Arthur Crumpton**, who has been appointed Valuation Engineer, G.T.R., Montreal, was born at Toronto, Jan. 1, 1869, and entered G.T.R. service, Jan. 25, 1889, since when he has been, to 1892, rodman and draftsman, Maintenance of Way, field and office work, bridge renewals, and branch line construction, Northern and Northwestern Division, Toronto. Allandale and Hamilton, Ont.; 1893 to 1895, Assistant Engineer, Great Western Division, Hamilton, Ont.; 1896 to 1901, Assistant Engineer, field and office work in connection with the permanent renewal of 300 bridges between the Atlantic and the Detroit River; 1902 to 1906, Assistant Engineer, Montreal; 1907 to 1915, on location surveys for new lines in Indiana, Michigan, Ontario, Quebec, Massachusetts and New York State; 1916 to Oct., 1918,



Assistant Valuation Engineer, lines in Maine, New Hampshire, Vermont, New York, Indiana and Illinois.

**C. Murphy**, who has been appointed General Manager, Western Lines, C.P.R., Winnipeg, was born at Prescott, Ont., Nov. 20, 1865, and entered C.P.R. service in 1883, since when he has been, to 1885, operator; 1885 to 1890, chief operator and dispatcher; 1890 to 1899, Chief Dispatcher, Ottawa, Ont.; 1899 to June, 1900, acting Superintendent, Chapleau, Ont.; June, 1900, to 1902, Superintendent, Chapleau, Ont.; 1902 to Nov., 1903, Superintendent, North Bay, Ont.; Nov., 1903, to Feb., 1908, Superintendent, District 2, Ontario Division; Feb. to June, 1908, relieving General Superintendent, North Bay, Ont.; and at Montreal; June, 1908, to Sept. 30, 1910, General Superintendent, Eastern Division, Montreal; Sept. 30, 1910, to July 15, 1913, General Superintendent of Transportation, Eastern Lines, Montreal; July 15, 1913, to Oct. 15, 1918, General Superintendent, Manitoba District, Winnipeg.

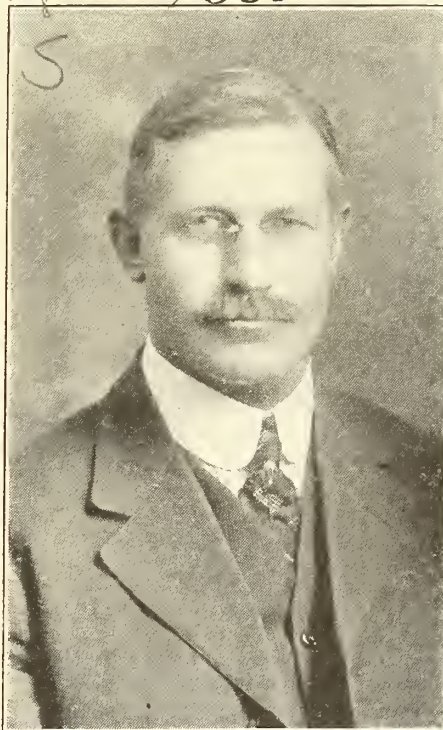
**J. K. Savage**, who has been appointed Assistant General Superintendent, Ontario District, C.P.R., Toronto, was born at Forreton, Ill., Oct. 5, 1876, and entered C.P.R. service, Mar. 1, 1890, since when he has been, to May 1, 1894, station agent at various points in Quebec; May 1, 1894, to May 24, 1897, dispatcher, Farnham, Que.; Jan. to Sept., 1904, Night Chief Dispatcher, Toronto; Sept., 1904, to Sept., 1906, Inspector Train Dispatching, Western Lines, Winnipeg; Sept., 1906, to Mar. 1, 1907, Chief Dispatcher, District 1, Central Division, Kenora, Ont.; Mar. 1, 1907, to Dec., 1908, Trainmaster, District 3, Central Division, Brandon, Man.; Dec., 1908, to Jan. 1, 1912, Chief Dispatcher, District 3, Central Division, Brandon, Man.; Jan. 1, 1912, to Jan. 1, 1917, Superintendent, Regina Division, Saskatchewan District, Regina; Jan. 1, 1917, to Oct. 15, 1918, Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont.

**George Bradshaw**, whose appointment as Supervisor of Safety under the U.S. Railroad Administration at Detroit, Mich., was announced in our last issue, was born at Franklin, Ky., Sept. 12, 18783, and entered railway service Nov. 17, 1902, since when he has been, to May 1, 1909, Assistant Claim Agent, Chicago & North Western Ry., Chicago, Ill.; May 1, 1909, to Mar. 16, 1913, General Safety Agent, New York Central Lines, New York, N. Y.; Aug. 16, 1913, to Sept. 21, 1918, Safety Engineer, G.T.R. and Grand Trunk Pacific Ry., Montreal, Winnipeg and Toronto. Between Mar. 16 and Aug. 16, 1913, he was engaged in special work as safety engineer. The roads to be covered by him under the U.S. Railroad Administration are: Ann Arbor; Detroit, Bay City & Western; Detroit & Mackinac; Detroit & Toledo Shore Line; Fore St. Union Depot; Grand Trunk Western Lines; Pere Marquette; Port Huron & Detroit; Port Huron Southern, and the Lake Michigan Car Ferry Association.

Senator **H. W. Richardson** was found dead in bed at his home at Kingston, Ont., Oct. 27. He had been in apparent good health, and had been on a shooting trip on the previous day. Heart failure during sleep was given as the cause of death. He was born at Kingston, Ont., in 1855, and was a member of the firm of Jas. Richardson & Sons, Ltd., grain merchants. He was associated with several transportation companies, and at the time of his death, was President, Kingston, Portsmouth & Cataract Electric St. Ry., Kingston; Vice President, Great Lakes

Transportation Co., and director, Midland Shipbuilding Co., Midland, and until his appointment as a Senator, was one of the Government directors of the Canadian Northern Ry. He was a former Vice President, Canadian Lake Protective Association, and was for some time a director of Canada Steamship Lines, Limited. The funeral at Kingston, Oct. 30, was very largely attended, the procession being over a mile long. Among those attending were: Hon. J. D. Reid, Minister of Railways and Canals; J. E. Dalrymple, Vice President, Traffic, G.T.R.; and Jas. Playfair, of Midland, Ont.

**John Robert Caswell**, who has been appointed Division Engineer, C.P.R., London, Ont., was born at Coldwater, Ont., Apr. 13, 1891, and entered transportation service in 1907, and during the summers of 1907, 1908 and 1909, served as chairman in the Construction Department, C.P.R., working on the Toronto-Sudbury



**C. W. Van Buren**, General Master Car Builder, Canadian Pacific Railway, who was killed in an automobile accident, near Albany, N.Y., Aug. 24. For biographical data, see September issue, page 394.

Branch; Apr., 1910, to Sept., 1911, chainman, Maintenance of Way Department, C.P.R., Toronto; Sept., 1911, to Sept., 1912, rodman and instrument man, Construction Department, C.P.R., working on the Georgian Bay and Seaboard Ry., South Ontario Pacific Ry.; Sept., 1912, to Dec., 1914, transit man, Forsyth St. Branch, C.P.R., Montreal; Dec., 1914, to Oct., 1915, transit man, Lake Erie and Northern Ry., Simcoe, Ont.; Oct., 1915, to Sept., 1916, chief of an engineering party, Westinghouse, Church, Kerr Co., Drummondville, Que.; Sept. to Nov., 1916, chief of an engineering party, Foundation Co., Port Colborne, Ont.; Nov., 1916, to Apr., 1917, transit man, Hydro Electric Power Commission of Ontario, Niagara Falls, Ont.; Apr. to Dec., 1917, transit man, C.P.R., London, Ont.; Jan. to Sept., 1918, transit man, Hydro Electric Power Commission of Ontario, Niagara Falls, Ont.

**H. E. Bissell**, who has been appointed Land and Tax Agent, Grand Trunk Pacific Ry., Winnipeg, was born near Noyan,

Que., Dec. 31, 1867, and entered railway service in Oct., 1887, since when he has been, to May, 1888, baggage master, freight house foreman and manifest clerk, G.T.R. and Delaware & Hudson Co., Rouses Point, N.Y.; May to Nov., 1888, Assistant Yardmaster, Central Vermont Ry. and Ogdensburg & Lake Champlain Rd., Rouses Point, N.Y.; Nov., 1888, to Dec., 1889, billing clerk, same roads, Rouses Point, N.Y.; Dec., 1889, to Nov., 1892, chief clerk and cashier, same roads, Rouses Point, N.Y.; Nov., 1892, to Apr., 1894, station agent, same roads and Canada Atlantic Ry., Rouses Point, N.Y.; Apr., 1894, to May, 1900, in private business; June, 1900, to May, 1904, in General Auditor's office, Central Vermont Ry., St. Albans, Vt.; May, 1904, to Feb., 1907, chief clerk of general accounts, same road, St. Albans, Vt.; Feb., 1907, to Apr. 1, 1911, chief clerk to Chief Engineer, Grand Trunk Pacific Ry., Montreal; Apr. 1, 1911, to Jan. 1, 1912, Assistant Right of Way and Claims Agent, same road, Winnipeg; Jan. 1, 1912, to Oct. 1, 1918, Right of Way and Claims Agent, same road, Winnipeg.

**Charles Ernest Stockdill**, who has been appointed Assistant to Vice President, Western Lines, C.P.R., Winnipeg, was born at London, Ont., Oct. 25, 1881, and entered C.P.R. service July 1, 1899, since when he has been, to Feb. 1, 1900, clerk, Roadmaster's office, London, Ont.; Feb. 1, 1900, to Apr. 30, 1901, clerk in Superintendent's office, London, Ont.; May 1, 1901, to June 15, 1903, secretary to General Superintendent, North Bay, Ont.; June 15, 1903, to Sept. 23, 1904, chief clerk to Master Mechanic, North Bay, Ont.; Sept. 24, 1904, to July 12, 1905, chief clerk to Superintendent, Winnipeg; July 12, 1905, to Feb. 28, 1907, chief clerk to General Superintendent, Calgary, Alta.; Mar. 1 to Dec. 1, 1907, assistant chief clerk to Assistant General Manager, Winnipeg; Dec. 1, 1907, to Sept. 30, 1908, assistant chief clerk to Second Vice President, Winnipeg; Oct. 1, 1908, to Aug. 9, 1910, chief clerk to Second Vice President, Winnipeg; Aug. 9, 1910, to Oct. 1, 1911, chief clerk to General Manager, Winnipeg; Oct. 1, 1911, to Dec. 31, 1914, chief clerk to Vice President and General Manager, and then to Vice President, Winnipeg; Dec. 31, 1914, to Oct. 15, 1918, Assistant to Vice President and General Manager, Western Lines, Winnipeg.

**D'Alton Corry Coleman**, who has been appointed Vice President in charge of C.P.R. lines west of Port Arthur, Ont., at Winnipeg, was born at Carleton Place, Ont., July 9, 1879, and entered C.P.R. service Nov. 4, 1899, since when he has been, to Jan. 11, 1900, stenographer, Assistant Engineer's office, Fort William, Ont.; Jan. 11 to July 1, 1900, secretary to Superintendent, Fort William, Ont.; July 1 to Sept. 22, 1900, Secretary to General Superintendent, Winnipeg; Sept. 22, 1900, to Feb. 1, 1901, secretary to Superintendent, Fort William, Ont.; Feb. 1, 1901, to June 1, 1902, chief clerk, Superintendent's office, Cranbrook, B.C.; June 1, 1902, to Feb. 15, 1904, chief clerk and accountant, General Superintendent's office, North Bay, Ont.; Feb. 15, 1904, to Mar. 1, 1907, chief clerk, General Superintendent's office, Winnipeg; Mar. 1 to June 1, 1907, chief clerk, Assistant General Manager's office, Winnipeg; June 1, 1907, to Dec. 1, 1908, Superintendent, Nelson, B.C.; Dec. 1, 1908, to Apr. 1, 1912, Superintendent Car Service, Western Lines, Winnipeg; Apr. 1, 1912, to July 15, 1913, General Superintendent, Manitoba Division, Winnipeg; July 15, 1913, to Dec., 1914, Gen-



eral Superintendent, Alberta Division, Edmonton, Alta.; Dec., 1913, to Oct. 15, 1918, Assistant General Manager, Western Lines, Winnipeg.

**Rt. Hon. Lord Shaughnessy, K.C.V.O.**, who has retired from the Presidency of the C.P.R., but who retains the position of Chairman of the company, was born at Milwaukee, Wis., Oct. 6, 1853, and entered railway service in July, 1869, since when he has been, to Jan., 1879, in Purchasing Department, Chicago, Milwaukee & St. Paul Rd.; Jan., 1879, to Oct., 1882, General Storekeeper, same road; Oct., 1882, to Jan., 1884, General Purchasing Agent, C.P.R., Montreal; Jan., 1884, to Sept., 1885, Assistant to General Manager; Sept., 1885, to Sept., 1889, Assistant General Manager; Sept., 1889, to June 24, 1891, Assistant President; June 24, 1891, to June 12, 1899, Director and Vice President; June 12, 1899, to Oct. 15, 1918, President, C.P.R., and from May 9, 1910, also Chairman of the company. He was a delegate to the International Railway Congress in 1905, and was knighted by King Edward in 1901, and created a Knight Commander of the Royal Victorian Order in 1907. He is a Knight of Grace of the Order of St. John of Jerusalem, and holds the decoration of the Order of the Sacred Treasury of Japan, of the second class. He was created a baron of the United Kingdom, Jan. 1, 1916, with the title of Baron Shaughnessy of Montreal, Canada, and of Ashford, Ireland.

**Alfred Price**, who has been appointed General Manager, Eastern Lines, C.P.R., Montreal, was born at Toronto, Dec. 6, 1861, and started work in 1875, as messenger, Montreal Telegraph Co., Toronto. He entered railway service in Sept., 1879, since when he has been, to 1881, operator and clerk, Credit Valley Ry.; 1881 to 1882, car accountant, same road, Toronto. He remained with the C.P.R. when that company took over the Credit Valley Ry., and from 1882 to 1884 was operator and relief dispatcher, Toronto; 1884 to July, 1888, dispatcher, Toronto; July, 1888, to May, 1896, car distributor, Toronto; May, 1896, to Aug., 1898, car distributor and Chief Dispatcher, Toronto; Aug., 1898, to May, 1901, Superintendent, Toronto; May, 1901, to Sept., 1902, Superintendent, Districts 8 and 9, Toronto; Sept., 1902, to May, 1903, Superintendent, Districts 10 and 11, Toronto; May, 1903, to 1905, Superintendent, Fort William, Ont.; 1905, to Feb., 1907, Superintendent of Transportation, Western Lines, Winnipeg; Feb. to Dec., 1907, General Superintendent, Central Division, Winnipeg; Dec., 1907, to July, 1910, General Superintendent, Western Division, Calgary, Alta.; July, 1910, to July, 1914, General Superintendent, Alberta Division, Calgary, Alta.; July, 1913, to Oct. 15, 1918, Assistant General Manager, Eastern Lines, Montreal.

**Malcolm H. MacLeod**, who has been appointed Vice President in charge of construction, maintenance and operation, all lines, Canadian Northern Ry., Toronto, was born in Skye, Invernesshire, Scotland, July 13, 1857. His railway record is as follows: 1877, chainman, Victoria Ry., Ont.; 1879 to 1880, rodman and leveler, Credit Valley Ry.; 1881, transitman location surveys, Ontario & Sault Ste. Marie Ry.; 1882, resident engineer, construction Toronto & Ottawa Ry.; 1883 to 1885, assistant engineer, construction Lake Superior Section C.P.R.; 1886, on location and construction C.P.R. lines east of Montreal; 1887, on construction C.P.R., Sault Ste. Marie branch; 1888 to 1889, locating engineer, and in charge of

construction, Windsor division, C.P.R.; 1890, locating engineer, Calgary & Edmonton Ry.; 1891, revision surveys C.P.R. and locating Niagara Falls, Park & River Ry.; 1892, revision surveys C.P.R., Chalk River to Sudbury; 1892 to 1895, Chief Engineer Lake Temiscamingue Colonization Ry.; 1896, division engineer, construction, Montreal & Ottawa Short Line, C.P.R.; 1897 to 1900, locating engineer, assistant chief Superintending Engineer, and Chief Engineer and Superintendent, Crows Nest Branch, C.P.R.; May, 1900, to 1907, Chief Engineer, and from 1907 to Oct., 1918, General Manager and Chief Engineer, Western Lines, Canadian Northern Ry., Winnipeg.

**Sir George Bury**, who has resigned the Vice Presidency of the C.P.R., was born at Montreal, Mar. 6, 1886; and entered C.P.R. service in 1883, since when he has been, to 1887, clerk in Purchasing Department, and in General Manager's office; 1887 to 1889, secretary to Vice President, and afterwards to President; 1889 to Mar., 1890, acting Superintendent, Sleeping, Dining and Parlor Car Service; Mar., 1890, to Sept., 1899, successively, Assistant Superintendent, Chalk River, Ont., and Superintendent, North Bay, Ont.; Sept., 1899, to Feb., 1901, Superintendent, Fort William, Ont.; Feb., 1901, to Feb., 1902, Superintendent, Crowsnest Pass Line, Cranbrook, B.C.; Feb. to May, 1902, Assistant General Superintendent, Lake Superior Division, North Bay, Ont.; 1905 to Feb., 1907, General Superintendent, Central Division, Winnipeg; Feb., 1907, to Mar. 1, 1908, Assistant General Manager, Western Lines, Winnipeg; Mar. 1, 1908, to Oct., 1911, General Manager, Western Lines, Winnipeg; Oct., 1911 to Dec., 1913, Vice President and General Manager, Western Lines, Winnipeg; Dec. 1912, to Dec., 1914, Vice President in charge of Western Lines, Winnipeg; Dec., 1914, he was appointed Vice President of the Company, Montreal, and also elected a director and member of the executive committee. He was created a Knight Bachelor on the recommendation of the British Prime Minister, June 3, 1917, subsequent to a visit to Russia in connection with the proposed improvement of railway lines there. This work was nullified later by the revolution, which commenced while he was in Petrograd.

**Allan Purvis**, who has been appointed General Superintendent, Ontario District, C.P.R., Toronto, was born at Batavia, Java, June 29, 1878, and was educated at the Merchant Taylor's School, Liverpool, Eng. He entered C.P.R. service in Vancouver, B.C., at an early age, and was from Aug., 1890, to Feb., 1891, messenger, Stores Department; Feb. to Nov., 1891, storeman; Nov., 1891, to Sept., 1892, junior clerk, Vancouver, B.C.; Sept., 1892, to Aug., 1893, timekeeper, Donald, B.C.; Aug., 1893, to Oct., 1894, clerk, Vancouver, B.C.; Oct., 1894, to Mar., 1895, assistant storekeeper, North Bend and Kamloops, B.C.; Mar., 1895, to Sept., 1896, clerk and operator, Car Service and Fuel Department, Vancouver, B.C.; Sept., 1896, to Jan., 1899, Chief Clerk, Fuel Department, Vancouver, B.C.; Jan., 1899, to Feb., 1908, chief clerk to General Superintendent, Pacific Division, Vancouver, B.C.; Feb. to Nov., 1908, Superintendent, District 4, Central Division, Souris, Man.; Nov., 1908, to Oct., 1909, Superintendent, District 3, Pacific Division, Nelson, B.C.; Oct., 1909, to Oct., 1911, Local Manager, Fraser Valley Branch, British Columbia Electric Ry., Vancouver, B.C.; May, 1912, to Feb., 1915, Manager of Interurban Lines, same company, New Westminster,

B.C.; May, 1915, to May 1, 1916, Superintendent, District 2, Ontario Division, C. P.R., London, Ont.; May 1 to Nov. 1, 1916, General Superintendent, Eastern Division, C.P.R., Montreal; Nov. 1, 1916, to Feb. 1, 1917, acting General Superintendent, Ontario District, Toronto; Feb. 1, 1917, to Oct. 15, 1918, General Superintendent, Quebec District, Montreal.

**L. C. Fritch**, who has been elected Vice President, the Chicago, Rock Island & Pacific Ry. Co., and also Vice President, Minneapolis & St. Louis Rd. Co., with office at La Salle St. Station, Chicago, was born at Springfield, Ill., Aug. 11, 1869. He took a course in civil engineering at the University of Cincinnati, and subsequently a law course, and was admitted to the Ohio bar in 1899. He entered railway service in 1884 as supervisor's assistant, Ohio & Mississippi Ry., and was from Jan. 1, 1886, to Oct., 1892, Assistant Engineer, same road; Oct., 1892, to Nov. 1, 1893, Engineer, Maintenance of Way, same road; and was also Construction Engineer in charge of construction, Cincinnati & Bedford Ry.; Nov. 1, 1893, to Sept. 1, 1899, Division Engineer, Baltimore & Ohio Southwestern Rd., which absorbed the Ohio & Mississippi Ry.; Sept. 1, 1899, to Nov., 1902, Superintendent, Mississippi Division, same road; Feb., 1904, to Mar. 1, 1905, engaged on special work, Illinois Central Rd., Chicago, Ill.; Mar. 1, 1905, to Nov., 1906, Assistant to General Manager, same road; Nov., 1906, to Mar. 1, 1909, Assistant to President, same road; Mar. 1 to Nov. 15, 1909, Consulting Engineer, same road; Nov. 15, 1909, to Mar. 31, 1914, Chief Engineer, Chicago Great Western Rd., Chicago, Ill.; Mar. 31, 1914, to Aug., 1915, Assistant to President, Canadian Northern Ry., Toronto, and from Aug., 1915, to June 1, 1917, General Manager, Eastern Lines, same road, Toronto; June 1, 1917, to Oct., 1918, General Manager, Seaboard Air Line Ry., Norfolk, Va.

**G. W. Vaux**, formerly General Passenger Agent, G.T.R., Montreal, and for several years General Agent, Union Pacific Rd., Chicago, has ceased to hold the latter position, the office having been discontinued. He has been appointed General Manager, Zeigler Co., Zeigler, Ill.

### Grain Inspected at Western Points.

The following figures compiled by the Trade and Commerce Department's Bureau of Statistics, show the number of cars of grain inspected on railways at Winnipeg and other points in the Western Division, for Sept., 1918 and 1917:

	Sept. 1918 bush.	Sept. 1917 bush.
C.P.R. ....	5,260	9,794
C.N.R. ....	4,122	6,619
G.T.P.R. ....	811	1,897
G.N.R. (Duluth).....	196	196
Totals .....	10,389	18,506

**Curtail Railway Travelling.**—A Winnipeg press dispatch of Oct. 23 credits E. W. Beatty, President, C.P.R., with stating there that he wished to urge upon the public the advisability of curtailing all unnecessary railway travelling during the prevalence of the influenza epidemic. The eastern section of the C.P.R. has already been very seriously handicapped, many of the employees being down with the disease, he said, and concluded: "It may be necessary to reduce the number of passenger trains. This will mean very much closer packing of passengers in cars. No person, not absolutely obliged to travel, should increase the burden already being borne by the railway service."



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TORONTO, CANADA, NOVEMBER, 1918.

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## Canada's Paramount Duty.

Canada is calling on her people to over-  
subscribe the Victory Loan of 1918 as an  
imperative duty that cannot and must not  
be shirked. The reasons are plain to  
everyone.

Great Britain, having borne tremendous  
burdens, cannot be expected to finance her  
war purchases in this country. The  
United States is perfecting a vast war  
machine. Her financial resources are re-  
quired for that purpose. It is necessary,  
therefore, that Canada should raise with-  
in her borders the funds required, not  
only to carry on our normal and war  
activities, but also to advance substantial  
sums to Great Britain for her purchases  
here.

While in the United States the people  
have been asked to subscribe a Liberty  
Loan every few months, we, in Canada,  
have not been asked to subscribe a war  
loan since Nov., 1917. This is an enor-  
mous advantage in every way. The long  
respite from war loan activities has en-  
abled the 1917 Victory Loan to be splen-  
didly absorbed and distributed, and has  
allowed business to proceed without the  
temporary halt which war loan issues  
usually bring.

The maintenance of the market price  
of the 1917 Victory Loan at the issue  
price, and even higher, shows the gilt-  
edged nature of the security and furn-  
ishes a record in war finance. The pur-  
chase of war loan bonds is a duty; a duty  
that ensures profit.

Canadian Railway and Marine World  
has no hesitation in urging its readers  
to put every dollar they can into the  
Victory Loan now offered. Its proprietors  
have subscribed, to the utmost of their  
ability, to all the Canadian war loans  
which have been issued, including the  
present one. Altogether outside of the  
patriotic duty that devolves on every citi-  
zen, they believe that there is no other  
security available which offers so abso-  
lutely safe an investment and at such a  
satisfactory rate of interest.

## Canadian Northern Ry's Montreal- Toronto Passenger Service.

The C.N.R.'s temporary passenger  
station on Lagachetiere St., Montreal,  
which was described and illustrated in  
Canadian Railway and Marine World for  
October, and also the Mount Royal Tun-  
nel having been completed, through pas-  
senger service between Montreal and To-  
ronto via Ottawa was started Oct. 20,  
when the first train eastbound left Toron-  
to at 11 p.m., having on board R. C.  
Vaughan, Assistant to the President, and  
a number of other officials. The first  
through train westbound left Montreal  
Oct. 21, at 8.15 a.m.

The service consists of two trains a day  
each way, as follows:—

Westbound.			
Leave Montreal .....	8.15 a.m.	6.15 a.m.	
Arrive Ottawa .....	12.15 p.m.	10.15 p.m.	
Leave Ottawa .....	12.45 p.m.	10.45 p.m.	
Arrive Toronto .....	9.45 p.m.	7.30 p.m.	
Eastbound.			
Leave Toronto .....	10.00 a.m.	11.00 p.m.	
Arrive Ottawa .....	6.30 p.m.	7.30 p.m.	
Leave Ottawa .....	7.00 p.m.	8.00 a.m.	
Arrive Montreal .....	11.00 p.m.	12 noon.	

The trains leaving Montreal and To-  
ronto in the evening run daily. Those  
leaving both places in the morning do  
not run on Sundays. The evening train  
from Montreal for Toronto carries a  
standard sleeping car, and a cafe parlor  
club car, for Toronto, and at Ottawa  
takes on another standard sleeping car  
and a compartment sleeping car. The

night train from Toronto carries standard  
sleeping and compartment sleeping cars  
for Ottawa, and a cafe parlor club car  
and a standard sleeping car for Montreal.  
The trains leaving Montreal and Toronto  
in the morning carry through parlor and  
dining cars.

The distance by the new route is:  
Montreal to Ottawa, 113.75 miles; Otta-  
wa to Toronto, 257.4 miles. Total, 371.15  
miles. The other companies' distances  
are: G.T.R., 333.04 miles; C.P.R., via  
Peterborough, 338.5 miles; C.P.R., via  
Lake Ontario Shore Line, 340.5 miles.

Between Montreal station and Cartier-  
ville, 7.3 miles, including the tunnel sec-  
tion, the trains are hauled by electric  
locomotives.

## Unconfirmed Press Reports.

That Hon. J. D. Reid, Minister of Rail-  
ways, is to retire from the Dominion  
Government, on account of ill health, and  
that he will be appointed a senator.

That Hon. Clive Pringle will resign  
from the Senate, and be appointed Gen-  
eral Counsel, Canadian Government Rail-  
ways.

That A. W. Campbell, ex-Deputy Min-  
ister of Railways and Canals, Ottawa,  
now on a year's leave of absence, will be  
appointed Commissioner for Good Roads,  
for the Dominion Government, with the  
rank of a deputy minister.

That the Board of Railway Commis-  
sioners is considering the question of  
ordering table d'hôte meals to be served  
on railway dining cars at fixed prices, as  
the U.S. Railroad Administration has  
done.

## Canadian Government Railways Construction, Betterments, etc.

Prince Edward Island Ry.—See under  
"Standardizing the P.E.I. Ry.," on an-  
other page of this issue.

Halifax Ocean Terminals.—We are offi-  
cially advised that the construction of  
certain works and buildings of a more or  
less temporary character at the Halifax  
Ocean Terminals is progressing favor-  
ably, and that it is expected that these  
will be completed by Dec. 1. Following  
are the works in progress:—Temporary  
station, mail, baggage, express and com-  
missariat buildings, in the shape of an L,  
the station proper being 174 x 80 ft., and  
the baggage, mail, express and commis-  
sariat part being 240 x 50 ft.; a car clean-  
ing shop, stores and ice house building,  
382 x 51 ft. The passenger tracks in con-  
nection will have storage capacity for 170  
cars, and the freight tracks will have  
storage capacity for 730 cars. In addi-  
tion, there will be a team yard which will  
have tracks for 50 cars, for loading and  
unloading. Water and gas systems are  
being provided, and in the passenger  
yards there will be installed the regular  
gas, air and heating pipes.

Sackville to Cape Tormentine.—The  
work of replacing ties and reballasting  
this branch line is reported to have been  
completed during the summer.

Tenders for new buildings.—Tenders  
are under consideration for the erection  
of a wooden stores building at Campbell-  
ton, N.B., and for the erection of a wood-  
en car shop at Edmundston, N.B.

Long Wharf, St. John.—Work is re-  
ported to have been started by D. C. Clark  
on repairs to the Long Wharf, at St.  
John, N.B., on which the Intercolonial Ry.  
has tracks and a shed. The work is being  
done in preparation for the heavy winter  
traffic. (Oct., pg. 437.)



## Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

**Canadian Engineers at Cambrai.**—The Canadian Press special correspondent with the Canadian forces at the front in cabling on Oct. 10 about the capture of Cambrai, said:—"Among the brilliant episodes of the final assault was the gallant act of a captain of Canadian Engineers who comes from Winnipeg. He was reconnoitering, early yesterday morning, the crossing of the Scheldt River, which it was of the utmost importance we should make in good order to close our northern end of the pincers down upon the southern end created by the fine advance of the Imperial troops south of Cambrai. The river here has three distinct arms, traversed by three bridges. He found that the enemy had destroyed the first bridge and were about to destroy the second. Unaided, he charged them, shooting down five boches and saving the bridge.... The Canadian Engineers established a pontoon bridge over the canal at 6 o'clock."

**Canadian Government Railway Employees on active service.**—Out of the approximately 20,000 employees in Canadian Government Railways service, 1,630 have enlisted in the Canadian Expeditionary Forces, a percentage of 8.15. Of these, 11 died while training, 78 were killed in action and 5 were posted as missing.

**Canadian Pacific Ocean Services, Ltd.,** has been conducting numerous trips on the Avon at Bristol, and the Mersey at Liverpool, Eng., for wounded soldiers, which have been much enjoyed by those taking part in them. The arrangements for taking the men to and from the company's vessels are made by the enquiry bureau, and sports are conducted on board and prizes given. A band accompanies the men, and everything is done to make the trip thoroughly enjoyable. The whole arrangements are supervised by Major H. Maitland Kersey, D.S.O., the company's Managing Director.

**Canadian Railway Troops,** drafts 157 and 169 from Niagara on the Lake, Ont.; draft 173 from Toronto, and draft 174 from St. John, N.B.; and Engineers, drafts 158 and 172 from Brockville, Ont., have arrived safely in England.

**Canadian Railway Troops' Work.**—A Canadian Association Press dispatch of Oct. 1 says:—"In the fighting which followed the fall of the Drocourt system on the Western front, the motor and horse ambulances had more than they could handle at times. So the Canadian railway troops rushed up flat cars, loaded the wounded on them and made several trips to the field ambulance stations until the congestion was reduced. Steel laying and maintenance gangs did temporary duty as stretcher bearers from the regimental aid posts and advanced dressing stations to the railway cars. Meanwhile there was no interference with the scheduled service of work and supply trains. At present light railways and tramways are threaded through different points close to the Nord Canal, and are saving

the use of a great deal of motor and horse transport. So efficient has been the service rendered in the Arras area, that the army and corps commanders have expressed their thanks to the Canadian railway troops, and been generous with encomiums."

The Canadian Railway Troops are reported to have built over 100 miles of line, extending back as far as 10 miles, since Aug. 21.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association had, up to the last report, contributed \$92,748.41 to the Canadian Red Cross and Canadian Patriotic Association funds.

### PERSONAL NOTES.

**Major H. G. Barber,** Edmonton, Alta., of the Canadian Railway Troops, has been awarded the Distinguished Service Order for conspicuous gallantry and devotion to duty while supervising light railways. Under his supervision valuable stocks of light railway material and coal were salvaged, maintenance work was carried out, and railway lines patrolled up to the last possible moment. The good work performed by his men was largely due to his coolness, perseverance and inspiring example, while frequently under fire night and day.

**Corporal G. E. Bayliss,** Canadian Overseas Railway Construction Corps, has been awarded the Distinguished Conduct Medal, for conspicuous gallantry and devotion to duty in maintaining and repairing a track, which was continuously under shell fire. It was largely due to his skill and untiring energy that nine railway mounted guns and howitzers were successfully removed. He controlled his men with great coolness, working continuously for 45 hours.

**Lieut. A. J. Easterbrook,** reported wounded in the leg, was, prior to going overseas, on the C.P.R. office staff at Moose Jaw, Sask. He enlisted on the outbreak of the war, and went to France as a sergeant in the Princess Patricia of Connaught's Light Infantry. He was wounded in the neck with shrapnel last year, and this year was awarded a commission on the field.

**Acting Sergeant W. G. Geron,** Railway Troops, has been awarded the Distinguished Conduct Medal for conspicuous gallantry and devotion to duty in emergency work on light railway lines in forward areas under intense hostile fire. On one night he personally supervised the repair of 43 shell breaks, requiring nearly 1,400 ft. of new steel, and kept the light railway lines open for traffic. He was in charge of a party working for three hours in gas masks, sending forward urgently required ammunition. His courage and example in these and other instances were an inspiration to those working with him.

**Lieut. R. S. Johnston,** a civil engineer, loaned by the U.S. Government for duty in connection with the erection of naval air stations on the Canadian coast, died at the residence of Admiral Sir C. E. Kingsmill, Ottawa, Ont., Oct. 14, from influenza.

**Lieut.-Col. W. B. Kingsmill,** D.S.O., who went overseas in command of the 123rd Battalion, about two years ago, has returned home on three months leave. He is a member of the firm of Saunders, Torrance & Kingsmill, Solicitors in Canada for the Michigan Central Rd.

**Capt. Albert H. Kendall,** who has been

awarded the Military Cross, for superintending evacuation under heavy fire and keeping lines running until the last moment, went overseas early in 1917, as Captain, No. 1 Section, Skilled Railway Employees, and is now with the 58th Broad Gauge Operating Company, British Expeditionary Force in France. He was born at Aspatria, Cumberland, Eng., Apr. 4, 1878, and completed his apprenticeship in the Canada Atlantic Ry. shops at Ottawa, Ont., in June, 1910, since when he has been, to Mar., 1902, machinist, C.P.R., Revelstoke, B.C.; Mar., 1902, to Jan., 1903, Locomotive Foreman, C.P.R., Nakusp, B.C.; Jan. to Dec., 1903, General Foreman, C.P.R., Revelstoke, B.C.; Dec., 1903, to Dec., 1904, Locomotive, G.T.R., London, Ont.; Dec., 1904, to Dec., 1913, leading hand, General Erecting Foreman, Angus Shops, C.P.R., Montreal; Dec., 1913, to Aug., 1915, General Foreman, C.P.R., North Bay, Ont.; Apr., 1915, to Aug., 1916, Assistant Works Manager, Locomotive Shop, Angus Shops, C.P.R., Montreal; Aug., 1916, to Jan., 1917, Master Mechanic, Ontario District, C.P.R., Toronto.

**Lieut.-Col. Hon. Angus McDonnell,** of the Canadian Railway Troops, and formerly of Grant, Smith & McDonnell, Ltd., railway and general contractors, Vancouver, B.C., has been made a Companion of the Order of St. Michael and St. George.

**Corporal W. S. McNab,** reported to have been wounded a second time, is a son of W. McNab, Chairman, Valuation Committee, G.T.R., Montreal. Two other sons are in active service in France.

**Sergeant J. A. McPhail,** Railway Troops, has been awarded the Distinguished Conduct Medal. Alone under heavy shell fire he patrolled his district and repaired many blowouts. Owing to his good work the track was kept open and passage allowed for 26 trains containing ammunition and other supplies.

**Edmond George Moorhead,** a recent recruit in the Royal Air Force, died at the Base Hospital, Toronto, Oct. 14. He was born Feb. 10, 1896, and entered C.P.R. service as junior clerk, Superintendent's office, London, Ont., Apr. 1, 1912, and after various changes was appointed secretary to the Vice President (Sir George Bury), May 17, 1917, and on July 1, 1918, was appointed assistant chief clerk, Vice President's office, and was given leave of absence, Oct. 1, for military service.

**Major E. F. Pullen,** Haileybury, Ont., of the Canadian Railway Troops, has been awarded the Distinguished Service Order, for energy and devotion to duty displayed while commanding his company throughout the operations, which were a conspicuous example to his men, whom he has led, and whose work he has organized in the forward area. On two different occasions he rallied considerable numbers of stragglers from other units, and leading them back to the front, placed them again under their officers and warrant officers, and their services, when badly wanted, were instrumental in defeating the enemy. His complete disregard of personal safety had a most inspiring effect on his men, and his intelligent dispositions, often under heavy fire, enabled him to keep his line open as long as it was required, and much material was saved.

**C. E. Payne,** chief clerk, Freight Department, Canadian Northern Ry., Fort



William, Ont., was presented with a gold wrist watch by the local staff recently, on leaving to take up military service under the United States draft regulations.

**Colonel C. W. P. Ramsey, C.M.G.**, formerly Engineer of Construction, Eastern Lines, C.P.R., Montreal, was married in London, Eng., Sept. 19, to Miss Dorothy Jackson, youngest daughter of Sir John Jackson, M.P., of Sir John Jackson, Ltd., and Sir John Jackson (Canada), Ltd., general contractors. Col. Ramsey went overseas in 1915 in command of the Canadian Overseas Railway Construction Corps, with the rank of Lieutenant-Colonel, and was created a Companion of the Order of St. Michael and St. George in June, 1916, for services in the field. He was recently promoted to Colonel, and seconded for duty with the War Office.

**Private Thos. Robertson**, who enlisted with the University contingent of the 196th Battalion, in Apr., 1916, and later transferred to the Canadian Mounted Rifles, has died from wounds. Before enlisting he had been in Canadian Northern Ry. service since 1913, having been station ticket clerk at Saskatoon, Sask., city ticket clerk, Saskatoon, and from Nov., 1915, chief clerk to District Passenger Agent there.

**C. Spencer, Duncan, B.C.**, formerly a locomotive man on the C.P.R., is mentioned as the hero of the following story: Stealing out across No Man's Land, without orders, he climbed aboard a dead German locomotive attached to 16 cars of ammunition, and while enemy sentries paced back and forth, he got up steam, gave the locomotive a few kicks back to allay suspicion, and then threw her over, opened the throttle wide, and steamed away to the British lines, and was well inside before the surprised Germans realized what had happened. It is said that he was "penalized" by the commanding officer, with a commission as lieutenant.

**Brigadier-General Stewart**, formerly of Foley Bros., Welch & Stewart, contractors, Vancouver, has been appointed Director-General of Construction in the British Army, with supreme command over all railways, docks, etc. The addition of the command over the docks in France will entail a great deal of extra labor and responsibility.

**Company Sergt.-Major S. Underwood**, Railway Operating Company, has been awarded the Distinguished Conduct Medal. On several occasions he displayed great gallantry in the performance of his duties, setting a fine example to others and rendering conspicuous service. He saved much railway material and ammunition when he had to pass with a locomotive within a short distance of several dumps on fire, from which a large number of shells were exploding. On one occasion he ran his locomotive into some forward gun positions and remained there under heavy shell fire, assisting to pull out and save some heavy guns with their ammunition and equipment. He performed valuable service with complete unconcern for his personal safety.

**Major H. A. Wood, M.C.**, of the Royal Air Force, who is establishing a camp at Collinstown, Ireland, is a son of D. O. Wood, formerly of the Allan Line and C.P.R. service, now Superintendent Inland Transportation, British Ministry of Shipping (Canada). He graduated from the School of Practical Science, Toronto University, in Apr., 1915, with the degree of B.A.Sc., and entered the Toronto Harbor Commission's service in the same year, under the Chief Engineer. He received a commission as lieutenant in the Corps of Guides and went overseas in Nov.,

1915, joining the Royal Flying Corps in England, where he received his training. He was later selected as a flying patrol man and sent to France in June, 1916, and began his work in the Somme offensive on July 1, 1916. He was made a captain on the field in Nov., 1916. He was awarded the Military Cross in June, 1917, for good services in France, having, after nine months of flying, many enemy machines to his credit, and several narrow escapes. In that year, he was transferred to duty in the United Kingdom, having passed through his service in France without a scratch, and with nerves unshattered. On account of his knowledge of the airplane, and being a science graduate, he was selected to lecture in instruction camps to young officers, on the various subjects connected with the flying course, and he also designed a strengthener for the substructure of certain battle planes, which was adopted by the Air Board, and is now being used. He was promoted to the rank of Major in March, 1918, just prior to his 24th birthday, and specially selected to establish the first Royal Air Force training camp in Ireland, the one on which he is now engaged being a second one.

### Wages of Clerical, Station and Similar Forces on Railways.

In reference to the Canadian Railway War Board's decision to put into effect, as from Sept. 1, rates of pay and conditions as outlined in supplement 7 to general order 27 of the Director General of the United States Railroad Administration, on the basis of the interpretations published in full on pages 478 to 480 of this issue, the board issued the following circular Oct. 17 to railways operating in Canada:—

Supplementing the board's circular of September 30, embodying supplement 7, to general order 27 and interpretations thereto, the following additional interpretations have been obtained and will govern in applying the provisions of supplement 7 on railways in Canada, effective as from Sept. 1, 1918.

#### Article 1.

Question 1—Does article 1, clause A, apply to all clerical forces to which minimum of \$87.50 a month is granted? Answer—Yes. (Note: Owing to the inequalities and probable dissatisfaction arising from application of \$87.50 minimum to employees new to the service, such as beginners at stenography, comptometer operators, ticket assorters, and junior clerks, as well as to the more experienced and competent employees to whom the same rate at present applies, it is anticipated that a revision of classification will shortly take place, providing for the establishment of an "apprentice" class, in which will be included positions such as those specifically mentioned above and to which a lower rate will apply. It is anticipated that the proposed "apprentice clerk" classification will provide for a reasonable age limit and that \$25 per month increase, without the \$87.50 minimum, will be awarded. It is suggested that employees who are concerned in the anticipated reclassification be informed as to what is contemplated, with a view to avoiding possible difficulty when the reductions are made effective.)

Question 2—Under what clause should red cap porters be considered? Answer—Article 1, clause C.

#### Article 2.

Question 3—Is it permissible to retain stationary engineers, "steam" firemen and

power house oilers on other than monthly basis? Answer—Hourly rates may be continued, provided established minima are paid.

#### Article 5.

Question 4—Is it proposed to give any further consideration to question of overtime worked by employees named in this article, though working alongside men provided for by supplement 4? Supplement 7 allows pro rata for 9th and 10th hours, whereas supplement 4 provides time and a half over eight hours worked? Answer—Not at present. There is a possibility of further consideration.

#### Article 6.

Question 5—Are parlor, sleeping and dining car employees, conductors, porters, stewards, waiters, cooks and help intended to be provided for by supplement 7? Answer—No, general order 27.

Question 6—Is station restaurant help intended to be provided for by supplement 7? Answer—No, general order 27.

#### Article 10.

Question 7—Is it the intent to grant \$25 a month increase in salaries in effect Jan. 1, 1918, irrespective of reduction of hours, as result of application article 10? The text of supplement does not make clear how this is applied to hourly rated employees? Answer—Yes, irrespective of hours previously worked, for an 8-hour day, but not to produce a rate in excess of the maximum given.

#### Articles 12 and 13.

Question 8—Is it the intent that these articles be literally and generally applied? Answer—Yes; in matter of investigations, absolutely yes; in matter of seniority, generally speaking, yes. Clerks themselves were in doubt what they wanted, so can give no definite opinion at present.

Interpretations embodied in circular of Sept. 30, 1918, which conflict with the foregoing are hereby cancelled.

In view of the present labor situation in some parts of Canada it is highly desirable that the railways place in effect without delay the provisions of supplement 7, with interpretations which have been provided, and that the employees concerned be informed promptly, by posting of notices, or other suitable methods, that such action is being taken.

Pay for back time, due under the provisions of supplement 7, which was not included in payrolls already completed, should be arranged for in preparation of those for the second half of the current month where this can be done, or as soon thereafter as possible.

**Transportation and the cost of living.**—Under the War Measures Act, 1914, with a view of preventing undue enhancement of the cost of living, the Dominion Government issued in Nov., 1916, orders 2777 and 2957, in which certain defects have been discovered in the course of administration. By an order dated Oct. 4, these two orders are rescinded, and a new one issued which provides among other things that: "No person shall conspire, combine, agree or arrange with any other person to limit the facilities for transporting.... any necessary of life."

**A. W. Smithers**, Chairman of the Board, G.T.R., is expected in Montreal shortly to make his annual inspection trip over the line. It is reported that during his visit he will discuss with the Dominion Government the question of the acquirement of the G.T.R. and the G.T. Pacific Ry. for the Dominion.



# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—C. F. BURNS, Auditor of Disbursements, Moncton, N.B., died there, Oct. 16.

**Canadian Northern Ry.**—M. H. MacLEOD, heretofore General Manager and Chief Engineer, Western Lines, Winnipeg, has been appointed Vice President, in charge of operation, construction and maintenance, all lines. Office, Toronto.

G. R. EDGLEY, heretofore General Agent, Quebec, Que., has been appointed acting Superintendent, Saguenay Division, Quebec District, vice J. H. Davidson, Superintendent, deceased. Office, Quebec, Que.

J. J. NOONAN, heretofore Assistant to General Agent, Quebec, Que., has been appointed acting Freight Agent there.

HUGH MACDONELL, who was a member of the Canadian Expeditionary Force, and a prisoner of war until he escaped, has been appointed Right of Way and Claims Agent, Eastern Lines, vice J. Barbour, deceased. He reports to the General Solicitor. Office, Toronto.

A. E. WARREN, heretofore Assistant to General Manager, Western Lines, has been appointed General Manager, Western Lines. Office, Winnipeg.

W. C. POTTS has been appointed inspector, Sleeping and Dining Cars and News Service, Winnipeg.

F. TAYLOR, heretofore Sleeping and Dining Car Agent, Edmonton, Alta., is reported to have been appointed Sleeping and Dining Car Agent, Winnipeg.

E. G. WICKERSON, heretofore Passenger Agent, Prince Albert, Sask., has been appointed City Ticket Agent, Saskatoon, Sask., vice W. A. Vanalstine, transferred.

W. A. VANALSTINE, heretofore City Ticket Agent, Saskatoon, Sask., has been appointed Travelling Passenger Agent there, vice E. Bower, enlisted for active military service.

W. F. WOODS has been appointed Passenger Agent, Prince Albert, Sask., vice E. G. Wickerson, transferred.

L. BARNES has been appointed Sleeping and Dining Car Agent, Edmonton, Alta., vice F. Taylor, transferred.

J. G. CAMERON has been appointed Trainmaster, Calgary and Hanna Subdivisions, vice R. J. Kelly, transferred. Office, Hanna, Alta.

R. J. KELLY, heretofore Trainmaster, Calgary and Hanna Subdivisions, Hanna, Alta., has been appointed Trainmaster, Battle River, Brazeau, Strathcona and Alliance Subdivisions, vice S. S. Foley, assigned to other duties. Office, Big Valley, Alta.

S. S. FOLEY, heretofore Trainmaster, Big Valley, Alta., has been appointed agent, Richdale, Alta.

L. McCUTCHEON has been appointed Travelling Freight Agent, Vancouver, B.C.

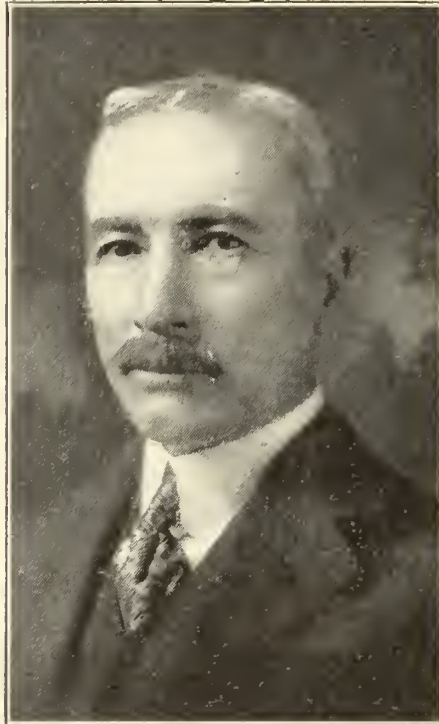
C. C. LABRIE, Accountant, Construction Department, Vancouver, has been appointed also Purchasing Agent there, vice J. H. Hoare, resigned.

A number of changes are about to be made in the accounting and auditing departments, among officials at Toronto and Winnipeg, but particulars of them were not available up to Oct. 31.

**Canadian Pacific Ry.**—The Right Hon. LORD SHAUGHNESSY, K.C.V.O., having

resigned from the Presidency, has been elected Chairman of the Company. His previous title was President and Chairman of the Company.

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M. H. MacLeod  
Vice President, Operation, Construction and Maintenance, Canadian Northern Railway.

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Allan Purvis,  
General Superintendent, Ontario District, Canadian Pacific Railway.

E. W. BEATTY, K.C., heretofore Vice President and General Counsel, has been elected President, vice Lord Shaughnessy, resigned. Office, Montreal.

GRANT HALL, heretofore Vice President and General Manager, Western Lines, Winnipeg, has been appointed Vice President, with jurisdiction over all lines, vice Sir George Bury, resigned. Office, Montreal.

A. D. MacTIER, heretofore General Manager, Eastern Lines, has been appointed Vice President in charge of lines east of Port Arthur, Ont., reporting to the Vice President, Grant Hall. Office, Montreal.

D. C. COLEMAN, heretofore Assistant General Manager, Western Lines, has been appointed Vice President in charge of lines west of Port Arthur, Ont., reporting to the Vice President, Grant Hall. Office, Winnipeg.

A. PRICE, heretofore Assistant General Manager, Eastern Lines, has been appointed General Manager, Eastern Lines, vice A. D. MacTier, promoted. Office, Montreal.

G. HODGE, heretofore Assistant to General Manager, Eastern Lines, has been appointed Assistant to Vice President, Eastern Lines. Office, Montreal.

W. J. ROBIDER, heretofore Master Car Builder, Central of Georgia Ry., Savannah, Ga., has been appointed General Master Car Builder, C.P.R., vice C. W. Van Buren, deceased. Office, Montreal.

W. J. PICKRELL, heretofore Assistant Superintendent, Farnham Division, Quebec District, Farnham, Que., has been appointed Master Mechanic, New Brunswick District, vice C. Gribbin, transferred. Office, St. John, N.B.

J. P. DOHERTY, heretofore chief clerk to Port Agent, Canadian Pacific Ocean Services, Ltd., Quebec, Que., has been appointed Travelling Freight Agent, C.P.R., vice J. E. Green, transferred.

J. M. WOODMAN, heretofore Superintendent, Montreal Terminals Division, Quebec District, Montreal, has been appointed General Superintendent, Quebec District, vice Allan Purvis, transferred. Office, Montreal.

K. F. NYSTROM, heretofore chief draftsman, Car Department, G.T.R., Montreal, has been appointed chief draftsman, Chief Mechanical Engineer's office, C.P.R., Montreal.

M. W. BARD, heretofore Assistant Superintendent, Farnham Division, Quebec District, was, on Oct. 1, appointed acting Superintendent, and subsequently W. J. UREN, heretofore Superintendent, Trenton Division, Ontario District, was appointed Superintendent, Farnham Division, Quebec District, vice J. B. Blair, transferred. Office, Farnham.

J. B. BLAIR, heretofore Superintendent, Farnham Division, Quebec District, Farnham, has been appointed Superintendent, Montreal Terminals Division, Quebec District, vice J. M. Woodman, promoted. Office, Montreal.

R. A. SEWELL, heretofore Assistant Superintendent, Trenton Division, Ontario District, has been appointed Assistant Superintendent, Montreal Terminals Division, Quebec District, vice R. W. Scott, promoted. Office, Montreal.

T. A. WILSON, heretofore Assistant Superintendent, Smiths Falls Division, Quebec District, has been appointed Superintendent, Smiths Falls Division, Quebec District, vice J. K. Savage, promoted. Office, Smiths Falls, Ont.

C. H. TOWLE, heretofore Assistant Superintendent, Brownville Division, New



Brunswick District, Brownville Jct., Me., has been appointed Assistant Superintendent, Smiths Falls Division, Quebec District, vice T. A. Wilson, promoted. Office, Smiths Falls, Ont.

ALLAN PURVIS, heretofore General Superintendent, Quebec District, Montreal, has been appointed General Superintendent, Ontario District, vice J. T. Arundel, who, the company very much regrets, has retired from the service. Office, Toronto.

J. K. SAVAGE, heretofore Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Assistant General Superintendent, Ontario District. This is a new position. Office, Toronto.

H. B. STEVENS, heretofore Assistant Superintendent, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Assistant Superintendent, Havelock Division, Ontario District, vice R. G. Edwards, transferred. Office, Havelock, Ont.

R. W. SCOTT, heretofore Assistant Superintendent, Montreal Terminals Division, Quebec District, Montreal, has been appointed Superintendent, Trenton Division, Ontario District, vice W. J. Uren, transferred. Office, Toronto.

A. MAYNES, heretofore Division Master Mechanic, London Division, Ontario District, London, has been appointed Division Master Mechanic, Bruce Division, Ontario District. Office, Toronto.

V. A. G. DEY, heretofore Assistant Engineer of Construction, has been appointed Resident Engineer, Toronto Terminals, vice G. H. Davis, promoted.

R. G. EDWARDS, heretofore Assistant Superintendent, Havelock Division, Ontario District, Havelock, Ont., has been appointed Assistant Superintendent, London Division, Ontario District, vice F. S. Rosseter, transferred. Office, London, Ont.

C. GRIBBIN, heretofore Master Mechanic, New Brunswick District, St. John, N.B., has been appointed Division Master Mechanic, London Division, Ontario District, vice A. Maynes, transferred. Office, London, Ont.

J. R. CASWELL has been appointed Engineer, London Division, Ontario District, vice J. M. Silliman, resigned to enter Delaware & Hudson Ry. service. Office, London, Ont.

F. S. ROSSETER, heretofore Assistant Superintendent, London Division, Ontario District, London, Ont., has been appointed Assistant Superintendent, Sudbury Division, Algoma District, vice H. B. Stevens, transferred. Office, Sudbury, Ont.

C. MURPHY, heretofore General Superintendent, Manitoba District, Winnipeg, has been appointed General Manager Western Lines. Office, Winnipeg.

C. E. STOCKDILL, heretofore Assistant to Vice President and General Manager, Western Lines, Winnipeg, has been appointed Assistant to Vice President Western Lines. Office, Winnipeg.

E. C. P. CUSHING, heretofore private secretary to the President (Lord Shaughnessy), Montreal, has been appointed Purchasing Agent, Winnipeg.

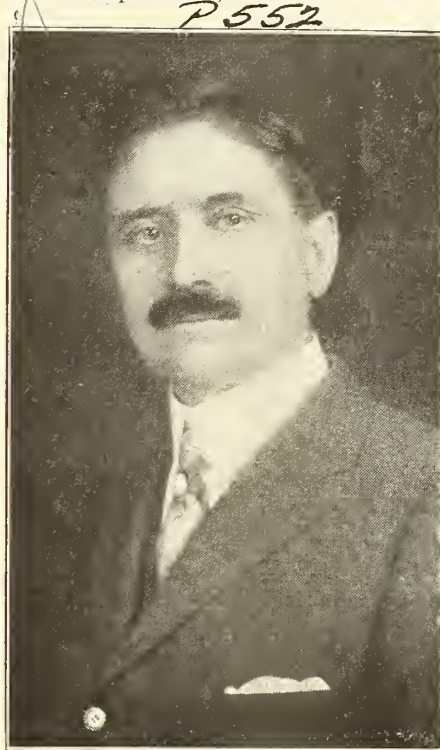
A. E. STEVENS, heretofore General Superintendent, Saskatchewan District, Moose Jaw, has been appointed General Superintendent, Manitoba District, vice C. Murphy, promoted. Office, Winnipeg.

A. J. PENTLAND, heretofore Locomotive Foreman, Transcona, Man., has been appointed Locomotive Foreman, Regina, Sask., vice A. S. McDonald, transferred.

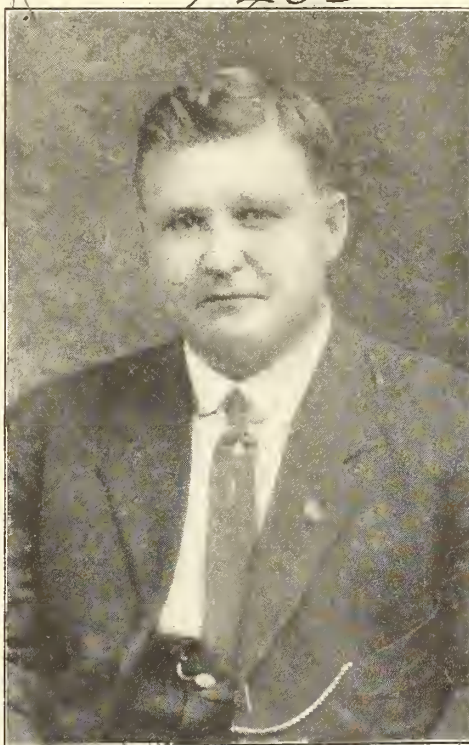
W. A. MATHER, heretofore Assistant General Superintendent, British Columbia

District, Vancouver, has been appointed General Superintendent, Saskatchewan District, vice A. E. Stevens, transferred. Office, Moose Jaw.

GEO. A. WALKER will perform the duties of Manager of the Natural Resources Department, with the title of act-



G. M. Wilson,  
Superintendent of Motive Power Shops, Grand  
Trunk Railway, Montreal.



C. H. Towle,  
Assistant Superintendent, Smiths Falls Division,  
Quebec District, Canadian Pacific Railway.

ing Manager, during the absence of P. L. Naismith, Manager.

C. A. COTTERELL, heretofore Superintendent, Medicine Hat Division, Alberta District, Medicine Hat, has been appoint-

ed Assistant General Superintendent, British Columbia District, vice W. A. Mather, promoted. Office, Vancouver.

C. S. MAHARG, heretofore Superintendent, Brandon Division, Manitoba District, Brandon, Man., has been appointed Superintendent, Cranbrook Division, British Columbia District, vice A. C. Harshaw, transferred. Office, Cranbrook, B.C.

Canadian Pacific Ocean Services, Ltd.—Lieut.-Col. F. A. GASCOIGNE, D.S.O., formerly Superintendent, Car Service, Eastern Lines, C.P.R., Montreal, has been appointed Secretary-Treasurer, C.P.O.S., Ltd. Office, Montreal.

Grand Trunk Ry.—Owing to the illness and enforced absence for some months of U. E. GILLEN, Vice President in charge of transportation, the duties of that office have been assumed by W. D. ROBB, Vice President in charge of motive power.

W. H. SAMPLE, heretofore Superintendent Motive Power and Car Department, Grand Trunk Western Lines Rd., Detroit, Mich., has been appointed General Superintendent, Motive Power and Car Departments, G.T.R. Office, Montreal.

J. M. ROSEVEAR has been appointed General Auditor, G.T.R. and Grand Trunk Pacific Ry. Office, Montreal.

J. F. AITCHISON, heretofore special auditor, has been appointed acting Auditor of Disbursements, G.T.R. and Grand Trunk Pacific Ry., vice J. M. Rosevear, Auditor of Disbursements, promoted. Office, Montreal.

W. McNAB, heretofore Valuation Engineer, has been appointed Chairman, Valuation Committee, vice H. R. Safford, Chief Engineer, who has left the service. Office, Montreal. This is a board of G.T.R. officials formed in accordance with an act of the U.S. Congress, directing the Interstate Commerce Commission to secure the valuation of all property owned or used by common carriers.

A. CRUMPTON, heretofore Assistant Valuation Engineer, has been appointed Valuation Engineer, vice W. McNab, promoted. Office, Montreal.

W. A. PITT, Foreman Machine Shop, Montreal, has been appointed Assistant Master Car Builder, Montreal shops.

I. N. CLARK, heretofore Assistant Master Car Builder, London shops, has been appointed Master Car Builder, Ontario Lines, vice T. A. Treleaven, retired under the pension rules. Office, London, Ont.

J. BROOKS, Foreman, Passenger Car Shops, Montreal, has been appointed Assistant Master Car Builder, London shops, London, Ont., vice I. N. Clark, promoted.

Grand Trunk Pacific Ry.—J. M. ROSEVEAR has been appointed General Auditor, G.T.R. and G.T.P.R. Office, Montreal.

J. F. AITCHISON has been appointed acting Auditor of Disbursements, G.T.R. and G.T.P.R. Office, Montreal.

G. U. RYLEY, Land Commissioner, Winnipeg, having retired from the service, the position has been abolished, the land and town sites departments being placed under the Land and Tax Agent there.

H. E. BISSELL, heretofore Right of Way and Claims Agent, has been appointed Land and Tax Agent, and his former position has been abolished. He continues to deal with right of way matters. Office, Winnipeg.

H. H. HANSARD, Solicitor, has had his jurisdiction extended over the Claims Department, and deals with all correspondence and reports pertaining to claims on account of injuries to persons or live stock. Office, Winnipeg.



P. C. PERRY, heretofore instrument man, Edmonton, Alta., has been appointed Assistant Resident Engineer, Regina, Sask., reporting to the Resident Engineer, Melville, Sask.

G. MURRAY, heretofore instrument man, Regina, Sask., has been appointed Resident Engineer, Melville, Sask., vice S. Smith, promoted.

S. SMITH, heretofore Resident Engineer, Melville, Sask., has been appointed Assistant Superintendent, Edson, Alta.

Grand Trunk Western Lines Rd.—B. J. FARR, heretofore Master Mechanic, G.T.R., Battle Creek, Mich., has been appointed Superintendent Motive Power and Car Department, G.T.W.L.R., vice W. H. Sample, resigned to re-enter G.T.R. service. Office, Detroit, Mich.

Michigan Central Rd.—W. J. SHAW, heretofore Assistant Division Engineer, St. Thomas, Ont., is reported to have been appointed Division Engineer, there, vice J. E. Johnson, resigned.

Minneapolis, St. Paul & Sault Ste. Marie Ry.—G. R. HUNTINGTON, Federal Manager, Minneapolis, Minn., has had his jurisdiction extended over the Mackinac Transportation Line and the Sault Ste. Marie union station.

New York Central Rd.—A. L. MILLER, heretofore General Agent, Montreal, has been appointed General Agent, at Albany, N.Y.

Northern Navigation Co.—E. W. HOLTON, heretofore General Passenger Agent, has been appointed General Freight Agent in charge of Freight Traffic, and the Passenger Department has been placed under the supervision of the Manager, H. H. Gildersleeve. Office, Sarnia, Ont.

F. D. GEOHEGAN has been appointed Eastern Passenger Agent to assist the Manager in the Passenger Department. Office, Sarnia, Ont.

Reid Newfoundland Co.—J. McNEIL FORBES is reported to have been appointed to develop the natural resources of the company's properties.

## The United States Railroad Administration's Work.

Loans to Railways.—Believing that it will be for the general welfare and a factor in beneficially stabilizing money rates, the Director General announces that as to all railway mortgage bond issues which may mature between the present time and July 1, 1919, where railway companies may find it impracticable to obtain money for the renewal of their maturing bonds at a rate of interest which the Director General may feel warranted in approving, he will lend to all such companies on safe and reasonable security at the rate of 6%, such funds as may be necessary to pay off their maturing issues of mortgage, equipment, or debenture bonds. The aid thus rendered by the Director General to maintain on a moderate basis the rates of interest which railways may be required to pay on loans must not be interpreted by them as relieving them of the duty and responsibility of using their best efforts to provide for their own financial needs as occasions arise, but is intended to give them assurance that the money required for their legitimate needs, and for which they can offer satisfactory security, can be obtained without their being required to pay exorbitant or unreasonable rates or commissions.

Meals for Army and Navy Men.—The Railroad Administration and the War and

Navy Departments have agreed upon an arrangement for furnishing meals in dining cars and restaurant stations to officers and enlisted men which is proving very popular with men in the service. The War and Navy Departments have raised the meal allowance to 75c. In some instances the former allowance was 50c and in others 60c. Orders have been issued that a substantial and appetizing table d'hôte meal be furnished for this sum. The weight of each article on the menu will equal or exceed the army and navy rations. The arrangement will apply to officers and men traveling at their own expense as well as to those who are traveling on government orders, and includes inducted men on their way to enter the service.

## Standardizing the Prince Edward Island Railway.

Previous to the building of the car ferry steamship Prince Edward Island, all traffic to and from Prince Edward Island was handled by steamships during the season of navigation between Picotou, N.S., and Charlottetown, P.E.I., and between Point du Chene, N.B., and Summerside, P.E.I., and in the winter by ice breaking steamships between Picotou, N.S., and Georgetown. Charlottetown is the capital and principal city of the province; Summerside being the principal town of the western end. In 1912, the demands for more adequate transportation facilities were met by the Dominion Government with a proposition to put on a car ferry between Cape Tormentine, N.B., and Carleton Point, P.E.I., now called Borden, a distance of 9 miles, and work was started on the construction of docks, with the necessary transfer facilities, in 1914. The car ferry steamship Prince Edward Island was built specially for this service, with a capacity of 12 of the largest standard freight cars, and being a very powerful ice breaker, has had no difficulty in operating during the winter.

Owing to the loss of shipping, and high freight rates, the burden of transporting all classes of merchandise to and agricultural products from the Island became so great that it has been deemed necessary to extend the standard gauge service from Borden to Charlottetown and Summerside. As the narrow gauge line must also be operated to connect up the remaining portion of the P.E.I. Ry., it became necessary to lay a third rail to take the standard cars, and this work is now under way; the mileage covered being as follows: Borden to Emerald Jct., 12.15 miles; Emerald Jct. to Charlottetown, 30.30 miles; Emerald Jct. to Summerside, 17.08 miles. Total, 59.48 miles.

The P.E.I. Ry. gauge is 3½ ft., and in order to keep the standard track on the centre of the roadbed it is necessary to line the ties and narrow gauge track over, remove spikes from the old rail and relocate the same on the ties. The ties formerly used on this railway were 7 ft. x 6 x 8 in., and since 1913 tie renewals have all been made with standard 8 ft. ties, so that on completion of this year's renewal some 60% of all ties in the third rail territory will be 8 ft. long. The rail being used is 67.5 lb. per yard, of peculiar section, 5 in. high and 4 in. wide on the base. It was rolled in the United States for the Russian Government, together with special angle bars, bolts and spikes.

Work was started last spring as soon as the ground was fit to work, with a Marion ditcher, widening cuts and embankments, which in a great many places

were too narrow to carry standard equipment. About 75% of this work is completed and about 10% of the tracklaying was completed on Oct. 1. It is expected to have standard cars running to Charlottetown and Summerside by Jan. 1 with the necessary facilities for handling them at both points, including transfer tracks, locomotive house alterations, turntables and shed accommodation.

Bridges are being replaced with second hand steel, released from the main lines, or supported by bents, where opportunity offers. All small openings are being renewed or replaced with concrete pipe culverts where the same can be done to advantage.

The work is being done by the railway forces, under the direct supervision of T. B. Grady, Superintendent, and Alex. Scott, Resident Engineer. The labor is mostly German, supplied from the internment camp at Amherst, N.S., with the necessary guards and officers. At present time there are approximately 100 men at work and this force will be increased as soon as possible.

## Canadian Northern Railway Earnings, etc.

Gross earnings, working expenses, net earnings, increases and decreases compared with those of 1917, from July 1, 1918:

	Gross earnings.	Expenses.	Net earnings.	Decreases.
July	\$3,739,400	\$3,462,700	\$276,700	\$628,200
Aug.	3,933,300	3,433,700	499,600	93,600
Sept.	4,050,900	4,109,000	* 58,100	484,000
	\$11,723,600	\$11,005,400	\$718,200	\$1,205,800
Inc.	1,131,800	2,337,600		
Dec.			1,205,800	

\*Deficit.

Approximate earnings for three weeks ended Oct. 21, \$3,302,200, against \$2,591,400 for same period 1917.

## Canadian Pacific Railway Earnings, etc.

Gross earnings, working expenses, net earnings, and increases or decreases, compared with those of 1917, from Jan. 1, 1918:

	Gross earnings.	Expenses.	Net earnings.	Decreases.
Jan.	\$10,789,818	\$9,621,824	\$1,167,993	\$1,263,485
Feb.	9,574,302	8,893,404	590,898	1,396,151
Mar.	12,427,915	9,435,134	2,992,781	944,536
Apr.	13,328,849	9,873,459	3,455,390	719,588
May	13,314,117	9,626,341	3,687,776	863,944
June	12,577,286	9,765,139	2,812,147	1,103,759
July	12,374,165	10,204,153	2,170,012	1,589,995
Aug.	13,109,753	9,901,123	3,208,630	608,908
Sept.	13,584,771	10,463,330	3,121,441	625,710

	\$111,080,975	\$87,873,907	\$23,207,068	\$9,115,977
Inc.	1,687,459	10,802,536		
Dec.			\$9,115,977	

Approximate earnings for three weeks ended Oct. 21, \$10,191,000, against \$9,604,000 for same period 1917.

## Grand Trunk Railway Earnings.

	Gross earnings.	Expenses.	Net earnings.	Increases or decreases.
Jan. to June	\$26,162,127	\$25,855,560	\$306,567	*\$4,652,068
July	5,788,482	4,355,163	1,433,319	214,767
Aug.	6,106,006	4,325,751	1,780,255	656,719

	\$38,056,715	\$34,539,474	\$3,517,131	*\$3,780,581
Inc.	4,432,430	8,213,011		
Dec.			\$3,780,581	

\*Decreases.

Approximate earnings for September, \$6,350,870, and for three weeks ended Oct. 21, \$4,190,691, against \$4,465,678 and \$2,020,745 for same periods 1917.

## Grand Trunk Pacific Ry. Earnings.

Earnings for August, \$411,364, against \$486,849 for Aug., 1917; aggregate for two months ended Aug. 31, \$849,211, against \$976,829 for same period 1917. Approximate earnings for three weeks ended Oct. 21, \$331,194, against \$328,613 for same period 1917.



## Traffic Orders by Board of Railway Commissioners.

### Storage of ex-Lake Grain at Montreal.

27714. Sept. 27. Whereas the Montreal Harbor Commissioners, by bylaw 104, issued Sept. 20, 1918, to become effective Oct. 1, 1918, have reduced the period within which grain may be stored in their elevators at Montreal, free of storage, from 20 days to 10 days, the said Harbor Commissioners not being subject to the board's jurisdiction; and whereas the G.T.R., relying on the Harbor Commissioners' bylaw previously in force, announces in its tariff that the grain carried by its company from its lake ports is entitled to 20 days free storage, and has applied to the board for permission to amend its tariff so as to restrict the said free storage period to 10 days on and from Oct. 1, 1918, it is ordered that the G.T.R., or any other railway company which has made similar publication, be permitted to amend its tariff, or tariffs, as aforesaid; provided that should the Harbor Commissioners extend their free storage period beyond 10 days, the tariff, or tariffs, of the railway company, or companies, shall be simultaneously amended so as to provide for at least the same free storage period.

### Commercial Travellers' Fares and Baggage.

27718. Sept. 28. Re complaint of Dominion Travellers' Association, the Northwestern Canada Travellers' Association of Montreal, and the Commercial Travellers' Association of Canada, Toronto, against the proposed cancellation by the Quebec, Montreal & Southern Ry. Company and the Napierville Junction Ry. of reduced fares and special baggage allowance for commercial travellers. Upon reading what has been submitted on behalf of the complainants, it is ordered that the following schedules be, and they are hereby, suspended pending hearing on a date to be fixed by the board:—

Quebec, Montreal & Southern Ry.—Supplement 6 to C.R.C. 160; supplement 1 to C.R.C. 236; supplement 2 to C.R.C. 263.

Napierville Junction Ry.—Supplement 3 to C.R.C. 31; supplement 2 to C.R.C. 69; supplement 1 to C.R.C. 94.

### Freight Rates on Turnips.

27772. Oct. 21. Re in the matter of application of Toronto Board of Trade, on behalf of the Ontario Turnip Shippers' Association, for an order suspending the proposed tariffs of the Grand Trunk and Canadian Pacific Railways, to take effect Oct. 22, and of the Toronto, Hamilton & Buffalo Ry., to take effect Nov. 1, to apply on turnips, in carloads, from points in Ontario to points in the United States. Upon hearing the matter at Toronto, Oct. 17, the applicants and the railway companies being represented at the hearing, it is ordered that the Grand Trunk, Canadian Pacific and Toronto, Hamilton & Buffalo Railways be required to publish and file tariffs of joint through rates on turnips, in carloads, from the shipping points of the said companies to the principal destinations in the southern United States, as arranged between the parties, that shall not exceed the lowest combination of rates to and beyond Buffalo, N.Y., or to and beyond basing points commonly called the Ohio River Crossings, the said tariffs to become effective not later than Nov. 1, and may be filed on one day's notice, subject to the consent of the Interstate Commerce Commission. It is also

ordered that the said tariffs, when effective, shall supersede the tariffs complained against; and it is further ordered that order 27439, July 17, 1918, be rescinded.

### Freight Rates on Building Materials.

27773. Oct. 22. Re complaint of Canadian Manufacturers' Association against the increases shown in the special tariffs filed by railway companies on what are described as "building materials." Upon its appearing that commodity tariffs published and filed by the Grand Trunk, Canadian Pacific, Canadian Northern, Toronto, Hamilton & Buffalo, Quebec, Montreal & Southern, Napierville Junction, Dominion Atlantic, Glengarry & Stormont, and Chatham, Wallaceburg & Lake Erie Railways, and the New York Central, Michigan Central, Pere Marquette and Wabash Railroads show rates that have been increased more than the 25% provided for by sec. 1 (b) of the order in council 1863, dated July 27, 1918, the said tariffs being those applicable to building, road and drainage materials, and raw materials therefor; and upon reading the report and recommendation of the board's Chief Traffic Officer, it is ordered that the said rates, to the extent that they exceed those provided for by the said order in council, be disallowed, and the said railway and railroad companies are hereby permitted, on one day's notice to the public and to the board, to republish and refile the said rates in accordance with the said order in council.

### Milling in Transit Charge on Grain East of Fort William.

27781. Oct. 28. Re application of Quaker Oats Company for an order suspending various C.P.R. schedules published to become effective Nov. 1, increasing its milling in transit charge on grain east of Fort William from 1c to 2c per 100 lb. Complaints having also been filed with the board against the proposed increased milling in transit charge by the Winnipeg Board of Trade, the Western Canada Flour Mills Co., N. M. Patterson & Co., and the Anchor Elevator Company, Winnipeg, it is ordered that the effective date of all schedules filed by the Canadian Pacific, Canadian Northern, Grand Trunk, and Grand Trunk Pacific Railways providing for an increase to 2c per 100 lb. for milling in transit, be delayed pending hearings and further order of the board.

**Canadian Railway Club.**—Consequent on the accidental death of the President, C. W. Van Buren, General Master Car Builder, C.P.R., the following officers were elected at a meeting of the executive committee, Oct. 8:—President, T. C. Hudson, Master Mechanic, Quebec District, Canadian Northern Ry.; First Vice President, J. Hendry, Master Car Builder, G.T.R.; Second Vice President, W. H. Winterrowd, Chief Mechanical Engineer, C.P.R.; member of the executive committee, E. R. Battley, Superintendent of Motive Power, Eastern Lines, G.T.R.

**Steel Rail Deliveries.**—We were officially advised Oct. 19 that the Dominion Iron & Steel Co., Sydney, N.S., had rolled 89,425 tons of steel rails out of the 100,000 tons ordered by the Dominion Government and that 76,743 tons had been shipped to railways as below:—

Canadian Government Railways.....	14,309 tons
Canadian Northern Ry.....	18,528 "
Canadian Pacific Ry. Co.....	30,197 "
Grand Trunk Ry.....	13,708 "

## Railway Rolling Stock Orders and Deliveries.

The International Nickel Co., Port Colborne, Ont., has ordered 4 six-yard, 2-way, side dump cars, equipped with automatic couplers, from National Steel Car Co.

The Prince Edward Island Ry. has received 2 ten-wheel narrow gauge locomotives from Canadian Locomotive Co., the balance of an order placed for 4 of this type.

The Italian Government has ordered from the American Locomotive Co., 150 locomotives for use on the state railways. The contract price is said to exceed \$5,000,000.

The Canadian Northern Ry. has received 4 six-wheel switching locomotives from Canadian Locomotive Co., being the balance of an order placed by the Dominion Government.

The Grand Trunk Ry. has received 4 Mikado locomotives of the Canadian Government Railways type, from Canadian Locomotive Co., as part of an order placed by the Dominion Government.

The Canadian Car & Foundry Co. has delivered 894 steel frame box cars, 40 tons capacity, and 133 stock cars, 30 tons capacity, from its Montreal works, and 56 wooden box cars, which have been repaired at its Montreal and Amherst, N.S., works, to Canadian Government Railways.

The C.P.R., between Sept. 13 and Oct. 29, received the following rolling stock:—12 express refrigerator cars, 86 steel underframe box cars, 2 wooden single track snow ploughs, and 2 decapod locomotives from its Angus Shops, Montreal, and 3 vans from its Winnipeg Shops, and ordered one 29 ft. van from its Winnipeg Shops.

The Federal Malay States Government Railways, of Kuala Lumpur, India, have ordered underframes, brakes and trucks for 10 first class passenger cars, 10 second class passenger cars, 20 third class passenger and brake composite cars, and also underframes, brakes and trucks complete for 150 coal cars, from National Steel Car Co.

The Greater Winnipeg Water District Commissioners received tenders Oct. 28, for the purchase of 1 four-wheel switching locomotive, standard gauge, 35 tons, cylinders 16 x 26 in., water capacity 2,000 gals., coal capacity 3 tons, built by American Locomotive Co.; and 2 mogul (2-6-0) locomotives, standard gauge, 57 tons, cylinders 18 x 24 in., water capacity 5,000 gals., coal capacity 8 tons, built in 1914 by Montreal Locomotive Works.

The British-American Nickel Corporation, Murray, Ont., has ordered from Canadian Car & Foundry Co., 3 mine skip cars, with liners, bail and clevises. They will have chilled cast iron tread wheels pressed on the axles, instead of manganese steel, liner plates on bottom and rear of cars only, and to be of open hearth steel instead of manganese steel. They will weight 5 or 6 tons each and hold 7½ tons of ore, operating on a 36 degree incline at a speed of 1,500 ft. a minute. They are being built at the company's Montreal plant.

The Esquimalt & Nanaimo Ry. started the operation of an additional freight service between Victoria and Nanaimo, B.C., Oct. 15, by attaching a freight car to the daily northbound passenger train.



## Directors' Inspection of Canadian Northern Railway.

D. B. Hanna, President, and Robt. Hobson, one of the other C.N.R. directors, left Toronto, Oct. 4, for an inspection of the main line to Vancouver, R. P. Ormsby, the company's Secretary, accompanying them. S. J. Hungerford, General Manager, Eastern Lines, and A. F. Stewart, Chief Engineer, Eastern Lines, travelled with them to Port Arthur, where they were met by M. H. MacLeod, General Manager and Chief Engineer, Western Lines, and A. Wilcox, General Superintendent, Central Division. At Winnipeg they were joined by the two western directors, R. T. Riley, of Winnipeg, and C. M. Hamilton, of Weyburn, Sask., who proceeded west with them right through to Victoria, B.C., which was reached Oct. 10. The principal operating officers accompanied the party within their respective jurisdictions. At Vancouver on Oct. 9 the President and other directors met the Minister of Railways, Hon. J. D. Reid, who accompanied them to Victoria, and also returned east with them. They also met the Minister of Public Works, Hon. F. B. Carvell, who accompanied them on their inspections in Victoria, Vancouver and New Westminster.

At Victoria, the president and other directors met the British Columbia Premier and other ministers, and discussed various matters affecting the interests of the railway and its relations with British Columbia, particularly in respect to the continuation of the line from Victoria to the Nitinat district. The party were taken over the terminal area at the Songhees Reserve, the harbor property, etc., by the mayor, who presented the city's point of view. Subsequently they met a delegation of the Victoria Board of Trade, and discussed the work necessary for the development of the trade of the port.

After hearing remarks by a number of members of the Victoria Board of Trade, the Minister of Railways said, as reported in the local papers, that he was glad to be able to assure the people of Victoria that within a few months 100 miles of the C.N.R. will be in operation on Vancouver Island. Now that the people of the country own the line, it has to be remembered that everything the people do themselves to popularize it will not only benefit the system itself, but it will also tend towards the development of the country. And no province has a better chance than British Columbia, with her mineral, forest and agricultural wealth, and her great seaboard. The minister referred at some length to the development of the port of Victoria, the necessities of which he had not fully understood prior to his visit. He thought that Victoria's position in relation to her possibilities of transportation had changed with the taking over by the government of the C.N.R. system. With docks and warehouses already established for public use, he had, and would continue, to urge upon the Minister of Public Works, the advisability of permitting them to form part and parcel of the C.N.R. system, instead of placing them within the control of the Public Works Department. He was amazed at the representations made in relation to the quantity of freight handled at the outer wharf, and the fact that an average of 30,000 tons required handling yearly, without solicitation of any kind, suggested the possibilities offered by a well organized Oriental campaign. He and the President and directors of the C.N.R. would return east fully seized with the

idea that Victoria as a great port should be placed in the best possible position so far as the C.N.R. is concerned.

D. B. Hanna is reported to have stated, in the course of his remarks, that it would be the directors' object to aim at a large gross revenue, with a minimum of expenditure, so that it could be shown to the people of Canada that government ownership could be made to pay. After reviewing some points in the history of the line, he said that at the end of 20 years there were on the system some 800 locomotives and 32,000 cars, and that a substantial financial appropriation had already been voted for the provision of the additional urgently needed rolling stock. With that in mind, and with the plans that were assuming shape for the procuring of business, he could safely predict that development would commence right on Vancouver Island and in the City of Vancouver and proceed eastward and not stop until it reached the Atlantic Coast. He had seen the system grow from some 100 miles of line to nearly 10,000 miles. Some of the mileage built might not have been justifiable at the time, simply because the old management was not in a position to procure sufficient rolling stock. His judgment, based on over 20 years of experience with the company, was that, under normal conditions, the C.N.R. would most certainly be a really live asset and not a liability. His expectations in this regard were, of course, based on the road being managed on business principles and free from political interference. He was glad to be able to say that there was every indication that the board would have perfect freedom of action. The people could make or unmake the C.N.R. system, and he looked to them confidently for reasonable support. One of the company's best assets is the esprit de corps among all ranks of the service and the thorough feeling of loyalty to the system which prevails.

At Vancouver, the party visited the terminal works at False Creek, and the harbor facilities generally, and then went on to New Westminster and Port Mann.

The Minister of Railways is reported to have said, in speaking at Vancouver, now that the Canadian Northern Ry. has become the property of the people Canada, it is the government's duty to operate it in the interests of the people and not in the interests of any contractors. There is work to do in Canada for the whole system of Canadian Government Railways, now totalling about 14,000 miles. There are terminal facilities at Halifax and St. John, N.B., capable of handling the traffic, not only of the C.N.R., but of all the railways in Canada, or any transoceanic traffic that could possibly be required. The C.N.R. would prove of great value to British Columbia, but this could only come to pass if it had facilities at Vancouver twice as good as those of the C.P.R. He had found since coming to Vancouver, that though the people owned a railway and the government had built an elevator on Burrard Inlet, wheat could not be got to the elevator without paying heavy tolls for shunting cars, to the C.P.R. and to the Great Northern Ry. That is an obstacle to the development of trade, and as soon as he returned to Ottawa it would be removed. He wanted to see as much of the wheat for export from Alberta, going through this elevator, and then going by the

Panama Canal to Liverpool or across the Pacific to the Orient. There must be a large fleet provided to ply on the Pacific as well as on the Atlantic Ocean, to connect with the government railways. With respect to the traffic between Vancouver and Victoria, a car ferry is on its way from the Atlantic seaboard, and is expected to arrive at an early date. Its capacity is 21 cars, and it will be able to handle all the traffic that may offer.

At North Vancouver, the party were received by the mayor and shown round. Mr. Hanna is reported to have said:—"There is no obstacle to putting on a car ferry between the government wharf on the Vancouver side and North Vancouver," the meaning of which, according to a local report, is that if such an improvement be effected, track connections would be made between the C.N.R. False Creek terminals and the government wharf. The mayor promised to send all data in regard to the matter to the company's offices in Toronto for the directors' consideration.

On the return trip eastward, the party left Vancouver Oct. 13 and stopped off at Kamloops, where they looked over the terminals, with a view of extending the line from the junction into the town, which will probably be done in the near future. Edmonton was reached Oct. 15, and after spending a day there they left for Calgary, and afterwards stopped over at Drumheller, Alta., where 18 coal mines are producing from 3,500 to 4,500 tons of high grade lignite a day, with the expectation of substantially increasing this next year. From Drumheller they went via Saskatoon to Winnipeg, arriving there Oct. 17. At Winnipeg the Minister of Railways and the directors visited the C.N.R. shops at Fort Rouge, also the Canadian Government Railways shops at Transcona, with a view to co-ordination of work in the event of the amalgamation of the Canadian Northern and the Canadian Government Railways. Messrs. Riley and Hamilton left the party at Winnipeg, and after spending three days there, the Minister of Railways and Messrs. Hanna, Hobson and Ormsby started east, making a short stop at Port Arthur, and reaching Toronto Oct. 22.

### Sea Wall, Canadian Northern Terminals Etc. at Vancouver.

The Minister of Public Works, Hon. F. B. Carvell, was in Vancouver, Oct. 9, where he conferred with the mayor and representatives of the city council upon harbor development matters. One of the places visited was the sea wall at False Creek, work on which has been stopped pending settlement of certain matters with Champion & White, who claim its erection will prevent their making use of their wharf. The city claims that it has a crown grant prior to Champion & White and that the firm had never been authorized to build a wharf. All the facts in connection with the matter were laid before the minister, who stated that the erection of the sea wall would have to be proceeded with. He was shown the site of the proposed deep sea terminals at the Kitsilano reserve, and the route of the line connecting them with the Canadian Northern Ry. at False Creek, and the layout of the proposed docks at English Bay, and he is reported to have said on his return to the city that deep sea terminals are a logical necessity for the C.N.R.



## Railway and Other Lockouts and Strikes Prohibited by Order in Council.

The following order in council has been passed by the Dominion Government:

Whereas the Minister of Labor represents that under the provisions of the Industrial Disputes Investigation Act and amendments thereto, provision is made for the establishment of conciliation boards for the adjustment of disputes between employers and employes in the manner in said act and amendments thereto provided;

That by order in council P.C. 1743 of July 12, 1918, provision is made for a board of appeal to which resort may be had when any party interested feels aggrieved by the decision of any such board of conciliation;

That there has been constituted by the Canadian Railway War Board, with assent of representatives of the organized bodies of railway employes, a board of adjusters for the settlement of disputes that may arise between the employes engaged in railway work and their employers;

That by these different dispositions full and adequate provision is made for the just and equitable settlement and adjustment of all matters of dispute that may arise between the employers and employes in the different industries affected by the Industrial Disputes Investigation Act and its amendments, or between employers and employes in connection with the carrying on of the operations of railways in Canada, but no provision is made for enforcement of obedience to and compliance with the orders or decisions of such boards, nor is there any prohibition of strikes or lockouts, after report has been made by a board of conciliation;

That in view of the provisions so made and of the injurious and detrimental effects resulting from the occurrence of strikes and lockouts in the different industries affected by the Industrial Disputes Investigation Act and in connection with the operation of the railways, which strikes or lockouts are of a nature to seriously interfere with the carrying on of said industries and the operation of the said railways, both of which are essential to the efficient performance of Canada's duty in aiding in the effective prosecution of the present war, it is necessary and advisable that under the powers conferred upon the Governor in council by the War Measures Act of 1914, such strikes and lockouts in connection with such industries or railway operations should be absolutely prohibited during the continuance of the present war;

Therefore, His Excellency the Governor General in council, on the recommendation of the Minister of Labor, and under the provisions of the War Measures Act, 1914, is pleased to make the following regulations, and the same are hereby made and enacted accordingly:—

1. In the present regulations, the word "person" wherever used, shall, save where the context otherwise requires, include every company, firm, partnership or other association of persons incorporated or unincorporated;

2. Any person who during the continuance of the present war shall incite, order or participate in a lockout or strike as defined in the said Industrial Disputes Investigation Act and amendments thereto, in any industry mentioned therein or to which the said act is applicable either in virtue of its terms, or of any act of

fore, during or after an investigation by a board of conciliation established under the said act or amendments, or by a board of appeal or the board of adjusters above mentioned, shall be guilty of an offence punishable as hereinafter provided.

3. Any employer of labor shall be guilty of an offence and liable to the penalties hereinafter provided who, during the continuance of the present war, shall discharge or refuse to employ workers (other than those holding positions or employment which shall be by judgment of the board of appeal or the board of adjusters above mentioned, determined to be incompatible with membership in a union) merely by reason of membership in trades unions or for legitimate trade union activities outside of working hours.

4. Every worker shall be guilty of an offence, and liable to the penalties as hereinafter prescribed who in the exercise of his right to organize uses either coercion or intimidation of any kind to influence any person to join his organization.

5. Every decision or order of any board of conciliation shall, if unappealed from within 30 days after it is rendered or made, and every decision or order of the board of appeal or board of adjusters parliament or order in council amending the same, or in connection with the operation of any railway in Canada, be above mentioned, shall be binding upon all persons affected thereby and any person who during the continuance of the present war fails or refuses to comply with any such order or decision of any board of conciliation or of the board of appeal or board of adjusters above mentioned shall be guilty of an offence and liable to the penalties hereinafter prescribed.

6. Any person violating any of the foregoing regulations shall be liable upon summary conviction to a penalty not exceeding \$1,000, or to imprisonment for a period not exceeding 6 months, or to both fine and imprisonment.

7. (a) Any male person, employer or employe, of military age as defined by the Military Service Act, who violates any of the hereinabove enacted regulations, and any director of such military age of any company who acquiesces in the violation of the said company of any of said regulations, shall *inso facto* be deemed to be a soldier enlisted in the military forces of Canada and subject to military law for the duration of the present war and of demobilization thereafter and shall forfeit any exemption granted to him and any right to apply for or obtain any exemption from military service under the Military Service Act.

(b) In any prosecution for acquiescence on the part of a director of any company in a violation by the said company of any of the present regulations, it shall be upon the party charged to prove non-acquiescence by him in such violation.

The Regina Municipal Ry. has posted the following notice in its cars:—"Please deposit your own fare. When you give the conductor a larger coin than 5c he will give you the full change or tickets. Then drop the exact fare in the box yourself. Don't carry money or tickets in your mouth. It is very unsanitary."

## Rates of Pay for Minor Supervisory Officers on Railways.

The Canadian Railway War Board issued the following circular Oct. 17 to railways operating in Canada:—

The board having been requested to advise the railways in the establishment of increased rates of pay for minor supervisory officers, and enquiry and investigation having been made in both Canada and the United States, it is suggested that the following be used as a basis in computing rates for the position mentioned:

Assistant Yardmasters.—Minimum \$175, maximum \$240, a month.

Yardmasters.—Minimum \$200, maximum \$250, a month.

Assistant General Yardmasters.—Minimum \$235, maximum \$260, a month.

General Yardmasters.—Minimum \$250, maximum \$285, a month.

It is the intention that yards will be classified as "Number 1, 2 and 3," and rates applied in accordance with such classification, subject to the minima and maxima indicated. Classification of the yards and rates to be paid, subject to the foregoing, is left to the judgment of the individual railway managements. For the four classes of positions mentioned, 2 days off, with pay, per month and 2 weeks annual vacation (after one year's service) should be allowed. No limit is placed on the day's work, that is, no overtime is to be paid in addition to the monthly rates shown. The foregoing rates and conditions will not apply where the position is included in agreement between railway and labor organization.

Assistant Superintendents who devote their time exclusively to yard terminals shall be paid in accordance with rate quoted for general yardmasters.

Chief Dispatchers and Night Chief Dispatchers.—Apply increase of 20% over rates as of July 31, 1918, with a maximum of \$275 a month.

Trainmasters.—Apply increase of 20% over rates as of July 31, 1918, with a maximum of \$350 a month and minimum of \$250. To include men designated as assistant superintendents at other than terminals.

Assistant Trainmasters.—Apply increase of 20% over rate as of July 31, 1918, with a maximum of \$300 a month and a minimum of \$200.

Road Foremen of Locomotives, Traveling Engineers and Division Master Mechanics of Superintendent's Division.—Apply increase of 20% to rates as of July 31, 1918, with a maximum of \$300 and minimum of \$200 a month.

Assistant Road Foremen of Locomotives and Road Foremen, if employed under supervision of Division Master Mechanic.—Apply increase of 20% over rates as of July 31, 1918, with a maximum of \$250 and a minimum of \$175 a month.

Travelling Firemen.—Apply increase of 20% over rates as of July 31, 1918, with a maximum of \$200 and a minimum of \$150 a month.

Division Engineers, Engineers, General Roadmasters, Superintendents of Track or Superintendents of Bridges and Buildings.—Apply increase of 20% over rates as of July 31, 1918, with a maximum of \$350 and minimum of \$250 a month.

Resident Engineers, Assistant Engineers, Roadmasters, Track Superintendents, Bridge and Building Masters, Supervisors of Bridges and Buildings and Supervisors of Signals or their equivalents.—Apply increase of 25% over rates as of July 31, 1918, with a maximum of \$225 and minimum of \$150 a month.



# Electric Railway Department

## Increases in Electric Railway Freight and Passenger Rates.

**British Columbia Electric Ry.**—A conflict has been waging between Vancouver City Council and the B.C.E.R. over the 6c fare. The city applied for an interim injunction to restrain the company from charging the fare, but the court refused the injunction and the case will come before the court in the usual way. The city council on July 8 granted the company the right to charge 6c, the company thereupon paying increased wages and settling the strike. A few weeks later, after the bylaw had been signed by the city clerk, the mayor refused to sign, intimating that he would not sign until the B.C.E.R. reduced its lighting rates. The city council then decided that it had overstepped its powers in granting the higher fare permission, and was informed by the city solicitor that it could not repeal a bylaw that was legally non-existent, but could amend it by putting it to the people by ballot. The company contended that there was a binding contract which had been performed in full by the company. On being submitted to the people on Oct. 5, the bylaw was defeated by 1,311 against and 642 for. Little or no interest was taken in the voting, because the submission of the bylaw was in doubt up to the last moment, owing to the discussion of the proposed new franchise and the proposal to withdraw. A majority of the city council is now said to be in favor of the 6c fare, but could not withdraw from their stand on the necessity of submitting the bylaw.

Following the declaration of the result of the vote, the company issued the following statement:—"We regret that the taxpayers have not confirmed the agreement between the city council and the company. There is no question that the city council on July 8 authorized this company to charge a 6c fare and it was on the strength and good faith of this authorization that the company incurred the heavy increase in expenses in the higher wage of the men and enabled the car service to be resumed. The company fulfilled its part of this contract in every particular. It paid the wages, and to put the question of the 6c fare, on the strength of which the company performed its part, to the taxpayers, was contrary to all business principles. The agreement of July 8, in our opinion, still stands and it is our opinion, having performed our part to the letter, that we have the legal and moral right to collect a 6c fare. We will therefore act in accordance with the agreement and charge 6c on the cars."

Drafts of the proposed franchise have been exchanged by the company and city. The company asked for the present franchise to be changed only as regards the fare. It proposed that the 6c fare be authorized until a public service commission, appointed by the province, should decide otherwise on application of either the city or the company. The city stipulated a 5c fare, complete control of the service and extensions, pavement of whole area of street within the tracks and for 18 in. outside, and the scale of percentages on gross earnings to the city on receipts over \$2,000,000 to be raised to 10%. The rate has been 8% up to \$2,000,000. Discussion over the terms of the franchise is still going on, the city and company being unable to agree on many

points, especially that of the fare to be charged.

The Victoria City Council, on Oct. 17, after several meetings of committees, and of the council, reached something like a basis for a revision of the company's charter. The terms have not been definitely set out, but it is reported that the city will give permission for the increase of fares if the company will grant certain concessions, but that no definite decisions will be reached until after the council has had an opportunity of examining the draft of the new agreement proposed between the company and the City of Vancouver.

A Victoria press dispatch of Oct. 28 says:—"It looks like a peaceful settlement of all the difficulties between the city and the B.C. Electric Ry., as the city council has agreed to 6c fares and made other concessions to the company."

The British Columbia Electric Ry. has applied to the Board of Railway Commissioners for authority to advance freight rates on the Vancouver, Fraser Valley & Southern Ry., 25%, on the same basis as steam railways were authorized to do recently by Dominion order in council.

**Fort William Municipal Ry.**—A joint meeting of the Fort William, Ont., Public Utilities Committee, and of the Port Arthur, Ont., Utilities Commission, was held Oct. 8, to consider the rates of fares on the electric lines in the two cities, and the line connecting them, at which it was reported that the Ontario Railway and Municipal Board could not fix a date for the hearing of an application until early in 1919.

The Hamilton Radial Electric Ry. operates a line from Hamilton to Oakville, Ont., under franchises granted by the City of Hamilton, the Townships of Saltfleet and Nelson, the Village of Burlington and the Town of Oakville. Owing to the increased cost of labor and materials, the company made application some time ago to the Board of Railway Commissioners for permission to increase its rates, and the board issued an order granting an increase of 15% in the standard maximum freight mileage tariff, 15c a ton increase on coal and an increase in the standard tariff from 2c to 2½c a mile, subject, however, to the limitations created by the Saltfleet, Nelson, Burlington and Oakville franchises. The order was published in Canadian Railway and Marine World for August, pg. 347, and the judgment in the Sept. issue on pg. 400.

On Aug. 17 the company gave notice to all the municipalities interested that as they objected to an increase in fares, it would, on and after Sept. 15, reduce its service to the number of cars each way required by the franchise bylaws, which meant a reduction in the winter service from 19 cars a day in each direction to 6. Subsequently, at the municipalities' request, the company consented to defer putting the reduced schedule in effect until Oct. 1. The matter was considered by the interested municipalities, and as a result a general conference of representatives of Hamilton, Burlington, Oakville, and the two township municipalities was held in Hamilton, Sept. 24, at which

it was suggested that the company should further defer putting the reduced schedule in operation for a month. The Burlington Beach Commission on the following day favored an appeal to the Board of Railway Commissioners for the adjustment of the timetable so as to give the greatest convenience, and on Sept. 28, the Hamilton City Council offered the assistance of its legal department in any action that might be taken. A public meeting was held in Burlington, Oct. 1, at which resolutions were passed appealing to the Board of Railway Commissioners for redress. Subsequently the board's Chief Operating Officer, G. Spencer, visited the district, and following this, on Oct. 18, the following telegram was sent to the company:—"Board desires that sufficient of service withdrawn by your changes of timetable, Oct. 1, be restored immediately to adequately take care of traffic. Schedules leaving Burlington at 6, 7 and 8 a.m., and Hamilton, 4.10, 5.10 and 6.10 p.m., with sufficient cars on each schedule, be minimum of service provided until matter can be finally disposed of."

The company resumed the customary hourly service Oct. 7, pending the hearing of the application, which was fixed for Oct. 17, at Toronto. At the hearing, the representatives of the municipalities produced the bylaws and made statements as to traffic conditions. The company admitted that the restricted service proposed by the schedule was inadequate and satisfactory neither to the municipalities nor itself, but that unless relief was given in the way of increased fares it would soon be necessary to suspend operation altogether. The curtailment of the service was made with a view to bringing home to the municipalities the seriousness of the situation. The company pointed out that there appeared to be only three courses open, viz.: (1) an increase of rates sufficient to meet the expenses of operation; (2) to cease operation and to realize on the company's physical property at the present high price of material, or (3) to adopt the service-at-cost method.

The Chief Commissioner advised the parties to get together and to try and reach a settlement. No order was issued, the board taking the matter under advisement, in the hope that it might be settled by negotiation. The company is maintaining its usual hourly service in the meantime.

**Moncton Tramways, Electricity & Gas Co.**—The New Brunswick Public Utilities Commission began hearing this company's application for authority to charge increased fares on its street railway and higher rates for natural gas, at St. John Sept. 25. A few days later negotiations were undertaken to arrive at a settlement, and the sittings were adjourned until Oct. 2, when it was announced that the negotiations had failed, and the commission adjourned the further hearing to Nov. 27.

**Montreal & Southern Counties Ry.**—Canadian Railway and Marine World for September contained copious extracts from the Chief Railway Commissioner's judgment, granting this company's application for increase of freight and passenger rates, to the same extent as permitted by the board in the case of steam



railways. The town of St. Lambert, Que., appealed to the Dominion Privy Council against this judgment, claiming that the Board of Railway Commissioners has no jurisdiction to increase the fares to be charged by the company between Montreal and St. Lambert and vice versa, as the same are governed by a notarial contract entered into Mar. 2, 1909, between the town and the company, which confirmed certain franchises and rights within the town, one of the considerations being the fixing of fares, that the contract cannot be set aside or modified without the consent of both parties thereto, and asking that the Governor General in council rescind the Board of Railway Commissioners' order and that it be declared that the contract be maintained for its full term. The petition came before the Privy Council at Ottawa Oct. 9, when argument on behalf of the parties interested was heard. The Minister of Justice reported, that having perused the petition and the reasons for the Board of Railway Commissioners' judgment, and having heard the arguments of counsel for all parties, he was of the opinion that the petition raised questions of jurisdiction and of law, and that an appeal lies from the board's order to the Supreme Court of Canada, under the Railway Act, R.S.C. 1906, chap. 37, sec. 56, subsections 2 and 3, that in such cases it is desirable that the procedure provided by said subsections should be followed, and he therefore recommended that the petition be not granted. The other members of the Privy Council present concurred in this and the appeal was dismissed. The town of St. Lambert was represented by L. A. David, K.C., and the company by W. C. Chisholm, K.C. Hon. Hugh Guthrie, M.P., W. B. Powell, General Manager, and J. P. Hudson, Accountant.

**The Montreal Tramways Co.** put into operation, on Oct. 3, the new schedule of fares as fixed by the Quebec Public Utilities Commission. Tickets for the new fares were put on sale Sept. 29, at 37 places throughout the territory served, and also by conductors and by inspectors and agents stationed at principal intersections. Unused tickets under the old schedule were redeemed at the company's offices in cash or new tariff tickets. The old blue tickets were not redeemed, it being announced that they would be accepted for fares between 6 and 8 a.m. and 5 and 7 p.m. only.

**Moose Jaw Electric Ry.**—At a meeting of the Moose Jaw, Sask., City Council Oct. 7, when the question of getting the company to repair the South Hill bridge, was under discussion, Alderman Ingram is reported to have said that it was no use the council meeting and passing resolutions and charging things up to the company, which would be unable to pay its liabilities; the street railway in Moose Jaw was operating at the same rates as before the war, and he could not understand why people should expect private capital to operate at a loss; the whole thing meant that either the council must meet the company in some way, or there would be no street railway service at all.

**Port Arthur Civic Ry.**—See Fort William Municipal Ry.

**The Toronto Ry.** applied to the Toronto City Board of Control on Oct. 9 for authority to increase its fares, saying among other things:—"We are sincerely anxious to maintain our service, and feel that owing to the prevailing abnormal conditions, we are justified in asking for the co-operation of the city in obtaining a straight 5c fare. We respectfully sub-

mit the payment of a straight 5c fare would be no great hardship to the public, and in our opinion such an increase will enable us to provide a greatly improved service." The Board of Control decided unanimously to refuse to entertain the proposal.

**Windsor, Essex & Lake Shore Rapid Ry.**—A. Eastman, Vice President and General Manager, issued a circular to the company's patrons recently, in which he said:—"On Sept. 1 a new passenger tariff becomes effective. Owing to the tremendous increase in costs of material and labor we cannot continue to operate the railway unless our receipts are materially increased. Under the new tariff the one-way fare remains as previously, on a basis of 2½c a mile. The slight changes in round trip fares have been made to conform with the regular round trip basis as used on steam railways. The increases in special and funeral car movements are necessary in order that this service will not be performed at a loss to the company. The family commutation books have been eliminated, as we find it is impossible to carry passengers at a rate of 1¼c a mile. For persons living along our line and whose business is located at another point and who will make a round trip daily, we have placed on sale the individual 54-ride monthly commutation book at a better rate than was given under the family commutation book.

"In order that our patrons may know something of the financial difficulties under which we are trying to operate, I give herewith a statement of our losses from operation this year. Commencing with Jan., 1918, our monthly deficits have been as follows: Jan., \$7,511.99; Feb., \$3,522.27; March, \$152.50; April, \$4,096.01; May, \$5,382.91; June, \$2,968.57; July, \$4,469.43. A total deficit for 7 months of \$28,103.68. This serious loss is accounted for by a general decrease in passenger traffic, owing to border restrictions, the general use of the automobile, general war conditions and a doubled increase in operating expenses.

Our pay roll has almost doubled during the past five years. Our fuel bill has increased from \$700 a month to almost \$2,100 a month at the present time."

After giving particulars of increases in cost of materials, supplies, etc., ranging from 40% to 300%, the circular continues:—"You will readily see from the above that it is impossible to continue to operate at the same rate of fares as has been charged during the past 10 years. At present our average earnings per passenger is 22½c each. We had hoped the summer season would bring with it the usual increase in passenger traffic, but this has not developed to the extent we had expected and we now find it necessary to increase our earnings if we are to continue operations and to maintain track, overhead and equipment. Practically all steam and electric railways both in the United States and Canada have increased passenger and freight rates, in some cases to the extent of 40%. These increases have been approved by the Interstate Commerce Commission or the Board of Railway Commissioners after careful investigations.

"I believe it is admitted that the installation and operation of the W.E. & L.S. Ry. has resulted beneficially to the communities through which it runs, and we appreciate your past patronage and hope during these trying times special consideration will be accorded our efforts to provide a service, and every assistance will be given in order that it will not be

necessary to make any further advances in rates in order to continue operation."

**Winnipeg Electric Ry.**—It was stated in Canadian Railway and Marine World for October that the company had advised the city council, Sept. 10, that it was preparing to ask for authority to increase its fare to 7c, with unlimited transfers as at present, or in the alternative for a fare of 6c, with a charge of 1c for transfers. This information was given in a press dispatch from Winnipeg dated Sept. 11, but we were advised on Sept. 28, after our October issue had gone to press, that the report was incorrect.

The company applied to the city council for authority, on Oct. 18, to charge 6c an adult passenger within the city, to sell school children's tickets at 7 for 25c, and to abolish all other fares. For fuller particulars, see "Winnipeg Electric Railway Wages, Revenues, etc., on another page of this issue.

An unconfirmed Winnipeg press dispatch of Oct. 26 says:—"The city council decided this afternoon to put the question of an advance in street railway fares up to the Public Utilities Commission. The 6c fare will likely be recommended. An offer by the company to sell out to the city immediately, for a figure based on the physical valuation of the company, was made to the council."

### Vancouver Jitneymen and the British Columbia Electric Railway.

While a number of jitneymen have been fined in Vancouver police court for minor infractions of the traffic bylaws, the cases against others were adjourned upon the technical point of the summonses having been issued by the city while the temporary injunction affecting the matter was in force. This point was taken into consideration by the police magistrate, who dismissed the cases subsequently on the ground that the informations had been laid in contempt of court.

Owing to the congestion of traffic, it is impossible, it is said, to operate the service without breaking these regulations. When the cases were called on in the police court, Oct. 9, about 80 of them were withdrawn, it being shown that the bylaw provided that the company "shall" do certain things, but that no penalty is provided for if these things are not done. In regard to the remaining nearly twenty cases, it was argued that it was the crews of the cars who should be proceeded against and not the company. The police magistrate adjourned the cases to consider this point.

The Blue Funnel Motor Line on Oct. 3, in conjunction with W. Whalim, who describes himself as pastor of South Hastings Methodist Church, and who operates a jitney, initiated an action in the B.C. Supreme Court, against the city and the B.C.E.R., asking for a declaration that all the anti-jitney legislation is invalid, and for an injunction to prevent the enforcement of the city bylaw prohibiting the operation of jitneys on city streets. The application was dismissed on a technicality Oct. 5. The application was renewed Oct. 9, and finally refused by Judge Morrison, Oct. 15.

The Nova Scotia Public Utilities Commission met at Halifax recently to investigate the condition of service, rolling stock and other equipment of the Nova Scotia Tramways & Power Co.'s electric railway lines in that city, in regard to which complaints had been filed.



## Winnipeg Electric Railway Wages, Revenues, Etc.

The Minister of Labor, on Sept. 13, appointed a board of conciliation and investigation to inquire into matters in dispute between the Winnipeg Electric Ry. and its conductors and motormen, the board consisting of Isaac Pitblado, K.C., representing the company; R. S. Ward, representing the men, and Chief Justice T. G. Mathers as chairman.

It was shown at the meetings that as the result of a board of conciliation which met in May, 1917, the rates of pay for a year from May 1, 1917, to April 30, 1918, were fixed as follows per hour: First 6 months, 28c; second 6 months, 30c; 2nd year, 31c; 3rd year, 33c; thereafter, 36c.

In Feb., 1918, a new agreement was entered into between the company and the men, which provided that if the jitney competition was abolished by Mar. 31, 1918, the following increased rates of wages would be paid from May 1, 1918: First 6 months, 30c; second 6 months, 32c; second year, 33c; third year, 35c; fourth and succeeding years of continuous service, 39c. The jitney competition was eliminated and the new rates went into effect May 1, 1918.

Notwithstanding the agreement, the conductors and motormen's secretary and business agent wrote the company's General Manager Aug. 26, 1918, asking that the following wages be paid on and after Sept. 15: First 3 months, 47c; next 9 months, 55c; thereafter, 60c; overtime to be paid time and a half.

The company's General Manager replied on Aug. 29, that an agreement governing the rates of wages was in existence and would not expire until April 30, 1919, that the wages asked were entirely exorbitant and far exceeding the rates of pay received by men in similar employment and under similar conditions, and that to accede to the demands would be to put the company into immediate insolvency.

On Sept. 3 the men applied for a conciliation board, which was granted by the Minister, as stated above. Following are the principal portions of the board's unanimous report:

"The first question which confronted the board was the existence of the agreement of Feb., 1918. It was felt that no countenance could be given to the idea that employees were at liberty to disregard their solemn engagements, and that where an agreement had been entered into, no board had the right to say that either party should be absolved from its binding effect, however much the conditions may have changed since it was entered into, or either party desired to have it charged. It was pointed out to the men's representatives that both their initial letter to the company's General Manager and the letter to the department, applying for a board, contained an intimation that they would disregard their agreement if their requests were not granted. Mr. Sinclair, on behalf of the men, disclaimed any right to break their agreement. He asserted that they held themselves bound by its terms and that all they meant by their application for a conciliation board and all they asked was an opportunity of showing that, owing to the rapid advance in the cost of living, the present scale of wages was inadequate to supply them with a reasonable living, and that the company ought to substitute for the present rates whatever rates the board should decide to be fair and reasonable. The attitude of the

company's General Manager was that the men were bound by the agreement entered into, but as the Minister had so far acceded to the request of men as to grant a conciliation board, he felt it to be the company's duty to lay its case before the board.

"The men's demands were based solely upon the inadequacy of the present rate of wages, owing to the high cost of living. In support of their demands, the men presented to the board statements showing the Winnipeg prices of the various necessities of life and the great increase which had taken place in such prices in recent years. On behalf of the company, it was pointed out that the present rate of wages paid to motormen and conductors by the company was higher than that paid by any other street railway company in Canada, with the exception of Windsor, Ottawa and Vancouver. The rates paid in other cities were as follows:

	Junior.	Senior.
Montreal .....	31	37
Toronto .....	30	37
Hamilton .....	30	37
Port Arthur .....	30	36
Fort William .....	30	36
Hull .....	29	36
London .....	30	35
Windsor .....	36	41
St. John, N.B. ....	30	36
Ottawa .....	35	39
Halifax .....	—	32½
Vancouver .....	40	51

"In the case of Ottawa, the rates were established by the unanimous decision of the labor appeal board rendered on Aug. 23, and the St. John rates by the majority report of a conciliation board dated Aug. 6, concurred in by the chairman and the labor representative, the company's nominee vigorously dissenting. In each of these cases the employees were represented by Mr. Sinclair, and the evidence as to the cost of living adduced before these boards was of the same general character as that presented to us. The above mentioned rates of pay have in the great majority of cases been established within the past four months, either by the award of a conciliation board or the agreement of the parties, and it will be noted that with respect to all of them, except in the cases of Windsor and Vancouver, which were affected by exceptional local conditions, the rates are (except in the case of Ottawa) lower than those at present in force in Winnipeg.

"It appears by the evidence before us that the company has paid no dividend to its shareholders since Dec., 1915, and at the present time, notwithstanding the elimination of the jitney competition, the operating expenses and fixed charges of the railway exceed by several thousand dollars per month the railway's actual earnings, and that there is no source of revenue from which increased wages can be paid. The company also furnished us with evidence of the general rate of wages paid in other occupations in the city, and, as to the increased cost of living, relied upon the tabulated statement prepared by the Labor Department published from time to time in the Labor Gazette, and also a statement furnished by the Labor Department as to the increased cost of living in Winnipeg. The employees claim that although the present scale of wages was arrived at by agreement in 1918, the then existence of the jitney competition was a matter considered by them, and that they were induced to enter into the agreement because they believed it was the best they could do under the circumstances, and they claimed the right to go

back to 1913 and take into consideration the enhanced cost of living since that time. The company's representatives, on the other hand, contended that if the 1918 agreement is to be ignored, the starting point for any readjustment of wages should go no further back than the date of the 1917 agreement, and that all the men ought to receive by way of increased wages would be sufficient to take care of the increased cost of living since that date. The board has carefully considered the 1918 agreement and the increased cost of living since its date; the 1917 agreement, and the increased cost of living since its date, and the increased cost of living from 1913 to 1918, and has taken account of all these factors in the recommendation hereinafter contained.

"Further, it appears that in the case of Ottawa Electric Ry. men, the labor appeal board was of opinion that an increase of 9c an hour over the rates existing there in 1916 would be sufficient to take care of the increased cost of living, the resulting scale of wages being: junior men, 35c per hour, and senior men 39c per hour. The cost of living in Ottawa, according to the Labor Department statistics, is about 3 less than in Winnipeg. Formerly there was a much larger difference in the cost of living between Ottawa and Winnipeg, so that the percentage of increase has been greater in Ottawa than in Winnipeg. The Ottawa Electric Ry. employees received an increase of 3c an hour in 1916, whereas from 1913 to 1916 the Winnipeg Electric Ry. men received no advance. In order, therefore, to place the Winnipeg employees upon a level, in so far as increases in wages are concerned, with those in Ottawa, it would be necessary to add 12c an hour to the wages paid in Winnipeg in 1916, which were, per hour: For the 1st 6 months, 25c; for the 2nd 6 months, 27c; for the 2nd year, 28c; for the 3rd year, 31c; for the 4th year and after 34c. If 12c an hour is added to this scale, the result would be 37c, 39c, 40c, 43c and 46c.

"In awarding 9c an hour to the Ottawa employees, the Labor Appeal Board said: 'The board is of opinion....having regard to the increased cost of all commodities, while making allowance for the economies now practised by all, as well as for the substitution of cheaper commodities, that conditions would be fairly met as regards the men by granting motormen and conductors an increase of 9c an hour over existing rates.'

"We have carefully considered the whole situation and have spent several days since the hearing of the parties was concluded in anxious and earnest deliberation with a view of arriving at something upon which we could all agree and at the same time be fair to both the company and the men. Notwithstanding that with its present revenue the company is unable to pay even the present rate of wages, we think its employees should be paid fair living wages and that increase of revenue must be sought for to enable the company to perform this duty towards its employees. In addition to asking for increased wages, the men asked that the period to elapse before the maximum wage is obtainable be reduced. We think that some concession in this regard ought to be granted by the company. Upon a review of the whole situation, our recommendation is that the company put into effect on and from Oct. 1 the following scale of wages per hour: For the 1st



6 months, 39c; for the 2nd 6 months, 41c; for the 2nd year, 44c; for the third and succeeding years of continuous service, 47c. The men also asked that they be paid at time and a half for overtime. We think this is reasonable and should be consented to by the company.

"We recognize the fact that in order that the company may be able to pay these increased wages an increased revenue must be obtained. Bulletin 26, issued by the American Electric Railway Association War Board, Aug. 1, 1918, contains this statement: 'With respect to the relation of the wage increases granted today to the financial conditions of the companies concerned, the arbitrators made the following statement and recommendations in each case: 'This increase in wages will add substantially to the operating costs of the company and will require a reconsideration by the proper regulating authority of the fares which the company is allowed by law to collect from its passengers . . . This is not a question turning on the history of the relations between the local street railways and the municipalities in which they operate. The just claim for an increase in fares does not rest upon any right to a dividend upon capital long invested in the enterprise. The increase in fare must be given because of the immediate pressure for money receipts now to keep the street railways running so that they may meet the local and national demand for their services. Overcapitalization, corrupt methods, exorbitant dividends in the past, are not relevant to the question of policy in the present exigency. In justice the public should pay an adequate war compensation for a service which cannot be rendered except for war prices. The credit of these companies in floating bonds is gone. Their ability to borrow on short notes is most limited. In the face of added expenses which this and other awards of needed and fair compensation to their employees will involve, such credit will completely disappear. Bankruptcy, receiverships and demoralization, with failure of service, must be the result. Hence our urgent recommendation on this head.'

"We adopt the above quoted extract as our own. The present financial situation of the Winnipeg Electric Ry. Co. is not different from that of a great many other street railway companies in the United States and Canada.

"With respect to the duration of the present agreement, we would recommend that some such provision as is embodied in the report of a conciliation board between the Canadian Northern Express Co. and its employees, published in the Labor Gazette for September should be adopted, and for the reasons stated in that report. We therefore commend to the favorable consideration of the parties the following as an addition to their existing agreement: 'That the new rates of pay shall continue in force until terminated by a 30-day notice by either party, after the conclusion of peace between Great Britain and her present enemy nations, and that until that time there shall be no strike of employees and no lockout by the employer: provided that there shall be a revision of the wage scale at the expiration of every six months hereafter, if it appears that since the last revision of wages there has been a general increase in the cost of living of 10% or more, in which case an increase of wages shall be granted sufficient to absorb such increased cost of living. The cost of living statistics tabulated by the Labor Depart-

ment and published in the Labor Gazette after the expiration of such 6-monthly period shall be accepted as conclusive as to the fact of such increase, if any, and the extent thereof; provided further that should any dispute take place as to the interpretation of the existing rules and regulations, or as to the right of any employee or employees to an increase or the amount thereof, in accordance herewith, or as to carrying out the existing rules, the parties agree to refer the same to the labor appeal board, or to a conciliation board appointed under the Industrial Disputes Investigation Act, 1907, if the employees prefer the decision of such latter board. In the event of an application being made for a board under the said Act, the application may be made by either party, and in such application it shall not be necessary to make the statements required by sub-section 1 (b) of section 15 of the said act, as amended.'

#### The Company's Application for Higher Fares.

On Oct. 18 the company forwarded a petition to the city council over the signatures of Sir Augustus Nanton, Vice President, and Lawrence Palk, Assistant Secretary, in which it said, among other things:—"Since the outbreak of war, operating costs, including labor and material necessary for rendering your petitioner's service to the public, have largely increased; such costs are increasing daily, and it is believed will continue; the amount of the increase which is being experienced generally through all lines of business is such that the prices, rates, fares and charges fixed by custom or law prior to the outbreak of the war are no longer fair, just or reasonable, and such costs are increasing with such rapidity that unless your petitioner is afforded some relief and is permitted to increase its revenue derived from transportation, it will be forced into bankruptcy. By awards of boards of conciliation which have recently been sitting to hear applications for increased wages by some of our employees, the company's pay roll will be increased by \$361,952.42 annually. Increased pay is constantly being asked for in all branches of the company's street railway undertaking. In order to meet increased wages provided for by such awards, other increases which the company has to pay to its employees in other departments and increased cost of material, the total amount of the operating cost of the railway will be increased by \$600,000 annually. Annexed is a financial statement for the period from Jan. 1 to Sept. 1, 1918, which shows a deficit in your petitioner's street railway department of \$21,207.59, after providing for operating costs and fixed charges; and another statement based upon the findings of the boards of conciliation above referred to, and other increases in wages and uncontrollable expenditure, which shows that had the scale of wages recommended by the said boards, and the other increases above referred to, been in effect during the said period, the deficit would have amounted to \$421,207.59 for the eight months, or \$631,811.38 for the financial year ending Dec. 31, 1918.

"It has been repeatedly laid down that it is a duty resting upon the public authorities to secure to the company an adequate rate for the services rendered, which rate should yield sufficient to maintain the service, preserve the property from deterioration, and reward the investors with a fair return upon their outlay, and that the public has no right to be carried at less than cost. Your peti-

tioner proposes that it should be allowed to charge 6c a passenger for the carriage of adult passengers within the City of Winnipeg, and school children's tickets at the rate of 7 for 25c, and that all other fares be abolished."

As a meeting of the city council held Oct. 18 was a special one for the purpose of passing accounts, the company's application was not dealt with, and on Oct. 19 the company issued the following statement:—"Since sending our petition to the city council yesterday, we have heard nothing from them. Pressure is being brought to bear on us by our bankers, who have refused to allow us to increase our debt to them, and who say they will no longer carry us with this great increase of \$50,000 a month facing us. On the other hand, the motormen and conductors are demanding that an immediate decision be given them, and the increased wages put in effect. The company should have an immediate decision from the city council, and if a special meeting is not called to deal with our petition, we will ask them to call one as soon as possible, as the situation is a serious one."

It was reported, Oct. 23, that the men accepted the board of conciliation award, while the company stated it would be forced to refuse it, unless the city council would grant immediate relief by allowing the higher rate of fare asked.

Winnipeg, Oct. 29.—Members of the street railway union declared today that they will go on strike unless they receive the increase in wages granted them by the board of conciliation. The board made the award retroactive as from Oct. 1. The company contends that the increase cannot be paid until the privilege of advancing car fares is granted by the city council.

Winnipeg, Oct. 30.—The Winnipeg Electric Ry. will be permitted by the city temporarily to charge a flat 5c fare, except for children's and workmen's tickets, which will be sold at 8 and 6 for 25c respectively. An exhaustive investigation of the company's business is to be made by the Public Utilities Commissioner to establish whether the increased rates are to be permanent. The city's action will avert the threatened strike of motormen and conductors, set for Friday.

Ottawa Car Stops.—The Ottawa Board of Police Commissioners issued the following statement Oct. 4: "In view of the representations made to this board by the Ottawa Electric Ry., that by the terms of the contract between the city and the company, the company is required to stop their cars over the last crossing of street intersections, and that the company is willing to make the desired change if requested so to do by the city council, the board decided to suspend the operation of the bylaw in the meantime, in order that the company may obtain the consent of the city council to the change recommended by the board."

The Hydro Electric Power Commission for Ontario has ordered a no. 2, double end, double track snow plough, equipped with flanges for right or left hand running, from Canadian Car & Foundry Co., for delivery early in December. The plough will have a clearance height of 15 ft., and is being built at the company's Amherst, N.S., works.

The Pictou County Electric Ry. was reported recently as contemplating closing down its electric railway in Nova Scotia, owing to shortage of fuel for its power plant.



# Electric Railways' Service-at-Cost Campaign for Ontario.

Herman H. Pitts, of Ottawa, one of the Toronto Ry. directors, has, as Secretary of the Association of Holders of Public Utility Securities, issued the following circular to shareholders of the Toronto Ry. and other electric railways in Ontario:—

"In view of the increasing difficulty of financing street railways in Ontario and of giving the public adequate service, and also in view of the expiring franchises bringing the whole subject of urban transportation before the public for immediate action, it has been decided to form an association of Ontario Public Utility Security Holders. The object of the association is to interest all bond and stock holders in a campaign of publicity as to the actual conditions prevailing and to promote a plan to meet the emergency. The co-operative scheme, or as it is usually called, 'Service-at-cost,' has proved to have in it the remedy. It is fair and equitable to all parties. It gives all the advantages of public ownership while eliminating all the defects. It guarantees the shareholders a fixed rate of interest, provides for necessary improvements and extensions and offers efficient and economical management.

"Under separate wrapper will be found a number of copies of a brief summary of the plan. Your assistance would be appreciated in securing as many as possible of the officials of your financial institutions, business men, and all persons holding shares or bonds of any public utility, as members of this association, and as endorsing the service-at-cost plan as set forth in the summary sent you. It is therefore suggested that if you approve of the policy in view by this association that you should sign yourself and have signed by other holders of public utility securities the enclosed list of membership. This is done for the purpose of grouping together the thousands of such securities who are now represented by a comparatively small number of companies, but who count in the thousands, and whose moral support and personal sympathy and propaganda are of paramount usefulness in an educational campaign of such magnitude and importance. When signed, please return the lists to me."

The form which recipients of the circular are asked to sign is headed:—"We, the undersigned, are in full sympathy with the Association of Holders of Public Utility Securities, more especially with its object of promoting service at cost, whereby the public may be impressed with the advantages of this system or of any other modern and progressive policy of co-operation between the public utility owners and the public they serve. It is understood that no financial obligation in any way attaches to my membership in this association."

The following printed matter was enclosed with the circular:—

## How Will Service-at-Cost Affect Street Railways?

Investors in public utility securities in Ontario are facing a very grave situation, due to the abnormal conditions created by the war, and other causes. Especially is this felt by shareholders in street railway companies, who see their securities dropping in value, and the cost of operating the roads steadily increasing, while the revenue remains practically station-

ary. Expiring franchises in nearly every city, and a propaganda for municipal ownership, bring the question forward for immediate solution. In this connection Canada is no different from the United States, where for several years the street railway situation has been acute, and war conditions have made it obligatory in many cases for state legislatures to step in and pass special legislation to enable the companies to increase their fares, and thus prevent insolvency, and a complete collapse of the systems.

Probably no state in the Union was more affected than that of Massachusetts, where the electric railway systems were in such a desperate condition that state remedy had to be applied at once. A special commission was appointed by the commonwealth to make a thorough investigation on the problems relating to street railways, and after a most exhaustive inquiry into facts, and investigation of all the details of operation and management, the commission made a full report on Feb. 1, 1918, recommending the adoption of a co-operative plan, which it designated service-at-cost. As their conditions were so similar to those in Ontario, and their recommendations so well adapted to the needs of the times here, they are worthy of special consideration. The commission sets forth its findings as follows:

1. The establishment of a sliding scale of fares, so arranged that when the schedule of fares in operation does not yield a revenue sufficient to pay the cost of the service the next higher schedule of fares shall become effective, and so that when the fares yield a revenue greater than the cost of service a corresponding decrease in the rate of fares shall be made.

2. The creation of a reserve fund, which shall be raised by each street railway accepting this plan, and which shall serve as a balance wheel on the system, so that a rapid fluctuation of fares, due to seasonal or other conditions, may be eliminated.

3. The establishment of a depreciation and maintenance fund, so that the street railway properties shall be kept up at all times to the proper operating efficiency, and so that new and improved types of equipment may be purchased as the art of street railroading advances.

4. Provision for the rehabilitation, extension, and improvement of lines during a period of years following the acceptance of this plan.

5. A director to be appointed by the Governor of Massachusetts to the board of directors of each street railway operating under this plan.

6. Supervision of the street railways accepting this plan by district representatives, appointed by the Governor or by the Public Service Commission; these local supervisors to report to the Public Service Commission or to a special department thereof; the expenses of such supervision to be borne by the street railway companies but in no case to exceed a certain fixed percentage of the operating expenses of the individual companies.

7. Provision for arbitration proceedings relative to certain conditions which might arise.

8. Provision whereby the state, or any political subdivision thereof, may purchase the entire property of a company, accepting this plan at its determined investment value, or under any other pro-

vision of existing or future statutes.

9. A return to the investors of 6% a year on a fixed investment value, the amount of such investment value to be determined by the Public Service Commission, and to include such sums as have been prudently and honestly invested and conserved with proper diligence, due consideration being given to the present physical condition of the property; the investment value from time to time to be increased by such sums as the Public Service Commission shall certify have been prudently spent and are properly chargeable to capital.

10. The acceptance of such a plan to be optional with the individual companies.

11. Legislation allowing the Boston Elevated Ry. (including its leased lines) to accept this plan.

12. In case the service-at-cost plan is accepted by any street railway company, such funds as the Public Service Commission shall consider necessary for the establishment of the reserve, depreciation, and rehabilitation funds, or for improvements immediately necessary shall be raised by an issue of capital stock, either preferred or common.

## How Service-at-Cost Has Benefited the Cities Where Adopted.

Every city adopting service-at-cost sends the same answer; i.e., that it has established the value of tramway securities, and the credit of tramway companies, making it possible for the companies to rehabilitate their roads, make needed extensions, and give a more satisfactory service. It has furnished the public with what they have been demanding, and they have only had to pay for the actual service they have received. It has given the public control of their street railway systems just as fully as if they had been municipalized. It has given experienced management, and transportation at actual cost, and at the same time doing away with long-term franchises, thus making it possible for the municipalities to purchase the entire system without any delay, and at a fair value, at any time they feel so disposed.

It is difficult to conceive of more bitter opposition than existed against the tramway companies a few years ago in those United States cities now under the service-at-cost system. This hostility has been entirely changed, and the public now feel the railways are being run in their interest to supply their needs.

In Massachusetts several acts were passed this year, embodying the principles set forth in the Public Service Commission report. The railways at once came under the acts, and have already secured the confidence of those they serve.

It is quite evident something must be done at once in Canada to relieve the intolerable situation, caused mainly by the war. Service-at-cost is commended to your careful study and endorsement, as the solution. It is the only scheme so far presented that deals fairly, honorably, and reasonably with all parties. It has had the hearty endorsement of the press, boards of trade, municipal councils, and other public bodies in the United States. It is making good. In operation it has been accepted with satisfaction by all concerned.

Ernest P. Fredericks, who had charge of the service-at-cost campaign in Massachusetts, as Publicity Manager for the



Association of Owners of Massachusetts Street Railway Securities, has been engaged to take charge of the Ontario campaign and has opened an office in Toronto.

### The Winnipeg Electric Railway's Management.

The Winnipeg Free Press of Oct. 2 said:—"It is just twelve months ago since A. W. McLimont assumed the office of General Manager of the Winnipeg Electric Ry. Under his administration good progress has been made towards improving the street car service of Winnipeg, and to this end he has built up an organization which has for its one purpose the supplying of a service equal to the demands of the public. The year of administration is featured not only with improved car service, but also improved public relations, there being a more cordial feeling between the company and the public authorities today than has been the case in the past. This is due in large measure to the new organization, which is imbued with the desire to co-operate with the public.

"In addition to introducing a number of innovations, such as reconstruction of rolling stock, and the provision of trailers, Mr. McLimont is making the utmost effort to bring the service up to the maximum efficiency. During the past year he has co-operated with the city parks board, with a view to popularizing the city parks, and it is stated that as a direct result of his policy more Winnipeg people flocked to the parks for recreation and health giving exercises this year than has been the case ever before. The opening of River Park is but a part of the programme Mr. McLimont hopes to carry into effect in this regard next summer."

### Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—At the Brantford, Ont., City Council's meeting, Oct. 15, notice was given of the introduction of a bylaw to provide for raising \$100,000 by debentures to extend the street railway tracks in the Terrace Hill district, the bylaw to be submitted for the ratepayers' approval at the municipal elections Jan. 1. The estimated cost of the proposed extension is \$28,000 a mile, exclusive of equipment. The exact route has not been finally determined.

**British Columbia Electric Ry.**—The Vancouver City Council is reported to have granted a permit for considerable alterations and some new construction at the company's station on Carroll St. The estimated cost of the work is \$5,000.

**Moose Jaw Electric Ry.**—At a meeting of the Moose Jaw, Sask., City Council, Oct. 7, a letter was read from A. H. Dion, Superintendent, Moose Jaw Electric Ry., stating that the question of repairs to the South Hill bridge would be considered by the directors at an early date. Several suggestions were made in regard to the matter, and it was agreed to call a special meeting to consider the whole question. Several of the aldermen expressed the opinion that the city might repair the bridge to make it safe for traffic, while others contended that the only solution of the difficulty was to make a new contract with the company. (Aug., pg. 348.)

**Regina Municipal Ry.**—Commissioner Thornton is reported to have informed the Regina, Sask., City Council, Oct. 1, that

the cost of maintenance and upkeep of the overhead system of the municipal railway for the first eight months of this year was \$1,835.09, against \$1,747.27 for the same period of 1917, and \$1,199.20 for the same period of 1916. The amount spent for material during this year was

10% less, and cost of labor was 10% more than for 1917. (July, pg. 308.)

**Toronto & York Radial Ry.**—We are officially advised that the company is contemplating building a small car barn for its Scarboro division, in the Scarboro Tp. (Jan., pg. 32.)

## The Regina Municipal Railway Investigation.

Judge Hannon, who completed hearing evidence into conditions on the Regina Municipal Ry., at Regina, Sask., Sept. 16, presented his report to the city council Oct. 15. The extent and scope of the investigation were given in detail in Canadian Railway and Marine World for July, pg. 305. All the evidence available was secured prior to the close of the investigation, the only other possible witness, Dr. Rose, being overseas. In his report Judge Hannon refers to the fact that an effort was being made to get the evidence of this witness, and states "when that has been laid before me, I shall forward it to you with such further comment as is necessary."

The report, a lengthy one, deals in detail with the ten questions submitted for consideration. A summary of the answers to these questions shows that while there were three sources of suspicion, there was no evidence to show that tickets were improperly used; that there had been no gross carelessness in the handling of tickets, and that if there was any illegitimate use of tickets at all, it must have been of the smallest and most limited proportions. So far as the system of accounting is concerned, the finding is that it was put in force by the City Treasurer's department, from which a slight variation was made in 1915. Since the beginning of this year, certain changes had been made in the method of dealing with the apportionment of the contents of fare boxes where a car is being transferred from one run to another without the fare box being changed, and also in regard to the burning of tickets daily instead of three times a week. The report says that mechanical and traffic conditions are highly satisfactory, especially in comparison with systems of corresponding size, and particularly with reference to the basic conditions under which the Regina Municipal Ry. is operated; additional car bar accommodation, especially for repairs, is desirable, and an auto repair truck for overhead work might be usefully employed, but present financial conditions are not favorable to providing them. The stationing of inspectors at central points would require the employment of more inspectors. The management agreed that the suggestion of having inspectors more accessible than at present is both feasible and desirable, and the judge expressed the hope that it would not escape their attention when financial conditions were more favorable. A point not covered by the question submitted had to do with the fact that there is no service direct to the front of the union station, and Judge Hannon said the matter should be closely watched with a view to arranging for such a service.

There is not the faintest hint, says Judge Hannon, of the lessening to any appreciable extent of the efficient operation of the system by the attitude of the management to the men, nor is there a lack of co-operation or a spirit of disloyalty on the part of the men, engendered by lack of confidence on the part of the council or the public or otherwise

to the management. In detail, the judge paid a very high tribute to the whole body of employees, and added: "Such men as these, loyally supporting the capable management, will give the best that can be given by the R.M. Ry., and I think the public should know the fact." Judge Hannon pays a special tribute to Superintendent Houston and Commissioner Thornton. Of the former he says: "From what I saw of him, and more particularly from what I gathered from the stories of his men, and from the evidence as a whole, I came to the conclusion that he is a very competent, careful, well-balanced, prudent and just manager, and I believe that the longer he remains in control the greater will be the trust and confidence reposed in him by his men and the citizens of Regina." In regard to Commissioner Thornton, the judge says: "The city possesses in him an invaluable man, of the purest motives and the highest qualities, who is rendering daily a quality of service for which he can never be adequately recompensed."

The judge points out that the situation offers an opportunity for a man who would appear great in the eyes of the ratepayers to start out and abuse everything about the line, and adds that if any of Regina's public men took this course and made the railway the football of municipal politics, they would be doing it all the harm they could possibly do.

No officer, servant or employee of the street railway, or anyone connected in any way therewith, has been guilty of dishonesty, negligence or incompetence in the discharge of his duties.

It was intended that expert evidence was to have been given, but this was not available, beyond what came from employees of the department. The judge expresses the opinion that upon the evidence laid before him a very excellent showing was made under very difficult circumstances in the effort to get the very largest revenue consistent with giving satisfactory service. As to possible improvements, he had no doubt such questions as one-man cars, skip stops, higher rates, etc., were under the careful consideration of the management and of the council.

In conclusion, he said: "There are numerous sources of legitimate pride in this utility. There is a good overhead system, well maintained; there is an excellent roadbed of superior construction; there is a good car equipment; there is an excellent, eminently trustworthy, capable management; there is a splendid body of employees; in adverse conditions a very fine and increasing profit over operating expenses has been made; at the same time a very reasonably satisfactory service has been maintained. The individual citizen, if he turns his mind that way, will think of other sources. Let us take a pride in our own street railway."

The British Columbia Electric Ry. is reported to have agreed to carry free all returned soldiers who have lost an arm or leg.



### The Ottawa Electric Railway's Franchise.

T. Ahearn, President, is reported as having said in a recent interview: "The company has taken the position that with the franchise expiring in 1923, it is not reasonable that we should, at this late date, be expected to make further extensions which would entail large capital expenditure. We have before stated that if the corporation wants further extensions, it should, as early as possible, determine the policy that will be finally adopted in dealing with the street railway question. But if this determination is left until the expiration of the franchise, the company would not be warranted in making extensions then any more than today, because the Railway Act provides that if the City of Ottawa does not acquire the physical assets of the railway, as provided in the contract, the franchise will automatically continue for a further period of 5 years. So that, at present the company has five years franchise in sight, which, as I have stated, does not warrant us in making any large capital expenditure, and at the expiration of the franchise if the city does not take the property over, a further term of five years will be in sight, which in turn will not warrant any large capital expenditure. It is obvious therefore to any reasonable person that the city should determine what it is going to do, rather than permit the situation to drag along, approximating a stalemate. The company's object in suggesting the appointment of a committee was to provide the city council with a practical suggestion that would enable it to get somewhere, but as I said before, with the municipal elections near, there will be nothing doing."

**Working Men's and Women's Tickets in Quebec.**—The question of what is a "workman," who is entitled to travel on an electric railway on a reduced fare, where such is in force? has been raised in the City of Quebec. The Quebec Civil Code says: "The word 'workman' means artizan and all those in general who earn their living by manual labor." This is the meaning which the Quebec Ry., Light & Power Co. put on the term when it granted a reduced fare for workers' tickets for men. The city council having specially requested that these tickets be sold to women as well as men, the company complied, but it limits them to what it considers bona fide working women, and does not include clerks in stores, banks, etc., stenographers, typewriters, saleswomen, etc. The company is said to be considering cancelling the privilege given to working women, as it is being abused, practically all females wanting to use the tickets between 6 and 8 a.m. and 5 and 7 p.m. on week days. The original reason for giving a special workmen's rate was for the purpose of creating travel at times when there was practically no other business, and when such traffic could be confined to a few special routes. These considerations do not prevail to the same extent as they did 20 or more years ago.

Owing to the epidemic of Spanish influenza, street car service in every city in Canada has been affected. In Regina and Moose Jaw, Sask., and Calgary, Alta., the service was entirely suspended on Sunday, Oct. 20.

Toronto Ry. had 1,284 employes at the end of September, against 1,635 at the same period of 1917.

### Mainly About Electric Railway People.

F. M. Shaw, of the accountant's department, Moncton Tramways, Electricity & Gas Co., died at Moncton, N.B., Oct. 15 from pneumonia.

G. Gordon Gale, Vice President & General Manager, Hull Electric Co., has recovered from an attack of pneumonia. One of his brothers died of double pneumonia in Quebec, Oct. 20.

T. L. Robinson, who was in charge of the remodelling of the cars and trucks of the Winnipeg Electric Ry., and prior to that was in McGuire-Cummings Mfg. Co.'s service in Chicago, Ill., died in Winnipeg recently from influenza.

H. C. Foss, a former Manager of the Cape Breton Electric Co., Sydney, N.S., and latterly acting Manager, Savannah



A. Gaboury.

Superintendent, Montreal Tramways Company, and Vice President, Canadian Electric Railway Association.

Electric Co., Savannah, Ga., has been appointed acting District Manager, Southeastern District, Stone and Webster Corporation.

W. H. Moore, who resigned the secretaryship of the Canadian Northern Ry. recently, as stated in Canadian Railway and Marine World for October, continues as General Manager, Toronto & York Radial Ry. He has removed his office from the C.N.R. Building, Toronto St., to the Mackenzie-Mann new offices, 43 Victoria St.

A. C. Johnstone, accountant, Chatham, Wallaceburg & Lake Erie Ry., died at Chatham, Ont., from pneumonia, Oct. 5. He was born at Edinburgh, Scotland, in 1875, and first entered railway service in Winnipeg, as office boy to D. B. Hanna, now President, Canadian Northern Ry. He was subsequently, for some time, in service in Buffalo, N.Y. In 1913 he entered C.N.R. service at Toronto, and in 1915, transferred to C.W. & L.E.R. service, as accountant at Chatham, Ont.

### Zone Fares for Increased Revenues.

Canadian Railway and Marine World for September contained a suggestion from a correspondent, regarding the adoption of a zone system of fares on electric railways, with the idea of increasing the revenue. This matter was received some time ago, but owing to lack of space it was not published earlier. It is, however, of interest to note that the question of zone fares is being taken up by several companies in the U.S., and permission for its adoption is being sought. Canadian companies are largely restricted in the matter of fares, by agreements with municipalities, under which increased revenue can only be obtained by carrying an increased number of passengers, thus entailing an increased number of cars to operate, with all the attendant expenses. Even if permission be obtained to increase the unit fare, the increase allowed might be by no means sufficient to make up for the extra cost of operation; in fact, it is contended by many that from all points of view, the flat rate fare is entirely wrong in principle, and should be completely wiped out.

The United Railways of St. Louis applied recently to the Missouri Public Service Commission, for permission to make a test of a three zone system with a minimum 5c fare in the central area, as in the company's opinion, a further increase in unit fare would discourage short haul traffic and involve a clumsy fare arrangement, while the zone system as proposed is the fairest and entirely practicable. Some few months ago this railway was authorized to increase the unit fare from 5c to 6c, and a comparison of the receipts for two months ended July 31 this year and last, showed that under the increased unit fare, there was an increase in revenue of 14%, and a decrease in revenue passengers of 4%. On this basis, taking into consideration increases in wages, and operating generally, there will be a considerable deficit for 1918, after allowing 6% on the commission's valuation of the property in St. Louis. It will be noticed that a 20% increase in fare only resulted in a 14% increase in revenue, and it is natural to assume that the decrease in revenue passengers occurred in the short haul traffic, where, undoubtedly, the passenger is penalized. Any further increase in the unit fare would further decrease the short haul traffic.

The zone system suggested by the St. Louis company provides a minimum fare of 5c on the city lines, which form one zone, the other fares being adjusted equitably to provide sufficient revenue, and should it be discovered after experiment that some further adjustment of fares becomes necessary in the second and third zones, this could be carried out without interference with the zones, or the zone limits might be changed without changing the minimum 5c fare. The rates of fare are suggested as follows: In any one zone, including free transfer in that zone, 5c; in two zones, including free transfers in the two zones, the second rate of fare; in three zones, including the entire city, with free transfers to any part of the city, the third rate of fare. The company claims that a practicable scheme can be worked out, and that it has many advantages over the flat rate system, the short riders being taken care of at the minimum fare and the long rider paying for his ride somewhat in proportion to the cost of service provided. It is pointed out that it is difficult to predict the financial result of such a change, as at first it might produce insufficient revenue, or the reverse.



## Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and subsidiary companies:—

	Aug. 1918	Aug. 1917	Aug. 31, 1918	Aug. 31, 1917
Gross	\$544,339	\$454,425	\$958,307	\$892,803
Expenses	455,903	396,168	850,706	776,222
Net	88,436	58,257	107,601	116,581

Calgary Municipal Ry.—A press report states that at the end of August the C.M.R. had a surplus on the operations for this year of \$7,284.90, against a deficit of \$19,368.18 for the same period of 1917.

gone up by \$175.93, and average daily fixed charges have been raised by the amount of \$184.08. The total operating expenses show an increase of \$43,552.67 over 1917, while additional in the expenditures are \$10,594 for improvements at Bowness Park and in wages for motor-men of passenger and freight cars, and car, house and service employees, there has been a raise of \$40,702 over 1917.

### Cape Breton Electric Co.—

	Aug. 1918	Aug. 1917	12 months to Aug. 31, 1918	12 months to Aug. 31, 1917
Gross	\$44,716.17	\$39,683.58	\$495,112.55	\$437,604.84
Exp.	33,745.61	26,667.13	356,036.62	266,661.66
Net	10,970.56	13,016.45	139,075.93	170,943.18

Montreal Tramways Co.—A press report of Oct. 17, stated notice had been given the Montreal Stock Exchange that the directors had decided to defer the declaration of a dividend for the three months ended Sept. 30, until the new fares had been given time to take proper effect. The declaration of a dividend for the quarter ended June 30 was deferred pending the Quebec Public Utilities Commission's decision as to fares. The new schedules of fares only came into operation Oct. 3, consequently revenues for the quarter ended Sept. 30, were on the same basis as those for the quarter ended June 30.

Oshawa Ry.—The annual meeting was held at Gananoque, Ont., Oct. 4. The officers for the current year are: E. W. Rathbun, President; H. W. Cooper, Manager; J. H. Valteau, Secretary and Treasurer.

Regina Municipal Ry.—The city auditor's report for the 9 months ended Sept. 30, shows that there was a deficit in the operation of the railway of \$42,405.18. The City Treasurer estimated that the total deficit of the railway for the year would be \$46,824.82.

### Toronto Civic Railway.—

	Sept. 1918	Sept. 1917	9 months to Sept. 30, 1918	9 months to Sept. 30, 1917
Receipts	\$29,347.89	\$24,029.23	\$86,364.94	\$70,928.60
Passengers	1,759,023	1,426,775	5,169,790	4,226,947

### Toronto Railway.—

	1918.	1917.	City percentage.	1918.	1917.
Jan.	\$562,707	\$510,052	\$ 84,406	\$76,508	
Feb.	509,650	473,185	88,763	70,973	
Mar.	575,957	531,080	115,191	105,876	
Apr.	543,055	510,335	108,611	102,067	
May	548,778	510,778	109,756	102,174	
June	533,393	499,732	106,679	99,946	
July	540,296	467,382	108,058	93,476	
Aug.	555,709	516,967	111,142	103,393	
Sept.	571,637	532,008	45,731	42,561	

\$4,941,182 \$4,551,611 \$878,337 \$796,979

### Toronto Ry., Toronto & York Radial Ry. and allied companies.—

	Aug. 1918	Aug. 1917	2 months Aug. 31, 1918	2 months Aug. 31, 1917
Gross	\$1,070,567	\$1,039,819	\$8,476,672	\$7,867,595
Expenses	591,507	591,013	4,636,884	4,172,715
Net	479,060	448,806	3,839,788	3,694,880

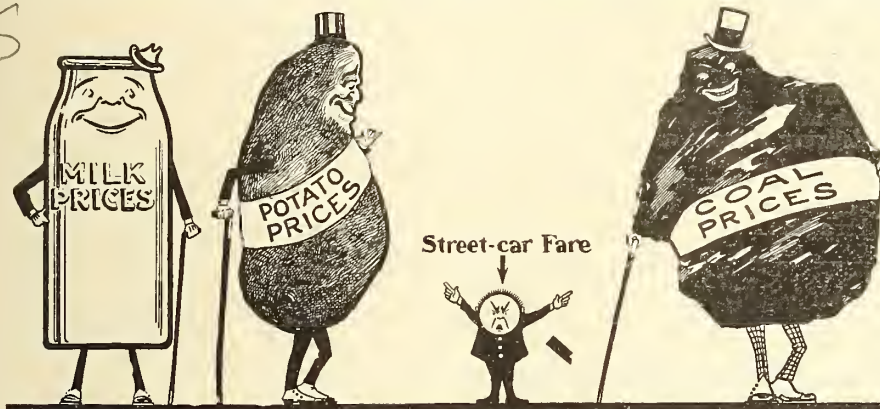
### Winnipeg Electric Ry. and subsidiary companies.—

	Aug. 1918	Aug. 1917	2 months Aug. 31, 1918	2 months Aug. 31, 1917
Gross	\$288,974	\$248,457	\$2,388,467	\$2,164,624
Expenses	217,226	208,000	1,820,973	1,657,923
Net	71,748	39,457	567,494	506,701

The surplus after deduction of fixed charges, for August, was \$15,296.40.

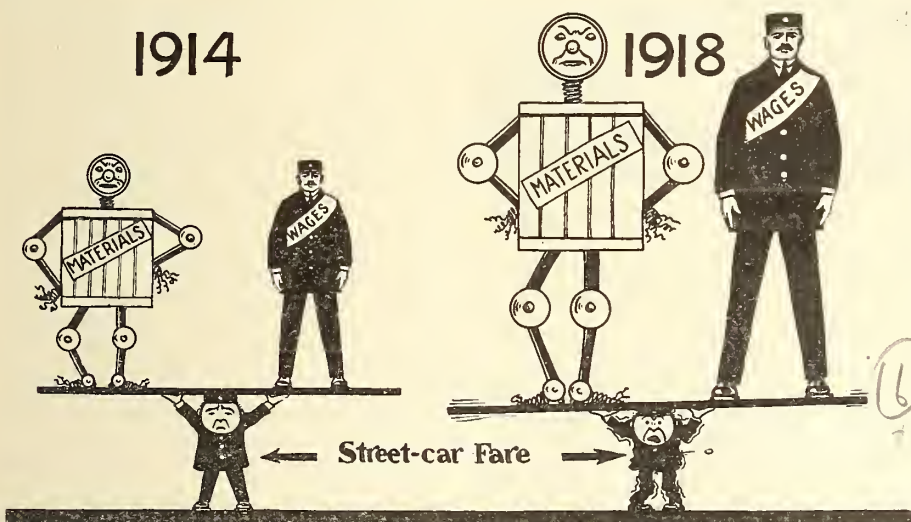
The Hamilton & Dundas Ry. is being sued for damages by the Town of Dundas, Ont. In 1918, owing to some flooding of the line, the company built a new cut from its tracks near Dundas to the Desjardins Canal. The town claims that this deviation of the water to the canal has done serious damage to boat traffic, one boat owner having claimed and received damages from the town. The company moved Sept. 26 to have certain paragraphs in the statement of claim struck out, and certain amendments were made by Judge Gauld, Sept. 30. The company was given a reasonable time to file its defence.

The American Electric Railway Association's executive committee decided recently that in view of the conditions prevailing in the industry, necessitating the presence on their property of all electric railway men, the 1918 convention be abandoned. The question of holding a conference of executives, should this be deemed necessary, was left for the executive committee's future consideration.



Why single out the street car ride as the ONLY commodity not allowed to increase in price with the cost of production?

**12,000,000 PEOPLE NOW PAY 6 CENTS FOR A STREET CAR RIDE**



Since 1914 the cost of materials used in the street car service has gone up 102 per cent; of wages 60 to 80 per cent.

**PEACE-TIME FARES CANNOT PAY WAR-TIME STREET RAILWAY EXPENSES**

British Columbia Electric Railway, Car Advertisements.

The above are reproductions of two cards which the British Columbia Electric Ry. is using in connection with its six cent fare campaign.

The report adds that the 4% tax placed on the utility in June by the city council will eat up practically all this surplus; that the average fare per passenger has decreased from 4.206c to 3.994c, and concludes:—The railway has carried 893,856 more passengers this year than last, it has run 233,547 more miles than it had at this time last year, and operated 24,852 hours longer than last year. Average daily receipts have increased by \$301.28, while on the opposite side of the sheet, average daily operating expenses have

### London Street Railway.—

	Sept. 1918	Sept. 1917
Gross	\$40,837.93	\$38,140.92
Expenses	36,288.08	28,719.07
Net	4,549.85	9,421.85

Montreal & Southern Counties Ry.—The directors for the current year, elected at the annual meeting recently, are: H. G. Kelley, President; Frank Scott, Vice President and Treasurer; J. E. Dalrymple, Vice President; J. A. Yates, Secretary; W. H. Ardley, Comptroller; W. H. Biggar, General Counsel. W. B. Powell is General Manager.



# Marine Department

## General Shipbuilding Notes Throughout Canada.

G. Beveridge, Central Chebogue, N.S., is stated to be considering building a 100-ton fishing schooner for his own use, and a freight schooner for the local trade.

Omer Blinn, Gross Coques, N.S., has launched the schooner *Mollie and Melba*, for J. E. Gaskell, Grand Manan, N.B. Her dimensions are: length over all 155 ft., length of keel 120 ft., beam 34 ft., depth 12½ ft.; 389 tons register. A similar schooner, but of somewhat larger dimensions, is under construction at the yard for F. K. Warren.

Bridgewater Shipbuilding Co., Bridgewater, N.S.—The schooner *Edith Dawson*, named after the daughter of the company's President, was launched Oct. 16. The vessel is three masted, and of the following dimensions: keel 133 ft., beam

powered vessels on the same lines as the *National 1*, launched recently.

Esquimalt, B.C.—A press report states that negotiations are in progress for the establishment of a wooden shipbuilding yard to build auxiliary powered schooners, and that Hind Rolph Co., of San Francisco, Cal., is interested in the proposal.

H. T. LeBlanc, Wedgeport, N.S.—The small steamship of the trawler type, which was launched at this yard recently, for J. N. Rafuse & Sons, has been sold to French interests at St. Pierre, Miquelon, for delivery as soon as the machinery is installed. An order has been placed for a similar, but somewhat larger, vessel. Her dimensions will be: keel length 165 ft., breadth 25 ft., depth 13 ft. The pro-

a wharf is to be built in connection with the vessel outfitting plant to be installed there.

The company has, in accordance with subsection 5 of section 15 of the Copyright Act, registered with the Trade and Commerce Department, Ottawa, an interim copyright of the plans for a twin screw cargo steamer.

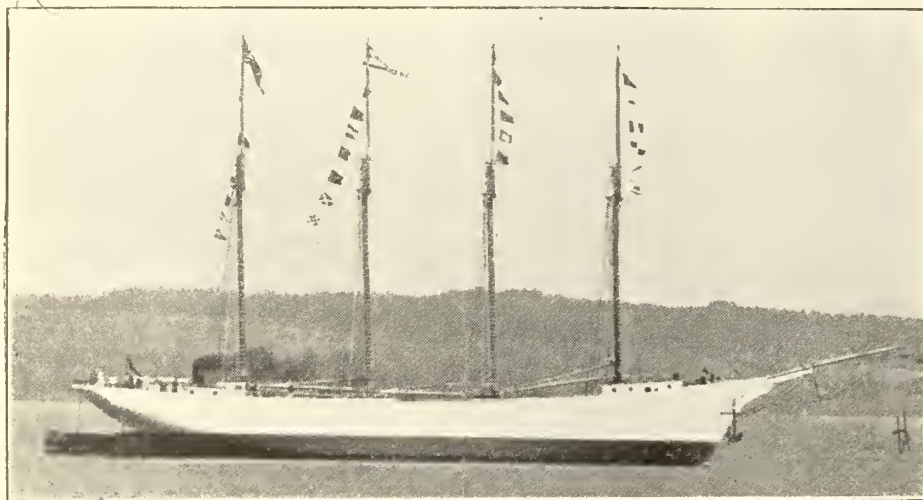
W. N. MacDonald, Sydney, N.S., has a concrete steamship under construction at North Sydney, and it is expected that it will be ready for launching about Dec. 1. The construction is in accordance with the most modern and approved methods. She is not being built for any special trade, but will probably be used in the coastal trade by the owner and builder, or sent overseas under charter, unless she is sold in the meantime. Her dimensions are: length over all 126 ft., breadth 27 ft., depth 12 ft.; deadweight capacity, estimated 450 to 500 tons. She will probably be equipped with oil burning engines of 150 or 200 h.p. for a speed of 10 knots an hour.

Peter McIntyre, Moss Glen, N.B., launched a three masted schooner recently which is stated to be the first one to be launched on the Kennebecasis River for 27 years, the last one being built and launched by the same man.

Melanson Bros., Gilberts Cove, N.S.—A three masted schooner is expected to be launched at this yard, Nov. 1. It is stated that the vessel, which is approximately 800 tons, is to be named *Melanson Bros.*

Nanaimo, B.C.—It is reported that a company is being organized to establish a shipbuilding yard with three ways, at Nanaimo, B.C. It is stated that a site of about 8 acres is to be acquired, and that it is expected to obtain a contract for the building of 6 steamships from one of the allied governments.

National Shipbuilding Corporation, Three Rivers, Que.—This corporation, which has its headquarters in New York, N.Y., obtained a contract recently for building ten 1,500-ton wooden steam colliers for the French Government, and as the U.S. Government will not allow any vessels of over 1,000 tons to be built in the U.S. for foreign account, the corporation had to secure a Canadian yard, and bought the entire capital stock of the Three Rivers Shipyards, Ltd., which has a plant at Three Rivers, Que., taking over the company's uncompleted contract with the Imperial Munitions Board for wooden cargo steamships for the British Government. The corporation has bought 75 acres of land to add to the 75 included previously in the plant and now has a river frontage of about 1,350 ft. within the city limits. Extensive additions of both buildings and machinery are being made and it is intended to build the 10 French vessels simultaneously. About 800 men are employed and it is expected to increase to about 1,500. For the present, business is being continued under the name of the Three Rivers Shipyards, Ltd., but it is the intention to procure a new incorporation under Canadian law. The principal officials of the National Shipbuilding Corporation in the United States are: Newman Erb, President, Ann Arbor Ry., who is Chairman of the Board; and



British Colonies Transportation Co.'s Auxiliary Powered Schooner *Margaret F. Dick*

33½ ft., depth of hold 13 ft.; tonnage, 446 net. Another schooner of 300 tons is under construction at the yard, and an additional vessel will be laid almost immediately.

Canadian Car & Foundry Co.—In publishing an illustration of the French mine sweeper *Navarin* in our October issue, she was mentioned as having been built by the Port Arthur Shipbuilding Co., instead of by the Canadian Car & Foundry Co. at Fort William, Ont., as should have been stated.

Cholberg Ship Yard, Victoria, B.C.—Work is proceeding on the two keels which were laid here early in September. The third shipway has been graded and timbered, and the third keel was expected to be laid during October. A fourth shipway is to be built alongside the first. An overhead system is to be installed for the distribution of materials to vessels under construction, and a wharf with derrick for handling ships' timbers from the water, has been completed.

J. Coughlan & Sons, Vancouver, B.C.—A new machine shop, pipe and copper-smith's shop, joiner, carpenter and paint shops, have been added to this plant recently, and 2 additional finishing berths have been completed, capable of taking vessels up to 450 ft. long. John Lockhart is General Manager.

H. W. Embree & Son, Halifax, N.S., are reported to be building two auxiliary

powering machinery will be supplied by the New Burrell Johnson Iron Co., and she will be equipped with electric light and other conveniences.

Lewis Bros., Sheet Harbor, N.S., launched a large schooner recently.

Little Brook, N.S.—A schooner is reported as about completed at this point, for Capt. C. W. Collins, Granville Ferry, N.S. Her dimensions are: length 163.6 ft., breadth 35.7 ft., depth 13.3 ft.; tonnage, 576 gross, 543 net.

Wm. Lyall Shipbuilding Co., Vancouver, B.C.—The second wooden auxiliary powered schooner to be built on the company's own account, was launched, Oct. 16, and named *Alice Beauclerc*, by Miss Dorothy Langford, a niece of F. W. Peters, General Superintendent, British Columbia District, C.P.R. The first vessel of this type to be built by the company, was launched at the end of September, and named *J. N. Greenshields*. These are 5 masted vessels, equipped with Diesel engines, and with deadweight capacity of 2,500 tons. The dimensions are: length 235 ft., breadth 44.8 ft., depth moulded 20.6 ft.

Wm. Lyall Shipbuilding Co., North Vancouver, B.C.—The city council has approved of a lease, at a nominal annual rent, of land under water for 500 ft. from the shore line into the Inlet, from the end of Bewicke Ave., to the company, for shipbuilding purposes. It is stated that



W. J. Kelly, formerly of the Southern Transport Co., who is President.

North Sydney, N.S.—A 400-ton concrete steamship is under construction at North Sydney, N.S. and it is expected that the launching will take place during November. The dimensions are: length 130 ft., breadth 27 ft., depth 12 ft. It is stated that she is being built specially for carrying coal, but can be adapted for other cargoes. W. N. Macdonald, Sydney, and E. Gillard, North Sydney, are associated with the company responsible for the construction, and it is stated that they are considering the building of a concrete floating dry dock to handle 5,000 ton vessels.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—Two steam trawlers of the Castle class were delivered to the Naval Department early in October, and two

more, making a total of 8 during this year, were expected to be delivered before the end of the month, or early in Nov.

St. Martins Shipbuilding Co., St. Martins, N.B., is reported to be building a wooden schooner for lumber cargoes. The vessel will be 141 ft. keel, 35 ft. beam and about 525 tons gross.

A. A. Theriault, Belliveau Cove, N.S., is building a schooner, which will probably be launched early in Jan., 1919. She is of the following dimensions: keel 119 ft., beam 32 ft., depth 11½ ft.; tonnage 350 gross.

Portuguese Vessel Purchase Reported.—A press dispatch from London, Eng., states that Portuguese interests have purchased a single deck wooden steamship, now under construction at Vancouver, B.C. Particulars given state that she is to be classed at Lloyd's and is

estimated to a d.w. capacity of 3,500 tons on 22¼ ft. draft, with a speed of 10 knots an hour; dimensions: length 281 ft., breadth 48 ft., depth 27 ft. The price said to have been paid is about £34 a ton d.w. No information appears to be obtainable in Vancouver of this sale. Firms engaged in wooden shipbuilding there are concerned at present with orders for the Imperial Munitions Board, or for the French Government, with the exception of Wm. Lyall Shipbuilding Co., which is building some auxiliary powered schooners of smaller capacity than that stated, for its own account.

W. D. Sweeney, Yarmouth, N.S., is reported to have commenced work on a wooden steamship for St. John, N.B., parties. The dimensions are stated as: length of keel 97 ft., length over all 118 ft., beam 30 ft., depth 12 ft.

## Wooden Steamship Building in Canada for French Government.

As fully reported in Canadian Railway and Marine World for May, the Minister of Marine announced that after the orders given by the Imperial Munitions Board for steel and wooden cargo steamships for the British Government were completed, the Dominion Government would keep all the Canadian steel shipbuilding plants occupied for some time to come, in building steel cargo steamships, and that it would not permit any steel vessels to be built in Canada other than for Canadian or British registry. The Minister also announced that as the Government's shipbuilding programme did not include the building of any wooden steamships, it would permit the building of them for Canadian, allied or neutral owners, in the case of the two latter, of course, under license. To enable the wooden shipbuilding yards, which had orders from the Imperial Munitions Board, to carry on business after completing those orders, the Canadian War Mission to the United States, of which Lloyd Harris, of Brantford, is chairman at Washington, took the matter up with the various allied missions to the United States, and after considerable negotiations, arranged through the French High Commissioner for an order to be given for building in Canada 20 wooden steamships of 3,000 tons d.w. capacity. The Canadian War Commission also carried on a second negotiation with the French High Commissioner, which resulted in orders being given for building in Canada 50 wooden vessels of 1,500 tons d.w. capacity each.

The Foundation Co. of New York, N.Y., was given the order for the twenty 3,000-ton steamships, which will be built by the Foundation Co. of British Columbia, Ltd., in its no. 1 yard at Victoria, B.C., and in the yard at Point Ellice, Victoria, which it has taken over from the Cameron-Genoa Mills Shipbuilders, Ltd., and which it has named its no. 2 yard. Keels have already been laid for several of these vessels. Delivery is to be made by Nov. 1, 1919. The general dimensions will be as follows:

Length, over all.....	293 ft. 2 in.
Length, between perpendiculars.....	276 ft. 0 in.
Breadth, extreme.....	47 ft. 6 in.
Breadth, moulded.....	46 ft. 6 in.
Draft, over keel.....	21 ft. 9 in.
Displacement.....	about 5,600 tons
Deadweight.....	3,000 to 3,200 tons
Speed, loaded.....	about 9 knots

They will be built of British Columbia timber under Bureau Veritas rules and inspection for its highest class. There

will be one laid deck, and hold beams, and a longitudinal steel truss extending the whole length of the ship, similar to the s.s. City of Portland and the s.s. City of St. Helens. There will be three 24-ft. hatchways at 22-ft. centers. They will have 3 watertight bulkheads and watertight tunnel platform. They will have 2 Scotch boilers, with a heating surface of not less than 4,000 sq. ft. The main condenser will have 1,750 sq. ft. heating surface. The 2 engines, which will be supplied with steam at 180 lb. per sq. in. pressure, will have 3 cylinders, 13½, 22 and 36 in. diam. by 30 in. stroke, to yield 550 i.h.p. at 115 r.p.m. They will be equipped with electric lighting and wireless telegraph apparatus. While these steamships are spoken of as 3,000-ton ones, their deadweight is likely to be closer to 3,200 tons.

Acting on the French Government's behalf, Anderson & Co., of New York, have placed orders for the building in Canada, within 12 months, of 50 twin screw, well decked, wooden steam colliers, to be used to transport coal between England and France, as follows:—

Davie Shipbuilding & Repairing Co., Lauzon, Que. ....	12
Fraser, Brace & Co., Montreal.....	8
Wm. Lyall Shipbuilding Co., North Vancouver National Shipbuilding Corporation, Three Rivers, Que. ....	8
New Westminster Engineering & Construction Co., New Westminster, B.C.....	10
Pacific Construction Co., Port Coquitlam, B.C. ....	5
Western Canada Shipyards, Ltd., Vancouver, B.C. ....	2
	5

The 1,500-ton steamships will have the following general dimensions:—

Length over all.....	204 ft. 6 in.
Length between perpendiculars.....	195 ft. 0 in.
Breadth, extreme.....	40 ft. 6 in.
Breadth of beam, moulded.....	39 ft. 8 in.
Depth, moulded.....	17 ft.
Depth of hold.....	15 ft.
Draft over keel.....	16 ft.

They will be built of wood, under the Bureau Veritas' rules and inspection for the highest class. The hull will be of Douglas fir, one laid deck and hold beams. The usual watertight bulkheads will be provided. There will be three 16-ft. hatchways at 23-ft. centers. They will have long poop, well deck and forecable. The water tube boiler will have a total heating surface of 2,300 sq. ft. The main condenser will have 900 sq. ft. heating surface. The twin compound engines, of 275 i.h.p. at 175 r.p.m., will have cylinders 12 x 24 in. diameter, by 16 in. stroke. They will have twin screw and will be lighted by electricity and equipped with wireless telegraph apparatus.

The Dominion Marine Department has granted licenses for the building of the steamships above mentioned for French registry.

The inspection of the building of these vessels will be in charge of R. H. Laverie, Chief Inspector for Bureau Veritas in the U.S. and Canada; and his assistants, R. S. Haight, Assistant Chief Inspector, and Capt. Ed. Patry, Chief Engineer to the head office, Bureau Veritas, and acting Chief Engineer in the U.S. The inspection work at the different yards locally will be attended to as follows: Lauzon, Que., Mr. Russell and Mr. Samson, engineer; Three Rivers, C. Ducquette; Montreal, T. Jardine and his assistants. Mr. Jardine will also inspect the machinery installation at Three Rivers. In British Columbia, Frank Walker, Principal Surveyor, Bureau Veritas, for Seattle and British Columbia, will act as consulting advisor. The actual work will be supervised by Mr. Davis, and assistants when needed.

The Anderson Co., New York, has also given orders, on behalf of Belgian interests, for building 10 wooden steamships, steel braced, of about 3,200 tons d.w., the orders being placed as follows: New Westminster Construction & Engineering Co., New Westminster, B.C., 3; Pacific Construction Co., Vancouver, B.C., 2; Western Canada Shipyards, Ltd., Vancouver, 4. Their principal dimensions will be as follows:

Length between perpendiculars.....	276 ft.
Beam, extreme.....	47½ ft.
Beam, moulded.....	46½ ft.
Depth, moulded.....	23½ ft.
Draft, loaded.....	21¼ ft.

### Welland Canal Lock Gate Accident.—

The Montreal Transportation Co.'s s.s. Otland, en route from Kingston to Port Colborne, light, is reported to have carried away the two head gates of lock 8 in the Welland Canal, Oct. 23, and was washed back to the lower level, but escaped undamaged. The cause of the accident, as reported, is the old one of mistaken signals between the bridge and the engine room, the master stating that he gave the signal to reverse, whereas the engine went forward with increased speed.

British Colonies Transportation Co., Ltd., particulars of the organization of which were published in Canadian Railway and Marine World for August, has declared a dividend of 2% on preferred stock and 2% on common stock, payable Nov. 1.



## Cargo Steamship Building in Canada for British Government.

**Boiler Troubles.**—The Victoria, B.C., Times published the following on Oct. 5: "Boiler trouble appears to be a chronic malady with the initial ships of the I. M. B. fleet sent to sea. Following the reports reaching here that the War Selkirk had been towed into a southern port in a crippled condition, it has been learned that the War Nootka, the second vessel to be completed, experienced similar trouble on the Atlantic side. An engineer in this city has received the following letter from one of the engine room staff on the War Nootka, which tells its own tale:

"We arrived here (name deleted) a few days ago; you will thus see, if your imagination is any good, that we have not had a very pleasant voyage. Of course it was only the expected that happened, but I don't think anybody expected it to happen so quickly, or so often. I won't worry you by giving you details of what we have gone through. The time we have been on the voyage, putting into (name deleted) on one boiler, and that absolutely done and 10 days' hard work there with short help, tells its own tale to you. At first we had engine trouble, main and auxiliary. Before seven days we had been at every part of her. Then we began to have trouble. The boilers started; we have 20 tubes stopped up now, and I can tell you the times we went into those boilers, and the heat of them nearly cost three of us our health."

"The letter goes on to say that the ship will not be allowed to proceed until she has been made all right. The letter contains reference to the War Yukon, which has since been reported at her destination, and concludes with 'We don't see the War Songhee yet.'"

**Launchings of Steamships.**—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to Oct. 29, giving in each case the date of the launching, the name of the steamship, the name of the builder and the deadweight tonnage:—

### Steel Steamships.

May 18, 1917	War Dog, Wallace Shipyards North Vancouver, B.C.	4,500
July 9, 1917	War Wasp, Nova Scotia Steel & Coal Co., New Glasgow, N. S.	1,800
Aug. 19, 1917	War Fish, Port Arthur Shipbuilding Co., Port Arthur, Ont.	4,300
Nov. 3, 1917	War Dance, Port Arthur Shipbuilding Co., Port Arthur, Ont.	3,400
Mar. 16, 1918	War Camp, J. Coughlan & Sons, Vancouver, B.C.	8,800
Mar. 23, 1918	War Power, Wallace Shipyards, North Vancouver, B.C.	4,600
Apr. 3, 1918	War Isis, Port Arthur Shipbuilding Co., Port Arthur, Ont.	3,400
May 8, 1918	War Wizard, Collingwood Shipbuilding Co., Collingwood, Ont.	2,900
May 21, 1918	War Bee, Nova Scotia Steel & Coal Co., New Glasgow, N.S.	2,400
May 27, 1918	War Osiris, Port Arthur Shipbuilding Co., Port Arthur, Ont.	3,400
June 8, 1918	War Earl, Canadian Vickers Ltd., Montreal	7,000
June 29, 1918	War Duchess, Canadian Vickers Ltd., Montreal	7,000
July 20, 1918	War Hathor, Port Arthur Shipbuilding Co., Port Arthur, Ont.	3,400
July 29, 1918	War Charger, J. Coughlan & Sons, Vancouver, B.C.	8,800
Aug. 19, 1918	War Chief, J. Coughlan and Sons, Vancouver, B.C.	8,800
Aug. 21, 1918	War Weasel, British-American Shipbuilding Co., Welland, Ont.	3,500
Sept. 6, 1918	War Witch, Collingwood Shipbuilding Co., Collingwood, Ont.	2,900
Sept. 19, 1918	War Taurus, Polson Iron Works, Ltd., Toronto	3,500
Sept. 28, 1918	War Faith, Canadian Vickers Ltd., Montreal	7,000
Sept. 28, 1918	War Noble, J. Coughlan & Sons, Vancouver, B.C.	8,800
Sept. 28, 1918	War Storm, Wallace Ship-	

yards, Ltd., Vancouver, B.C.	4,600
Oct. 5, 1918—War Horus, Port Arthur Shipbuilding Co., Port Arthur, Ont.	3,400
Oct. 15, 1918—War Hydra, Polson Iron Works, Ltd., Toronto	3,500
Oct. 24, 1918—War Fiend, Midland Shipbuilding Co., Midland, Ont.	3,400
Oct. 29, 1918—War Joy, Canadian Vickers, Ltd., Montreal	7,000

Total 25 steel vessels .....121,100

### Wooden Steamships.

Dec. 28, 1917	War Songhee, Foundation Co., Victoria, B.C.	3,080
Jan. 4, 1918	War Nootka, Western Canada Shipyards, Vancouver, B.C.	3,080
Jan. 24, 1918	War Yukon, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria	
Feb. 16, 1918	War Puget, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
Mar. 6, 1918	War Selkirk, Western Canada Shipyards, Vancouver, B.C.	3,080
Apr. 10, 1918	War Caribou, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
Apr. 11, 1918	War Comox, New Westminster Construction & Engineering Co., New Westminster, B.C.	3,080
Apr. 11, 1918	War Masset, Foundation Co., Victoria, B.C.	3,080
Apr. 13, 1918	War Tyee, Pacific Construction Co., Coquitlam, B.C.	3,080
Apr. 25, 1918	War Haida, Cameron-Genoa Mills, Victoria, B.C.	3,080
Apr. 27, 1918	War Cayuse, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
May 11, 1918	War Mohawk, Quinlan & Robertson, Ltd., Quebec, Que.	3,080
May 11, 1918	War Sioux, Port Arthur Dredging Co., Port Arthur, Ont.	3,080
May 21, 1918	War Atlin, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
May 23, 1918	War Tatla, Western Canada Shipyards, Ltd., Vancouver, B.C.	3,080
June 12, 1918	War Skeena, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.	3,080
June 14, 1918	War Edensaw, New Westminster Construction & Engineering Co., B.C.	3,080
June 15, 1918	War Babine, Foundation Co., Victoria, B.C.	3,080
June 24, 1918	War Nicola, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
June 28, 1918	War Quebec, Quebec Shipbuilding & Repairing Co., Quebec, Que.	3,080
June 29, 1918	War Ontario, Toronto Shipbuilding Co., Toronto	3,080
July 5, 1918	War Huron, Fraser, Brace & Co., Montreal	3,080
July 5, 1918	War Erie, Fraser, Brace & Co., Montreal	3,080
July 6, 1918	War Casco, Western Canada Shipyards, Ltd., Vancouver, B.C.	3,080
July 12, 1918	War Sumas, Pacific Construction Co., Port Coquitlam, B.C.	3,080
July 24, 1918	War Suquamish, Wm. Lyall Shipbuilding Co., Vancouver, B.C.	3,080
July 27, 1918	War Gaspe, Quinlan & Robertson, Quebec, Que.	3,080
July 27, 1918	War Ottawa, Fraser, Brace & Co., Montreal	3,080
Aug. 5, 1918	War Chilkat, Western Canada Shipyards, Vancouver, B.C.	3,080
July 29, 1918	War Stikine, Cameron-Genoa Mills Shipbuilders, Victoria, B.C.	3,080
Aug. 31, 1918	War Camchin, Foundation Co., Victoria, B.C.	3,080
Sept. 7, 1918	War Sorel, Quebec Shipbuilding & Repair Co., Quebec	3,080
Sept. 8, 1918	War Nanoose, Foundation Co., Victoria, B.C.	3,080
Sept. 19, 1918	War Niagara, Fraser, Brace & Co., Montreal	3,080
Sept. 21, 1918	War Halifax, Southern Salvage Co., Liverpool, N.S.	3,080
Sept. 22, 1918	War Nipigon, Great Lakes Dredging Co., Port Arthur, Ont.	3,080
Sept. 23, 1918	War Matane, Quinlan & Robertson, Quebec, Que.	3,080
Sept. 26, 1918	War Ewen, New Westminster Construction & Engineering Co., New Westminster, B.C.	3,080
Oct. 26, 1918	War Toronto, Toronto Shipbuilding Co., Toronto	3,080

Total 43 wooden vessels .....132,440  
Aggregate deadweight tonnage of 25 steel vessels and 43 wooden vessels, 253,540.

**Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.**—The wooden cargo steamships War Skeena and War Haida

underwent their trials during the early part of October, the former developing 12½ knots over the measured mile, and the latter about 11 knots an hour. This company is now in voluntary liquidation, and the yard has been absorbed by the Foundation Co., Ltd.

**Canadian Vickers Limited, Montreal.**—The s.s. War Joy, 7,000 tons, was launched, Oct. 29, by S. H. Watson, a representative of the British Ministry of Shipping, without ceremony. This is the last of 4 steel cargo steamships ordered by the Imperial Munitions Board for the British Government from this company. The s.s. War Faith, which was launched Sept. 28, is loading cargo, and is expected to sail early in November on her maiden voyage.

**J. Coughlan & Sons, Vancouver, B.C.**—The fourth steel steamship to be built at this yard under order of the Imperial Munitions Board for the British Government, was launched Sept. 28, and named War Noble. She has a deadweight capacity of 8,800 tons.

The steel steamship War Charger, 8,800 tons, which was launched July 29, was expected to be ready for her trial runs during the latter part of October, after which she will be handed over to Raeburn & Verel for operation on behalf of the British Government.

**Foundation Co., Victoria, B.C.**—The wooden steamship War Babine, launched June 15, underwent her trials in Parry Bay, Oct. 7.

**Grant & Horne, St. John, N.B.**—In publishing in our October issue an illustration of the s.s. War Fundy, built for the British Government by Grant & Horne, she was mentioned as a steel cargo steamship, instead of a wooden one.

**Great Lakes Dredging Co., Port Arthur, Ont.**—The wooden steamship War Nipigon, which was launched at this yard, Sept. 22, completed the Imperial Munitions Board's order with this company.

**Wm. Lyall Shipbuilding Co., North Vancouver, B.C.**—The wooden steamship War Nicola, launched June 24, the fifth of the vessels built for the Imperial Munitions Board, by this company, left Vancouver for a trial trip to Victoria, Oct. 15. She is reported to have answered satisfactorily, making the trip in 6 hr. 10 min., averaging 13 knots an hour.

**Midland Shipbuilding Co., Midland, Ont.**—The first of the three steel steamships to be built by this company for the British Government under order from the Imperial Munitions Board, was launched Oct. 24, and named War Fiend, by Mrs. D. L. White, wife of the President of the company, and who is also mayor of the town. This is the first steel steamship to be built at Midland. She is 261 ft. long, 43½ ft. beam, and has a moulded depth of 23 ft.; tonnage, 3,400 deadweight. She is to be equipped with triple expansion engines of the surface condensing type, developing 1,250 h.p., supplied with steam by 2 Scotch boilers, and completely fitted with electric light, cargo winches, steam windlass, etc., for ocean service. The keel for the second vessel has been laid, and a third one will be laid shortly.

**New Westminster Construction & Engineering Co., New Westminster, B.C.**—The fourth wooden steamship under the Imperial Munitions Board's order, was launched Sept. 26, and named War Ewen. This completes the order with this company. The s.s. War Edensaw, launched



June 14, was expected to be sent on her trial trip during the last week of October.

**Pacific Construction Co., Coquitlam, B. C.**—The wooden steamship War Tyee, which was launched Apr. 13, was hauled out on the slip at Yarrows, Ltd., yards, in the early part of October, for cleaning and painting preparatory to undergoing her trials. The s.s. War Sumas, launched July 12, was expected to be fully equipped and ready for her trials by the end of October.

**Polson Iron Works, Ltd., Toronto.**—The s.s. War Hydra, sister vessel of the s.s. War Taurus, which was launched Sept. 19, was launched Oct. 15, the christening ceremony being performed by Mrs. Turnbull, wife of Harvard Turnbull of the Imperial Munitions Board. The War Hydra is the second of 6 steel steamships under order for the British Government through the Imperial Munitions Board. She is expected to be ready for her cargo about the end of November.

**Port Arthur Shipbuilding Co., Port Arthur, Ont.**—The last of the 6 steel cargo steamships under construction for the British Government, was launched Oct. 5, and named War Horus, by Mrs. James Conmee, Port Arthur. She is a steel screw, single deck, general freight carrying steamship, with straight stem and semi elliptic stern, with poop, bridge and forecastle, and is built on the transverse system with inner bottom throughout. Her dimensions are: length over all 261 ft., length between perpendiculars 251 ft., breadth moulded 43½ ft., depth moulded 23 ft.; tonnage, 2,240 gross, 3,400 deadweight. Cargo will be handled by 4 steel derrick posts fitted with 8 booms, each boom being served by a 7 x 12 in. reversible double drum steam winch. The propelling machinery consists of a triple expansion surface condensing engine with cylinders 20½, 34½ and 55 in. diam. by 40 in. stroke, and supplied with steam by 2 Scotch boilers each 15 ft. diam. by 11 ft. long at 190 lb. working pressure and developing about 1,500 i.h.p.

**Quinlan & Robertson, Ltd., Quebec, Que.**—The wooden steamship War Mohawk, launched May 11, completed her trial trips Oct. 9, in the St. Lawrence, between Quebec and Goose Island. The outfitting of the steamships War Seneca, War Gaspe and War Matane, is being pushed, so that it is expected all will be able to clear to sea before the close of the St. Lawrence navigation for the winter.

**Southern Salvage Co., Liverpool, N.S.**—The wooden steamship which this company had on order from the Imperial Munitions Board for the British Government, was launched Sept. 21, and named War Halifax.

**Toronto Shipbuilding Co., Toronto.**—The second of the 2 wooden hulls, under order by the Imperial Munitions Board for the British Government, was launched Oct. 26, and christened War Toronto, by Mrs. C. A. Boone, wife of Major Boone, one of the company's directors, who has just returned from the front on leave.

**Wallace Shipyards, Ltd., North Vancouver, B.C.**—The steel cargo steamship War Storm was launched at this yard, Sept. 28, the christening being performed by Mrs. A. Wallace, wife of the Manager. She has a deadweight capacity of 4,600 tons, and is a sister vessel of the steamships War Dog and War Power, launched from the same yards May 18, 1917, and Mar. 23, 1918, respectively. It is announced that on completion, she will be handed to Raeburn & Verel, for operation on behalf of the British Government.

## Steel Cargo Building for Dominion Government.

**Orders for Steamships.**—We have been officially advised that the following orders had been placed up to Oct. 24:—

	No.	d.w. tons each.	Total d.w. tons.
Canadian Vickers Ltd..	2	4,300	8,600
Canadian Vickers Ltd..	6	8,100	48,600
Collingwood Shipbuilding Co. ....	4	3,750	15,000
Davie Shipbuilding & Repairing Co. ....	2	5,100	10,200
Halifax Shipyards Ltd.	2	8,100	16,200
Port Arthur Shipbuilding Co. ....	2	3,400	6,800
Tidewater Shipbuilders, Wallace Shipyards Ltd.	1	4,300	4,300
Ltd. ....	4	5,100	20,400
Victoria Machinery Depot, Ltd. ....	2	8,100	16,200
	25	....	146,300

This list shows a total of 25 vessels with an aggregate deadweight capacity of 146,300 tons. The list of orders, of which Canadian Railway and Marine World had been advised, as given in the October issue, showed 24 steamships with an aggregate deadweight capacity of 118,600 tons. Since then, orders have been placed for 1 vessel, 4,300 tons and 5 of 8,100 tons each, with Canadian Vickers, Ltd., and 2 of 8,100 tons each with the Victoria Machinery Depot. The latest official list of orders placed does not, however, contain the orders mentioned in our October list, as having been placed with the British-American Shipbuilding Co., Welland, Ont., 2 vessels 4,300 tons each, and Wallace Shipyards, Ltd., 1 additional of 4,300 tons, and 4 (advised as under provisional agreement) of 5,100 tons each.

**Steamship Building Prices for British Columbia.**—An Ottawa press dispatch of Sept. 24 stated that a deputation of British Columbia shipbuilders had waited on the Minister of Marine asking higher prices for building steel cargo steamships, on the ground that they could not compete with Seattle and other places, as higher rates are paid there, and another Ottawa press dispatch of Sept. 25 credited the Minister of Marine with stating that higher prices were not being paid at Seattle and that the United States Government was getting vessels built cheaper than the Dominion Government. We have since been officially advised that the representatives of British Columbia shipbuilders who waited on the minister were Mr. Coughlan, of J. Coughlan & Sons, and W. E. Hodges, of Wallace Shipyards, Ltd., and that they contended that higher prices should be paid to builders in British Columbia than to builders in eastern yards. We are also advised that the minister stated, in an interview, that higher prices than he was offering British Columbia builders were not being paid for the construction of similar vessels at U.S. Pacific Coast yards.

**Midland Shipbuilding Co., Midland, Ont.** At the launching of the s.s. War Fiend for the British Government, by the Midland Shipbuilding Co. at Midland, Ont., Oct. 24, James Playfair stated that the company expects to receive orders from the Dominion Government for 2 steel cargo steamships under the Minister of Marine's shipbuilding programme. The size to be built is under consideration, but the company would of course prefer to build the 3,300 to 3,400 type, which it is most accustomed to.

**Canadian Vickers, Ltd., Montreal.**—With the completion of contracts for the British Government, placed through the Imperial Munitions Board, by the launch-

ing of the s.s. War Joy, Oct. 29, attention is being concentrated entirely on the building of steel cargo steamships for the Dominion Government, of which this company will build 8, some of them probably being completed this year.

**Nova Scotia Steel & Coal Co., New Glasgow, N.S.**—A press report states that the Minister of Marine announced at Halifax recently that 2 steel steamships are to be built at this company's yard at Trenton, N.S., for the Dominion Government, to be about 2,800 tons each. It is also stated that Jas. Meikle, who has been acting as an inspector in the clearing up of the area affected by the recent Halifax disaster, has returned to the company's service, in charge of steel vessel building.

**Victoria Machinery Depot Co., Ltd., Victoria, B.C.**—The Victoria Times, in referring to the return there on Sept. 27 of J. C. McIntosh, M.P. for Nanaimo, says he stated that after a conference he had in Ottawa, on Sept. 16, with the Prime Minister and the Minister of Marine, the following written statement was given by the Minister of Marine:—

"In view of the attitude assumed by the Victoria Machinery Depot Co., the Minister is prepared to give an undertaking that, in the event of its establishing a 2-berth yard, he will, when it is ready, place contracts with it from time to time to keep the yard fully occupied for two or three years, at such current prices as may be fair and reasonable."

Mr. McIntosh had a conference subsequently with the Minister and Deputy Minister of Marine, as a result of which the Deputy Minister telegraphed the Victoria Machinery Depot Co. on Sept. 18 as follows:—

"After interview with Mr. McIntosh, we make your firm the offer of two ships of 8,100 tons as per plans and specifications. Department will use its best endeavors to secure steel at the earliest possible date. Confirming Mr. McIntosh's wire, see no reason why, finances permitting, your yards should not be kept going to the full for two or three years, and longer, as the government's policy is permanent. If this offer meets with your approval, please wire acceptance, when articles of agreement will be prepared and forwarded to you for execution."

Mr. McIntosh added that the offer was accepted by the Victoria Machinery Depot Co., that work will be started as soon as the agreement is signed, and that 10 steamships will be built at an expense of \$15,390,000.

It will be remembered that some controversy took place some time ago regarding placing of orders with this company by the Dominion Government, when the company took exception to the terms which it stated had been offered to it by the government for building three vessels. It was, however, denied at Ottawa that the government had offered the company any contract, and it was stated that a representative of the company had been informed, after looking over the government's plans, that the company might submit an offer, but that it has not done so. The complaint as to price was that the company had been offered the same price per ton for building 5,100 ton vessels as other builders received for building 8,800 ton vessels, viz., \$200, which it considered unfair.

The Victoria Machinery Depot Co.'s officers are: C. J. V. Spratt, President; A. J. Ormerod, Secretary; and W. J. Brinkman, Manager. The company has a marine railway, with the following dimensions: cradle, 286 ft. long, beam 48 ft.; depth of water, forward end, 18 ft.; depth of water, end of ways, 20½ ft.; capacity up to 3,000 tons. The company



does considerable local repair work, particularly on C.P.R. steamships, and during the past two years has done a good deal of work for the Imperial Munitions Board.

### Welland Canal Lock Gate Accident.

The Montreal Transportation Co.'s s.s. Outland, while upbound light, Oct. 16, struck the head gates of lock 8 on the Welland Canal, carrying them both out. The banks at the head of lock 7 were only slightly washed, as the reach above lock 8 is a comparatively short one, and the one below a very long one. The vessel was not damaged. Two spare gates were placed in position, and navigation resumed within 12 hours. Two vessels only were delayed, and that for a short time. The estimated cost of repairs is \$5,000.

The cause of the accident, as given, is mistaken signal between the bridge and the engine room, the master signalling to reverse, and the engine being put ahead. It is a singular thing that the same vessel, in charge of the same master, did precisely the same thing at lock 8, Apr. 30, 1916. The vessel was then named W. J. Averell, and owned by the Canada Shipping Co., having been owned previously by the Rutland Transit Co., Ogdensburg, N.Y. The last mentioned accident was due to the steel hawser getting caught in the vessel's condenser.

### Basil Magor Appointed District Manager, U.S. Emergency Fleet Corporation.

Basil Magor, formerly Vice President and Managing Director, National Steel Car Co., who left Hamilton, Ont., and returned to the United States, some months ago, has been appointed by the Vice President and General Manager of the United States Shipping Board Emergency Fleet Corporation, as District Manager for the North Atlantic District, which includes all shipyard plants in the territory formerly known as districts 1 and 2. He will be the resident district representative of the Vice President and General Manager, and will have supervisory jurisdiction over all phases of ship production and inspection in the district. He will have charge of the development of such organization as may be necessary for the supervision of the shipbuilding operation at the shipyard plants within his jurisdiction holding contracts with the Emergency Fleet Corporation, the appointment of such assistance for steel, wood and concrete ship construction work as may be necessary, the appointment of an assistant district manager and the authorization of emergency expenditure.

Local representatives of the various home office organizations detailed for work within, or for the plants falling within the jurisdiction of the North Atlantic District, will carry on their respective duties under the District Manager's general supervision and control. These will include specifically the local representatives of the following home office organizations: Plant protection section, passenger transportation and housing division, industrial relations division, national service section, planning and statistic section, shipyard plant division, steel and wood ship construction divisions.

It is the purpose of the Emergency Fleet Corporation's management to require all employees, detailed permanently or temporarily from the home office or-

ganizations, to report to the District Manager of the district in which their work is to be carried on, for the purpose of providing a centralized local administration and establishing an effective local supervision of their activities. The local representatives of the various sections and divisions of the home office will be held responsible, by the executive heads of their respective organizations, for the performance of their work in conformity to the established policies and standards of the Emergency Fleet Corporation. They will be held responsible by the District Manager for the performance of their work at such time, in such place, and in such manner as will contribute most effectively to the carrying out of the Emergency Fleet Corporation's shipbuilding programme.

Representatives of the Supply Division, or the sections thereof, having offices within the North Atlantic District, will continue to perform their duties as heretofore and report directly to the Manager of the Supply Division. The managers of the Steel Ship Construction Division and the Wood Ship Construction Division will continue to carry out in all respects their duties as heretofore, under the Vice President's and General Manager's control.

### The Expropriation of the Halifax Dry Dock.

In view of certain letters which have appeared in the daily press regarding the Halifax dry dock, a Chronicle reporter interviewed some Halifax persons who were advised of the facts, and the following statement was made: "During the recent visit of the Minister of Marine to Halifax, he met the President and council of the Board of Trade, and with reference to the dry dock and the shipbuilding enterprise he said that in company with the Minister he had visited Halifax after the explosion. It was a matter of anxiety to the Dominion Government that the dry dock had been so badly damaged.

"In consultation with S. M. Brookfield, the latter said that with so many of his employees killed and the large cost of repairing the dock, that the dry dock company might be unable to accomplish these repairs quickly. Mr. Brookfield then said the government should buy the dock, and offered it for \$1,250,000. At that time Messrs. Ballantyne and Carvell decided that the government was not in a position to take over the dock, but agreed to advance the dry dock company the money necessary to make the repairs. Repairs were undertaken, but as they did not proceed expeditiously, the government sent representatives from Ottawa to Halifax to expedite repairs, as the dock was very essential for war work.

"Later the Minister of Marine said that he had been able to secure the co-operation of the Halifax Shipyards, Limited, to build steel steamships in Halifax. This company is putting between \$4,000,000 and \$5,000,000 in the project, and it was decided that it was in the best interests of the city that the shipyard should be placed next the dry dock. Negotiations were opened with the dry dock company for the purchase of the dock by the Halifax shipbuilders, but Mr. Brookfield was not willing to name a price. Having in view the fact that he was willing to sell the dock to the government in Dec., 1917, for \$1,250,000, and it being in the interests of the country and of the city that a shipyard should be established, the Government expropriated the dock, and its

value will be determined by the Exchequer Court.

"Not wishing to operate the dock as a government property, it has been leased to the Halifax Shipyards, Limited, which in turn purchased from Mr. Brookfield, at a price fixed by himself, the marine slip at Dartmouth, and certain equipment at the dry dock. The Minister of Marine added that beyond giving the Halifax Shipyards, Limited, a contract for 4 steel steamships, the Dominion had not contributed any subsidy or bonus whatever, nor did the City of Halifax, nor the Province of Nova Scotia. The order for ships was placed on the same basis that orders for some 20 others had been given to other shipbuilding companies in Canada, and which are now under construction, and some 30 more which are to be built next year."

### Nova Scotia Steamships, Limited.

This company was organized recently to operate a steamship service between Halifax, N.S., Newfoundland, Boston and New York, and has leased the old Plant Line terminal on the south side of Commercial wharf, Boston, Mass. Announcement has been made previously, that the company is utilizing the offices and wharves formerly occupied by the Canada Atlantic & Plant Steamship Co., at Halifax. F. H. Chipman, formerly Manager, Canada Atlantic & Plant Steamship Co., is Resident Manager, Boston, Mass.; the Federal Line is agent at New York; H. L. Chipman, at one time Manager, C.A. & P.S. Co., is Manager at Halifax, N.S., and Shea & Co. are agents at St. John's, Nfld. We are officially advised that the steamships Cascapedia and Lady of Gaspe are being operated between St. John's, Nfld., and New York, calling at Halifax and Boston. The call at Boston is not, at present, being made every trip, but only as conditions warrant. Full cargoes are being taken each trip, freight only being handled.

The s.s. Cascapedia was originally built as a sailing vessel, at Dundee, Scotland, in 1895. She was owned by Canada Steamship Lines, Ltd., and is screw driven by engine of 260 n.h.p. Her dimensions are: length 245.2 ft., breadth 35.2 ft., depth 22.5 ft.; tonnage, 1,849 gross, 1,185 register. She has accommodation for about 100 passengers. The Lady of Gaspe was built at Glasgow, Scotland, in 1877, and named Restigouche, and later, Rathlin. She was formerly owned by the Gaspe Steamship Co., Quebec, Que., and is screw driven by engine of 180 n.h.p. Her dimensions are: length 229.7 ft., breadth 31 ft., depth 16.1 ft.; tonnage, 1,237 gross, 774 register, and has no accommodation for passengers.

The Henriette Ship Co., Ltd., the incorporation of which was announced in our last issue, with office at Vancouver, B.C., has acquired the s.s. Henriette from the Coastwise Steamship & Barge Co., and has had her converted into a four masted schooner, for operation in the Australian trade. The Henriette was originally a French schooner and was wrecked at the mouth of the Columbia River several years ago. About eight years ago she was acquired by the Grand Trunk Pacific Coast Steamship Co., equipped with propelling machinery, and operated in the coast trade between Vancouver and Prince Rupert. She was purchased later by the Coastwise Steamship & Barge Co., and operated in the ore trade between Anyox and Puget Sound ports.



## The Minister of Marine's Visit to the Maritime Provinces.

The Minister of Marine, Hon. C. C. Ballantyne, accompanied by the Deputy Minister, Alex. Johnston, left Montreal, Sept. 29, on a trip of inspection of ports in the Maritime Provinces, and returned to Montreal, Oct. 6. Two days were spent in Sydney, N.S., where the harbor was inspected, and a similar period was spent in Halifax, N.S., where they were entertained to luncheon by the Board of Trade, when the Minister spoke of the Government's shipbuilding programme as it affected Halifax and district. St. John, N.B., was visited on Oct. 5, and the harbor and development work in Courtenay Bay were inspected.

In addressing the Canadian Club at St. John, N.B., Oct. 5, the Minister said: "I became a convert long ago to the necessity of nationalizing Canada's important seaports. At present the harbors under the control of the Marine Department being developed and operated as national ports are Montreal and Quebec and Vancouver. Representation has been made to me by your federal members, the city council, and others, that the government should take over the port of St. John as one of the country's most important national ports. I am heartily in sympathy with this, and it will be a pleasure for me, before the next session of Parliament, favorably to recommend to the government that the port of St. John be included amongst Canada's national seaports, and placed under a permanent harbor commission appointed by the government. My six years as one of the harbor commissioners for the port of Montreal during the big construction period, and the experience I gained there, convince me that the best way in the interests of the country to develop and operate successfully the port of St. John is to have it taken over by the government, under the jurisdiction of the Minister of Marine, and developed and operated by a small commission the same as at the port of Montreal.

"I had the pleasure of looking over your port facilities this morning, which I have not seen for the last six years, and while they are very good, much has yet to be done to make the harbor a modern one. If the government decides to nationalize the port of St. John and place it under my direction as the Minister of Marine, I hope you will then place before me the names of three good representative business men who will be willing to devote a portion of their time and energy to their duties as harbor commissioners. I would also strongly recommend, which recommendation I would be prepared to carry out, that a capable engineer, who understands harbor development thoroughly, should make a complete survey of your harbor as it now exists, and prepare plans for 10 or 15 years ahead looking to the future development, and that these plans should be very carefully prepared and well thought out in order that whatever work may be done in any one year, it would be part of a large, well-conceived scheme.

"St. John and Halifax are Canada's two winter ports, and the volume of business to be done in the future will very greatly exceed that done in the past, and I hope also that the all-the-year-round business of these two ports will continue to grow in volume, and the government must see to it that accommodation is provided well in advance to cope with it.

"The government has granted the dry

dock subsidy for the construction of a large graving dock at Courtenay Bay, and this is part of the modern port equipment. Rapid loading and unloading of vessels and the time in which a vessel can be turned around is very important. Therefore, when plans are being prepared for a more modern equipment for the port of St. John, it will be necessary to see to it that the port has good railway facilities and all modern appliances for the rapid unloading and discharging of cargoes.

"I have had a royal commission investigate your pilotage system, and a report has been rendered by them which I hope to give consideration to immediately on my return to Ottawa. For the success of the port of St. John, or any other of Canada's big seaports, it is very essential that the pilotage system should be on a most efficient basis. It is my intention, if the pilotage system of the whole of Canada comes under the Marine Department, to see to it that the general superintendent of pilots at each one of the important seaports shall be an experienced man, and it will be necessary for him to have had seagoing experience, and to hold a master mariner's certificate. I understand that it is the general expression of opinion that the government should take over the pilotage system of St. John, and after I have read the report of the royal commission this will probably be done. I want to assure you, however, that the pilots will be well looked after under the care of the government, and that none of their interests will suffer in any degree, the government's only object being in making such change as will make for greater efficiency in this important branch.

"You are aware that I announced in Parliament on April 4, last, that the government, after careful consideration, had decided to go in for steel shipbuilding on a permanent basis. Prior to this the Imperial Munitions Board was building steel ships in some of the yards for England, and it was thought a wise policy by the government for Canada to occupy these yards to the full in building steel ships for the Dominion Government. In order to make steel shipbuilding in Canada secure a contract was entered into with the Dominion Steel Corporation at Sydney, N.S., for 250,000 tons of ships plates covering a period of 5 years. This mill is under erection at a cost of \$5,000,000 and I am pleased to inform you that I expect it to be completed and rolling ships plates by July next.

"You will be interested to know that the annual output of Canada's yards for steel ships at present amounts to 250,000 tons. The government has under construction at the moment 22 steel ships, approximating in cost \$25,000,000, and the number of ships that will be under construction next year will be considerably larger than what is being constructed at the present time, and approximating in cost \$35,000,000. The size of the ships being constructed by the government is 10,500 tons, 8,100 tons, 4,350 tons and 3,750 tons, d.w., the smaller size vessels being constructed in the shipyards on the Great Lakes, their size being limited by the width and depth of the canals. These ships on completion will be owned and operated by the Canadian Government. I am determined that the government's ships shall be managed entirely free from politics and on a strictly business basis.

"It is also necessary for the government to have ships to operate on the Pacific and Atlantic Oceans and on the Great Lakes in conjunction with the great transcontinental railway which the government now operates, the Canadian Northern Ry. and the Intercolonial. There will be ready for sea this autumn 2 ships, and possibly 4, of 8,100 tons and 4,350 tons. At least two of these ships will be ready to go to sea by early December, and it will be the first time in the history of Canada that her own merchant marine will have ploughed the seas.

"The names of the first three ships will be Canadian Pioneer, Canadian Voyageur and Canadian Warrior; the first two will be built by Canadian Vickers Ltd., and the third by Collingwood Shipbuilding Co. The prefix Canadian will be followed throughout for the names of all the government ships."

A St. John paper also credits the Minister with stating there that he understood the construction of a steel shipbuilding plant at St. John was contemplated and that the government would give whatever company started, contracts on the same basis as Halifax and other yards.

### Loss of C.P.R. Princess Sophia.

The C.P.R. s.s. Princess Sophia, which sailed from Skagway, Alaska, Oct. 23, with a heavy passenger list, for Vancouver, ran on the Vanderbilt Reef, in the Lynn Canal, about half way between Skagway and Juneau, some time on Oct. 24. It was considered that being fast on the rocks, and comparatively sheltered, there was little, if any, danger for the passengers and crew, until assistance could be sent. Several smaller vessels, such as lighthouse tenders, etc., answered the calls, and the C.P.R. immediately dispatched a vessel from Vancouver to take over the passengers. On the morning of Oct. 25 the U.S. tender Cedar approached within 400 yards of the Princess Sophia, but could not obtain anchor hold, and was driven back, the storm having increased considerably. Later, the Cedar received a wireless message from the Princess Sophia that she was sinking, and when daylight broke on Oct. 25, nothing was to be seen of the vessel but the foremast, she apparently having been driven across the reef into deep water, where she sank, with all passengers and crew. The number of lives lost reported at the time of writing, is 346; of these, 285 were passengers, and 61 crew.

The White Pass & Yukon Ry. Co. issued a list of 84 of its employees who were on board, among them being Capt. C. J. Bloomquist, master; J. R. Young, chief engineer; A. McLeod, second engineer; S. S. Chenery, purser, s.s. Dawson; M. W. Schellingtaw, B. Wilkinson, Victoria, B.C.; R. C. Haws, P. Vint, Vancouver, B.C., and Capt. J. F. Douglas, New Westminster, B.C.

The s.s. Princess Sophia was built at Paisley, Scotland, in 1911, and was screw driven by engine of 182 n.h.p. Her dimensions were: length 245.2 ft., breadth 44.1 ft., depth 24 ft.; tonnage, 2,320 gross, 1,466 register.

The British American Steamship Co., Ltd., has been incorporated under the Dominion Companies Act, with \$3,000,000 capital and office at Toronto, to own and operate steam and other vessels, and to carry on a general navigation and



## Atlantic and Pacific Ocean Marine.

Canadian Pacific Ocean Services' steamships Empress of Japan and Mont-eagle, are reported to have been requisitioned for Government purposes. It is stated that either the Empress of Asia or the Empress of Russia, will be released shortly for the company's service.

## Maritime Provinces and Newfoundland.

The name of the s.s. Meteghan I, owned in Meteghan, N.S., and registered at Yarmouth, N.S., has been changed to Robert Austin.

The Newfoundland Steam Screw Tug Co., Ltd., is being wound up voluntarily, with R. G. Rendell and W. G. Strong, St. John's, Nfld., as liquidators.

The Newfoundland customs cruiser Fiona, which has been in service since 1884, was sold Oct. 1, by public auction, to James Baird, Ltd., for \$13,500.

The Dominion Public Works Department has awarded the contract for the repair of its s.s. Tyrian, to T. Hogan & Co., Halifax, N.S., for \$19,890.

Owing to the development of a leak in the bottom of lock 4 on the Soulages Canal, Oct. 18, traffic was tied up for several days, and there was considerable congestion of vessels.

The contract for the dredging at the Dominion Government wharf at Fourchu, N.S., has been awarded by the Public Works Department to the Atlantic Dredging Co., at 60¢ a cubic yard, the total being about \$5,400.

The steam tug Hugh D., owned heretofore by Hugh Cann & Sons, Yarmouth, N.S., is reported sold to New York interests. She was built at Shelburne, N.S., in 1908, and is equipped with engine of 24 n.h.p., driving a screw. Her dimensions are: length 80 ft., breadth 18 ft., depth 7.6 ft.; tonnage, 71 gross, 32 register.

The schooner Lavonia, which ran aground at Cape Tormentine, N.B., several months ago, and which was purchased by Mr. McManus, Moncton, N.B., was refloated and taken to Pictou, N.S., recently, where she had a new bottom put in, and had a general overhaul. She is not reported to have been sold for about \$34,000. R. Hall is now managing owner.

The s.s. Stella Maris, which was at anchor in Halifax harbor when the disastrous explosion occurred there in December, 1917, and had a large piece of metal driven through her hull, is being repaired by the Halifax Shipyards, Ltd., and is expected to be ready for service again, early in November. She is of about 500 tons, was originally a gun boat, and was sold by the Halifax Graving Dock Co. to Burns & Kelleher.

## Province of Quebec Marine.

The s.s. Winnifredian, which ran on the rocks at St. Marys Islands, near Quebec, in September, and sank, was refloated at the end of the month, by the Quebec Salvage & Wrecking Co., under the supervision of Capt. Kjerland. Compressed air only was used, the amount required being 133,000 cu. ft., fed at the rate of 2,000 cu. ft. a minute.

Bids were received Oct. 31, for the owners, by Davidson, Wainwright, Alex-

ander & Elder, solicitors, Montreal, for the purchase of the barge E. H. Lemay, with her cargo of about 221 tons of anthracite coal, and the barge Lawrence C. Giff, with equipment and any effects thereon, as they lie submerged in the St. Lawrence River near Wayagamac Island below Three Rivers, Que.

The Montreal Harbor Commissioners held their annual inspection of the port, Oct. 8, when a number of newspaper men were invited to see the many improvements which have been carried out, or are in progress there. The President, W. G. Ross, thanked the newspaper men for the silence which had been maintained during the war, on the extensions and improvements which had been made, to enable the commissioners to deal with extraordinary shipping which had passed through the port.

## Ontario and the Great Lakes.

The s.s. David W. Mills, which sank at Port Stanley, some time ago, has been raised and taken to Buffalo for examination and repairs.

The Landbo Transportation Co.'s s.s. Landbo was reported ashore on Goose Island shoal, near Mackinac Island, Lake Huron, Oct. 26.

The Great Lakes Transportation Co., Midland, is reported to have been awarded the contract for icebreaking in Thunder Bay and local harbors, for five years.

The s.s. Senator Derbyshire, owned in Montreal, en route from Ogdensburg, N. Y., to Chicoutimi, Que., with coal, Oct. 13, struck a shoal in the river, and was subsequently beached near Brockville.

Vessel traffic through the St. Marys River was practically suspended from 11 p.m., Oct. 16, to 11 a.m., Oct. 17, on account of a dense fog. Vessels anchored where they happened to be, until the fog lifted.

The Montreal Transportation Co.'s tug Mary sprang a leak, when running light between Montreal and Kingston, Oct. 18, and sank near Pine Tree Point, below Iroquois. The crew were saved, and as the vessel lies in a good position, it is not expected that there will be any trouble in salving her.

The Montreal Transportation Co.'s barge Hamilton sprang a leak while passing through the Welland Canal, Oct. 5, and returned to Port Colborne, where she unloaded her cargo of grain, 4,000 bush. of which are said to have been damaged. She left later for Buffalo, where she was drydocked for repairs.

Canada Steamship Lines' s.s. J. H. G. Hagarty struck an obstruction in Hay Lake, while heading for the West Neebish Passage, Lake Superior, Oct. 18, and sustained some damage, which caused her to list badly. She was taken to the Algoma dock and her cargo was lightered, as it was not considered safe for her to proceed on her downbound trip.

The Reid Towing & Wrecking Co., Port Huron, Mich., is reported to have ordered a steel steam tug to be built by the Foundation Co., at its Port Huron yard, which was taken over recently from the Reid Towing & Wrecking Co. The vessel, it is reported, will cost about \$300,000, and will be delivered during November, fully equipped and ready for service.

Surveys have been undertaken of the U.S. s.s. Charles S. Price, one of the vessels wrecked in Lake Huron during the great storm in Nov., 1913. Two days

were spent in examination early in October, but the s.s. Brojate, which was chartered for the job, had to return to Detroit, Mich., owing to bad weather. The vessel lies in 60 ft. of water, about 13 miles out from Sarnia.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level for September as follows: Superior, 602.54; Michigan and Huron, 581.50; St. Clair, 575.77; Erie, 572.60; Ontario, 246.20. Compared with the average September levels for the last 10 years, Superior was 0.11 ft. below; Michigan and Huron, 0.86 ft. above; Erie 0.08 above, and Ontario 0.03 ft. below.

A press report stated recently that the ice breaking steamship James Whalen was about to be sold to the Great Lakes Transportation Co., Midland, for ice-breaking purposes in Thunder Bay. It was also stated that the Dominion Government had awarded a contract to that company for the usual annual icebreaking in the Bay. We were officially advised, Oct. 19, that no contract had been entered into with that company for ice-breaking on Thunder Bay, but that, with other companies, it had tendered, and being the lowest tenderer, recommendation for its acceptance had been made.

The appeal of Auditors & Co., Buffalo, N.Y., against the claim of Canadian Vickers, Ltd., for \$52,983.34, for work done on the s.s. Susquehanna, was dismissed in the Admiralty Court at Montreal Oct. 18. The appellants offered to pay \$32,000, and disputed items—profits \$16,544.89, and overhead charges \$13,157.20. The Susquehanna was one of the U.S. lake steamships which was divided in two at Buffalo for passage through the Welland Canal, and re-united and converted into a seagoing steamship by Canadian Vickers, Ltd. She was torpedoed subsequently and sunk by the enemy.

The Detroit & Windsor Ferry Co., on Oct. 20, gave notice of an increase in the rates of fare, pending a decision of the Government as to the granting of a new franchise. The Mayor has protested against the increase, and has asked the Government to disallow same. The increase provides for 8 tickets for 25¢, instead of 10, and commuters' tickets of 100 trips for \$2.25 instead of for \$1.50. The Windsor Ferry Co., Ltd., was incorporated recently, to operate a ferry service between Windsor and Detroit, and O. E. Fleming, K.C., is reported to have stated that this company had made arrangements for a landing place in Windsor, at the foot of Brock St. C. Millar, Toronto, is said to be interested in the new company.

The Marconi Wireless Telegraph Co.'s application for an injunction to restrain the Canadian Car & Foundry Co. from installing certain wireless telegraph apparatus on mine sweepers under construction at its Fort William, Ont., plant, for the French Government, was refused by Mr. Justice Bruneau at Montreal, Oct. 25. In delivering judgment, he is quoted as saying:—"The French Government wants these ships. It is a question of urgency. Any interference by this court in the manner asked would delay construction, equipment and delivery of the ships. The respondents may be made to account for what they have done—but later on, after the war. To grant this injunction would be, in my opinion, but nothing less than a crime against the French Government, without doing any practical good to the petitioner."

Basset Steamship Co., Toronto, is reported to have sold the s.s. Mariska to



Canada Steamship Lines, Ltd., for \$310,000. She was bought from the Pittsburgh Steamship Co. in 1913, and was built at Cleveland, Ohio, in 1890. She is of steel with double bottom for water ballast, steel boiler house, 3 watertight and 2 non watertight compartments, cargo hatches 24 ft. centers, and of the following dimensions: length between perpendiculars 291 ft., breadth moulded 40 ft., depth moulded 22 ft.; tonnage, 2,502 gross, 1,875 net. She is equipped with triple expansion engines with cylinders 24½, 38 and 61 in. diam. by 42 in. stroke, 1,200 i.h.p. at 80 r.p.m., and supplied with steam by 2 Scotch boilers 14 ft. long by 12½ ft. diam. at 160 lb. We have been officially advised that Canada Steamship Lines, Ltd., has not purchased the vessel, and have also been advised that she has been sold to J. F. M. Stewart, Toronto, and that she has been cut in two at Collingwood, for passage through the Welland Canal, to a St. Lawrence port, when she will be rejoined and placed in Atlantic service.

The Montreal Transportation Co. is reported to have sold the s.s. Paipoonge and the barge Thunder Bay to Cuban interests. The s.s. Paipoonge was built at Cleveland, Ohio, in 1888 and named Corona. She is of steel with double bottom for water ballast, 3 watertight and 2 non watertight bulkheads, steel boiler house, electric light, hatches 24 ft. centers, and has dimensions: length 292 ft., breadth 40 ft., depth 24½ ft.; tonnage, 2,517 gross, 1,634 net. She is equipped with triple expansion engine with cylinders 20, 38 and 61 in. diam. by 42 in. stroke, supplied with steam by 2 Scotch boilers 14 ft. diam. by 11 ft. long, at 180 lb. working pressure, developing 1,200 i.h.p. The barge Thunder Bay was built at Cleveland, Ohio, in 1895 and named Malta. Her dimensions are: length 302 ft., breadth 40.2 ft., depth 25 ft.; tonnage, 1,951 net. Both vessels will have to be cut in two to pass through the Welland Canal, and it is stated that this has been taken in hand, and that the vessels will be taken to the coast before the close of lake navigation.

### British Columbia and Pacific Coast.

The C.P.R. is reported to have chartered the steam tug Dola for its car barge service to Vancouver Island.

Navigation on the Yukon River closed Oct. 12, with the sailing of the last vessel of the season from Dawson for White Horse.

The C.P.R. s.s. Princess Adelaide, bound from Vancouver to Victoria, ran ashore at Georgina Point, Main Island, Oct. 13. The passengers were transferred to the company's s.s. Princess Alice safely.

The Dominion Public Works Department has filed plans at Vancouver, B.C., for the erection of freight sheds at the government dock there. The cost of the sheds is stated as \$120,000.

The Dominion Minister of Public Works is reported to have stated at Vancouver, Oct. 23, that \$250,000 will be placed in the estimates next year for dredging from the mouth of the North Arm of the Fraser River, to New Westminster.

The Pacific Steamship Co.'s s.s. Ravalli, which was considerably damaged by fire at Lowe Inlet, June 14, and salvaged by the Prince Rupert Dredging & Salvage Co., was towed into Vancouver, towards the end of September by the s.s. Georgia.

A contract for the repair of the vessel will be awarded shortly.

The Union Steamship Co.'s s.s. Camosun ran on the rocks at Brockton Point, Burrard Inlet, Oct. 1 and tore a hole in her bow above the water line. As she was running at slow speed on account of the fog, the damage was comparatively light. The 150 passengers were taken off by Vancouver firemen using their ladders, but the crew remained on board. The vessel released herself on the rising of the tide and her schedule is not being interfered with, at least, for a time.

It is announced that the dual position of Wreck Commissioner for British Columbia, and Examiner of Masters and Mates, Victoria, B.C., held for some years by Capt. J. D. Macpherson, has been abolished, and that he has been appointed Wreck Commissioner for British Columbia. Pending a permanent appointment, it is stated that Capt. Chas. Eddie, Vancouver, B.C., will conduct all examinations in connection with applications for certificates of competency as masters and mates.

The s.s. Beaver, which was acquired from the C.P.R. by the British Columbia Government, recently, is being overhauled and transformed into a ferry boat by the Star Shipyard and Westminster Iron Works, New Westminster. When completed she will be placed in service between Ladner and Woodwards. She was built at Victoria, B.C., in 1898, and is a steel vessel, paddle wheel driven by engine of 13 n.h.p. Her dimensions are: length 140 ft., breadth 28 ft., depth 5.1 ft.; tonnage, 545 gross, 344 register.

J. C. McIntosh, M.P. for Nanaimo, is reported to have stated that he has been assured by the Minister of Public Works that if a private company will undertake the construction of a dry dock at Esquimalt, the Government will assist the project under the act to aid the construction of dry docks. It is stated that a Vancouver company is anxious to build a dry dock in Vancouver, and to avail itself of the Government subsidies, but that the Minister has said that the first chance is to be given to Esquimalt.

J. P. Davies, Montreal, owner of the steam tug Salvor, is claiming \$20,000 for salvage services rendered to the Japanese s.s. Canada Maru, when she ran on the rocks at Cape Flattery recently. The tug was owned by the British Columbia Salvage Co., and it is claimed that she was sold and the money paid over, on the day the Canada Maru casualty occurred, and prior to the call for assistance. The Salvor has been transformed into a freight carrying vessel for service between the B.C. coast and Australia.

The repairs necessitated to the Japanese s.s. Canada Maru, which was wrecked at Cape Flattery recently, and which are being done by Yarrows, Ltd., Esquimalt, cover extensive damage forward. About 35 plates have been removed, renewal of the fore foot, straightening of a considerable number of frames, repairing tank tops, etc. The bottom damages are so great that it is impossible for the keel to rest on the blocks, and the vessel has had to be shored up with iron clad timbers wedged under the overlapping plates on either side. The keel forward will be replaced in sections.

A Mercantile Marine Ensign has, according to an Ottawa press dispatch, been adopted for the steel cargo vessels being built for the Dominion Government, and it is said that it will consist of the Union Jack, with the beaver and an anchor.

### The Salvaging of Wrecked Vessels.

Salvaging has been carried on by British wrecking companies on an unusual scale during the last four years. Much more progress has been made in raising sunken tonnage in the vicinity of the British Isles than most people are aware of. More than half of the British ships sunk by submarines in the last 30 months have been raised and restored to service, according to a conservative estimate. Figures given out by a British authority place the number of ships salvaged by the Admiralty Salvage Department at 260 for the period from 1915 to 1917, all of which were of big tonnage. For the first five months of 1918, there were 147 vessels raised, bringing the total since 1915 to 407. These figures exclude ships raised outside British waters.

Regarding the development of salvage activities in American waters, The New York Journal of Commerce is sceptical of extensive work being undertaken. In the opinion of U.S. shipping men, new shipbuilding is being produced at such comparatively cheap rates that it offers a serious competition with wrecking as a means of producing tonnage quickly. The field for such work on the American coast is, of course, much less fruitful for wreckers than is that on the other side of the Atlantic.

After the first few months of the war the demand for tonnage became so great, and values so tremendously expanded that numerous wrecking and raising enterprises were undertaken in all parts of the U.S. coast, Great Lakes and inland rivers; of vessels which had long been abandoned because the cost of raising them was greater than they were worth, but in wartime became practicable. Some of these jobs attracted much attention at the time, and netted the speculators handsome profits, besides showing them many a new wrinkle in operating methods.

But today available wrecks are not plentiful, within depths of water which can be worked, and inquiry among wrecking concerns shows little disposition to undertake work abroad. Europe has plenty of wrecking concerns to attend to all available materials, they say. It is true that U.S. companies have, in some favorable cases, undertaken work in foreign waters, but most of the sinkings have been in water too deep to permit operation by any methods at present employed.

The limit for a diver of the ordinary type and physical capacity is less than 100 ft., and those who can go down in depths of 150 ft. are very rare. Work of that character is necessarily expensive and limited to very short periods, entailing long drawn out operations to accomplish anything. There have been attempts made at the construction of diving suits of metal, with mechanically jointed shoulders, elbows, knees, etc., and hook "fingers," but, as one of the largest wrecking companies put it: "We are from Missouri in that respect 'till they show us that they will work right, and they haven't done it yet. When they do, we are willing to adopt them."

Something has been done along the line of using huge electro magnets for lifting ships, but professional shipwreckers are not enthusiastic about them. Heretofore it has been considered as impracticable to lift any hulk of more than 1,500 tons with ropes passed under her keel, but the increased incentive has lately resulted in almost doubling this weight, and with the use of pontoons working the load into shallow water. Wreckers admit that in America there has been less development



of novel methods than in England, principally due to the lack of material on which to work and consequently absence of incentive.

While a ship comparatively easily raised still offers large returns to the salvage contractor, the rapid development of shipbuilding—or ship manufacturing, to be more exact—is making the speculation with all its attendant risk of complete failure less alluring every day. At best, wrecking at sea—and most of the sinkings have been in exposed places—is uncertain. At the very minute when success seems assured a heavy gale or storm or a high sea may undo in an hour the preliminary work of weeks and all the expenditure is wasted. It is this which makes wrecking companies exact heavy rewards on uncertain problems and takes away the attractiveness of lifting old hulls.

The St. John Steamship Co., Ltd., has been incorporated under the New Brunswick Companies Act, with \$49,000 authorized capital and office at St. John, N.B., to own and operate steam and other vessels, and to carry on the general business of steamship owners and merchants. The incorporators are, J. G. Harrison, A. L. Fowler, and T. E. G. Armstrong, all of St. John. The company is reported to have a steamship under construction at Yarmouth, N.S., for Bay of Fundy service. Formation of the company and the order for the new vessel are said to have been determined by the fact that owing to the sale of packet steamboats formerly on the Minas Basin route, and the withdrawal of the vessels from that service, communication between St. John with important Nova Scotia centers by water was interrupted and local merchants put at the disadvantage of competing with Halifax over a long rail route.

**English Channel Car Ferry System.**—Among the many things which the war has brought into being, and which have been matter for discussion for years, is a car ferry system between England and France. Low ferry boats, specially built for the purpose, are being used, and cars from English railways are run on board and transferred to the French railway system, and thence to their destinations. The service is under government control, and is said to have proved its value. The difficulty of transferring the cars to and from the ferries at all stages of the tide, which is said to have held up several previous schemes, has been overcome. It is expected that this, or a similar system, will be continued after the war, until the channel tunnel, which is now practically assured, is built.

**Port Arthur Shipbuilding Co., Port Arthur, Ont.**—The last of the steel cargo steamships under order by the Imperial Munitions Board for the British Government, was launched at this yard, Oct. 5, and christened War Horus by Mrs. James Conmee. This vessel has a deadweight capacity of 3,400 tons, and it is expected that she will be ready for sea well before the close of lake navigation.

In the agreement between the U.S. Government and the Western Union Telegraph Co., under which the company's lines are being operated by the U.S. Post Office Department during the war, the government, according to a press report, undertakes to pay all interest on outstanding bonds, all dividends and interest due on stocks and bonds of subsidiary companies, all taxes and operating charges, and in addition, \$8,000,000 a year.

### Mainly About Marine People.

G. F. Moore, Sydney, N.S., has been appointed shipping master for the port, vice M. McKinnon, resigned.

S. McClay, one of the Vancouver Harbor Commissioners, has been elected a director of the American Association of Port Authorities.

Sir Arthur Harris, Director General for Canada, British Ministry of Shipping, left Montreal, towards the end of October, on a trip to the Pacific coast.

James Carruthers, President, Canada Steamship Lines, Ltd., Montreal, has been elected a Canadian director of the London, Liverpool & Globe Insurance Co.

F. D. Geohegan has been appointed Eastern Passenger Agent, Northern Navigation Co., Sarnia, Ont., to assist the Manager in the Passenger Department.



Lieut. Col. F. A. Gascoigne, D.S.O.,  
Secretary-Treasurer, Canadian Pacific Ocean Services, Limited.

James Carruthers, President, Canada Steamship Lines, Ltd., has given the Western Hospital, Montreal, securities valued at \$50,000, yielding an annual revenue of \$3,000.

G. W. Crossan, heretofore Surveyor, Naval Service Department, has been appointed Assistant Works Manager, Engineering Department, Halifax Shipyards, Ltd., in charge at present of all repairs to engines, boilers and machinery.

J. H. Price, formerly General Manager, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C., is now Managing Director of Kiernan & Kern, shipbuilders, Seattle, Wash., who are building wooden steamships for the U.S. Emergency Fleet Corporation.

Capt. Norman Mackay, master of the Canadian Northern Ry. car ferry Canora, which left Lauzon, Que., for the Pacific Coast, recently, was presented with a gold watch by the builders, the Davie Shipbuilding & Repairing Co., before leaving.

James Playfair, President and General

Manager, Great Lakes Transportation Co., and Vice President and General Manager, Midland Shipbuilding Co., Midland, Ont., celebrated the 29th anniversary of his wedding, Oct. 25, by launching the first steel steamship to be built at Midland.

E. W. Holton, heretofore General Passenger Agent, Northern Navigation Co., Sarnia, Ont., has been appointed General Freight Agent in charge of Freight Traffic, with office at Sarnia, Ont., and the Passenger Department has been placed under the supervision of the Manager, H. H. Gildersleeve.

Capt. R. D. Foote, commodore of the Northern Navigation Co.'s fleet on the Great Lakes, has retired after over 50 years service on the lakes, 35 of which have been spent with the Northern Navigation Co., and its predecessors. He has been master of the s.s. Noronic since she was built in 1913, and prior to that was master of the s.s. Hamonic from her maiden voyage.

Lieut.-Col. F. A. Gascoigne, D.S.O., who has been appointed Secretary-Treasurer, Canadian Pacific Ocean Services, Ltd., Montreal, was born at Gosport, Hants, Eng., Apr. 2, 1866, and entered Canadian railway service May 18, 1883, since when he has been, to Aug., 1884, car checker and general clerk, C.P.R., Brockville, Ont.; Aug., 1884, to Aug., 1891, record clerk, foreign mileage clerk, and statistical clerk, Car Accountant's office, C.P.R., Montreal; Aug., 1891, to Feb., 1903, chief clerk, Car Service Department, C.P.R., Montreal; Feb., 1903, to May 31, 1909, Car Accountant, C.P.R., Montreal; May 31, 1909, to May, 1915, Superintendent, Car Service, Eastern Lines, C.P.R., Montreal. As commanding officer of the 3rd Victoria Rifles, he took an active part in recruiting in the early stages of the war, and in May, 1915, he was appointed to command and organize the 60th Battalion, which he took overseas, serving with it for two years, and receiving the Distinguished Service Order.

The Cunard Steamship Co. announces that it has made arrangements for taking over the general passenger agency of the Toyo Kisen Kaisha, the third largest steamship company in Japan, and operating steamships between Japan and Pacific coast ports, calling at Honolulu. The agency in Great Britain was held formerly by the Southern Pacific Co., but on the taking over of the company by the U.S. Railroad Administration, it was found to be impracticable to continue the arrangement. This change in agency has given rise to another rumor in connection with possible amalgamations of, or absorptions by, British steamship companies.

G. W. Crossan, heretofore surveyor, Department of Naval Service, is reported to have been appointed Marine Manager, Halifax Shipyards, Ltd., Halifax, N.S. He was for some time engaged in navigation on the Great Lakes, and since the commencement of the war has taken several vessels overseas. He served his apprenticeship in Clyde shipyards, Glasgow, Scotland, and has been chief engineer of several vessels. He was for some time resident in Toronto.

A. D. Swan, engineer of the Marine Department, arrived in Vancouver from Ottawa, Oct. 21, to undertake an examination of the port, and report to the Minister of Marine, as to improvements required to enable the rapidly increasing traffic to be dealt with adequately.



## Single Screw Steel Mine Sweepers for French Government Built at Fort William.

As first announced in Canadian Railway and Marine World for March, an order to build 12 mine sweepers for the French Government was given the Canadian Car & Foundry Co. in February last, being placed by the French Military Navy Department of the French High Commission to the United States. The company decided to build them at its Fort William,

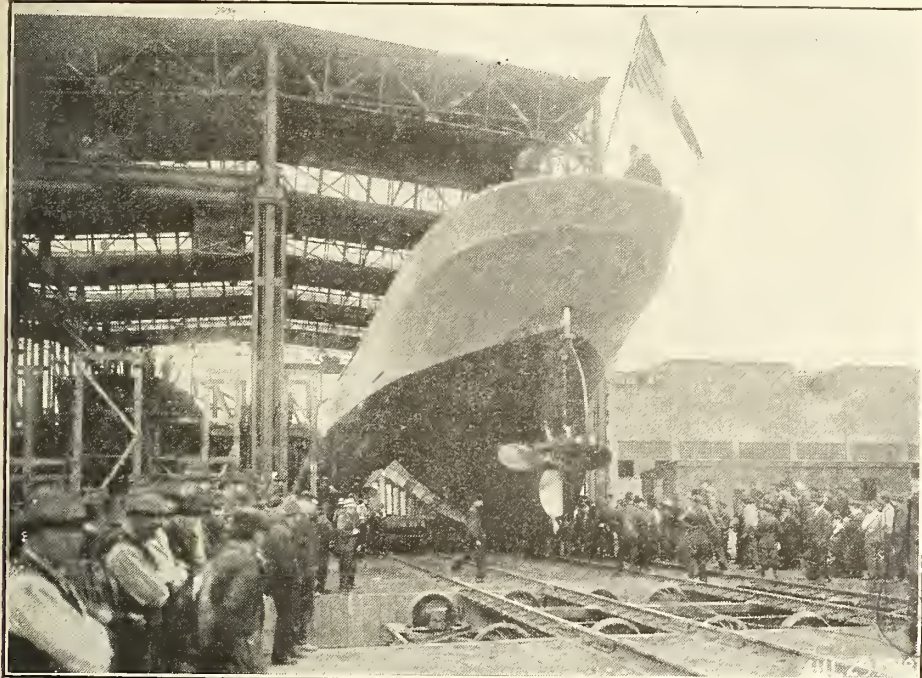
water level and the grade of the plant of approximately 40 ft. It was decided to build the vessels adjacent to the plant, rather than close to the water, and then to move them to the water's edge by special means. For the building of these vessels the company erected, adjacent to its main car plant, a separate building, divided into 6 building berths. This build-

the double line of tracks, laid from the transfer table to the river. The hull was then moved farther toward the river, by a locomotive and cable, until it had crossed Montreal St., the Grand Trunk Pacific Ry., and the Fort William Municipal Ry. Immediately after the crossing of these tracks, the incline to the water commences, being about an 8% grade. At this point another locomotive was attached by a cable, and the hull from there on descended to the river by its own weight, but was held in check by the cable fastened to the bow end, and which in turn was attached to the locomotive with a short string of cars, and by means of the air brake on the locomotive the hull was allowed to descend or be stopped at will. The river bank was excavated for this grade, and also deep enough to form a slip in from the river, and the railway tracks were laid practically to the river bank, so as to allow the trucks to go right into the water. Immediately they descended into the water deep enough, the hull floated off the cradles and they were then pulled back for future use.

The first of the 12 vessels was launched July 29 and the last on Oct. 14. Their names are: Navarin, Mantoue, Saint Georges, Leoben, Palestro, Lutzen, Bautzen, Senef, Cerisoles, Sebastapol, Malakoff, Inkerman. Three of the vessels have been thoroughly tested and delivered to the French Commission, having met all requirements in reference to speed, coal consumption, etc.

The mine sweeper Mantoue, while downbound Oct. 26, collided with the car ferry Bessemer, during a severe fog on Lake Erie. Both vessels were somewhat damaged, and the Mantoue put in at Cleveland, Ohio, to await further instructions before proceeding on her voyage to the Atlantic.

The Canadian Northern Ry. Car Ferry Canora, left Quebec, Que., Oct. 1, on her



Mine Sweeper for French Government, leaving building, on cradles and trucks, for transfer table.

Ont., plant, and estimated that an assembly plant and launching facilities could be provided there for \$250,000. The vessels have the following general dimensions, etc.:

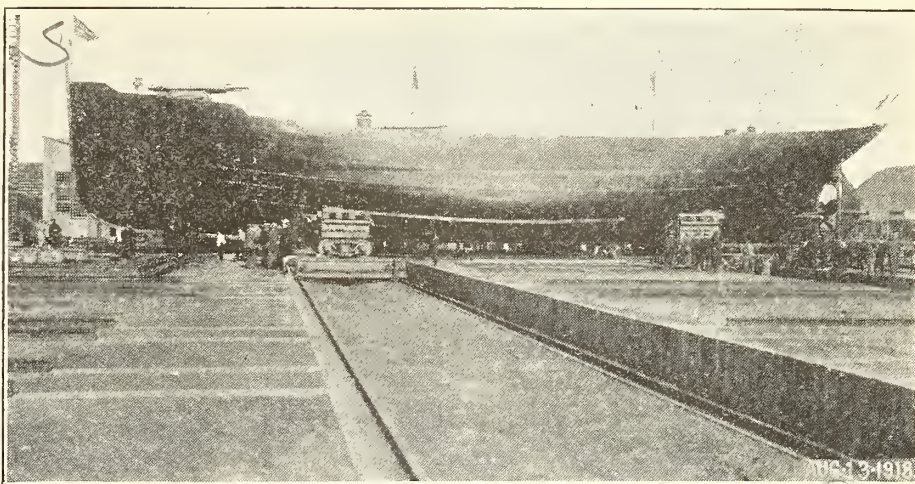
Length, over all .....	143 ft.
Length, between perpendiculars .....	135 ft.
Breadth, moulded .....	22½ ft.
Depth, moulded to main deck .....	13¼ ft.
Depth, moulded to quarter deck .....	14¼ ft.
Displacement, loaded .....	630 tons.
Freeboard, Lloyds .....	15 in.

They are of the single screw, steel steam trawler type, and are built to the full requirements of Lloyd's register, class 100 A1 steam trawlers, single deck, with raised quarter and forecastle decks and steel deck house. The top of the boiler house and winch casing form the navigating bridge, on which is a steel house containing the captain's room and wheel house. On top of the deck house aft is a steel house for the wireless telegraph operator, with platforms at sides for lifeboats. Two pole masts of Oregon fir are fitted, the foremast stepped in cast housing on the main deck, and the main mast is housed by the deck house aft. Steam steering engines are installed in the upper engine rooms. Included in the deck machinery equipment are: double cylinder, 2 drum steel trawl winch, with reversing engines; double cylinder, single drum, steam hoister, with non-reversing engines, and a steam windlass.

The system adopted in building and launching these vessels was unique. The company's main car shop at Fort William is approximately 1,000 ft. from the Kaministiquia River and there is a difference in the elevation between the

ing is of steel and concrete construction and is served with overhead travelling cranes to facilitate the application of the steel.

After a hull was completed it was sup-



Mine Sweeper for French Government, on transfer table.

ported on 2 cradles, which were carried by 4 specially constructed trucks, as shown in one of the accompanying illustrations. The hull was then pulled out of the building, by a locomotive and a cable, on to a transfer table, as shown in another of the accompanying illustrations, allowing the hull to be moved sideways in either direction to line it up with

long trip to British Columbia, via the Panama Canal. She is expected to arrive about the middle of November, after which she will take up her service between Port Mann, on the south side of the Fraser River, and Patricia Bay, Vancouver Island. She is in charge of Capt. Norman McKay, Owen Sound, Ont., with W. Byers as chief engineer.



# Vancouver and Prince Rupert Harbors in British Columbia.

By S. McClay, one of the Vancouver Harbor Commissioners.

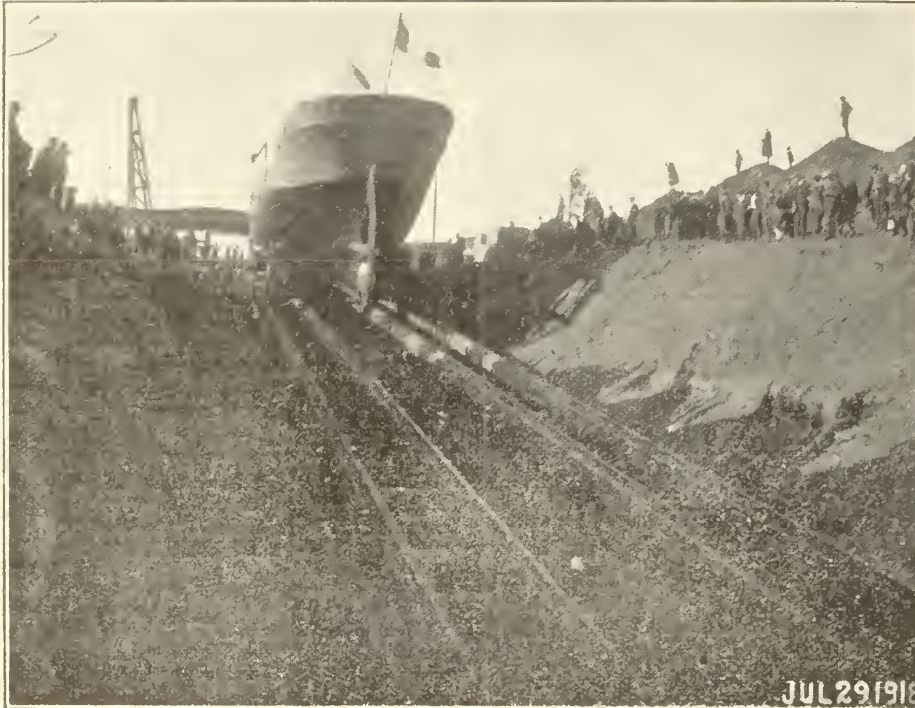
In the establishing, on a successful working basis, of a port of any magnitude, certain factors must exist, natural and acquired. As a foundation, the location must have behind it a territory in which is found population, natural re-

Capt. George Vancouver, R.N., commanding H.M.S. Discovery, which, accompanied by the armed tender Chatham, left Falmouth April 1, 1791, and for the following 4 years followed exploration and discovery work, in the course of which the

discoveries on the northwest coast of America. She sailed from England with 150 men on board, and such was the attention of the officers to their health that only one died in the course of a very fatiguing voyage of four years. They speak in the highest terms of the inhabitants of the Sandwich Islands, from whom they experienced every possible civility and attention."

For nearly a century after its discovery Vancouver remained a small settlement, its surrounding waters being devoted to only local uses, although Burrard Inlet (its inner harbor) was surveyed by Capt. Richards, of H.M.S. Plumper, in 1859-60. In the early eighties the Canadian Pacific Ry. saw the value of the harbor as the western terminal of the first Canadian transcontinental railway, and in 1886 completed its line to the point. The city was then incorporated and the name Vancouver given to it, in honor of the man who, 94 years previously, discovered the harbor. Since the incoming of the C.P.R. the development of the city and port has been phenomenally rapid. The survey of the harbor, which was made by Capt. Richards in 1860, was revised in 1891 by a thorough survey under the direction of W. J. Stewart, of the Dominion Hydrographic Department.

The harbor of Vancouver is described in ancient Admiralty records as "the first great harbor that indents the coast of British Columbia." It is located on the easterly side of the Straits of Georgia, some distance north of the 49th parallel, and a few miles northeast of the point where the flood of the Fraser River pours into the straits. The limits of the harbor are particularly described in an act of the Dominion Parliament as follows: "The harbor shall include Burrard Inlet, with the North Arm and Port Moody, False Creek and English Bay and all



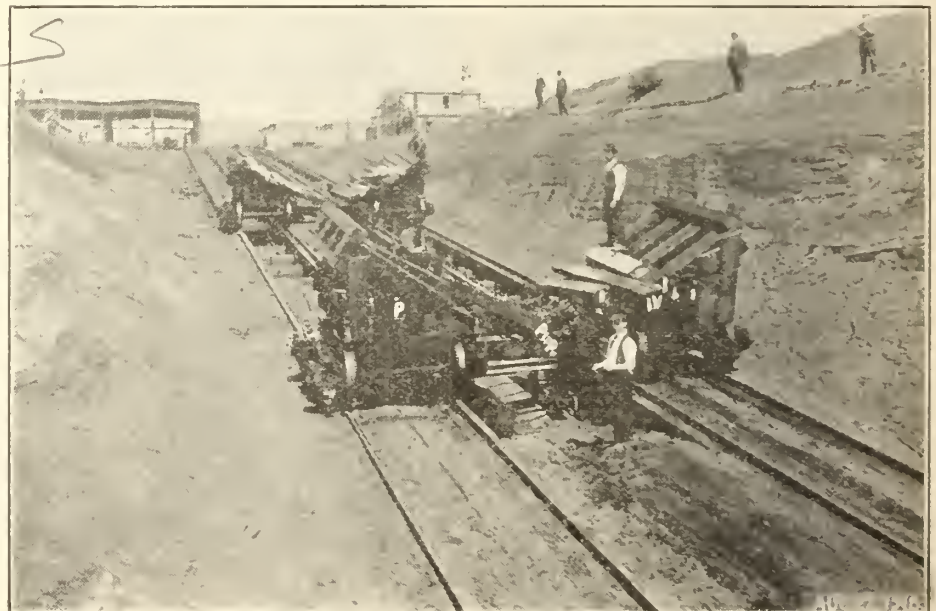
Mine Sweeper for French Government, going down incline railway toward the slip excavated in from Kaministiquia River.

sources and industrial development of such a character as to provide stable sea going trade. Before it must lie a territory which may be reached by the water route economically and afford a reciprocal market. The harbor itself must be located so as to afford natural protection for large vessels under advantageous conditions. Upon this foundation must be established rail and subsidiary coastal water connections which thoroughly tap the territory behind the harbor, and the natural location must be properly developed, either publicly or privately, by the provision of equipment for the prompt and economical handling of the water borne business of the port.

All of these conditions are found at Vancouver in a remarkable degree, and because of this fact the development of the point as a port has been phenomenally rapid, its position at present being such as to constantly attract with increasing force the attention of the great world interests. Largely as a result of the development of its business as a port, the city has grown from its scattered population of a few hundred in 1885 to its present position of the fourth city of Canada, having urban and suburban population of approximately 175,000. As a port, Vancouver today more than rivals Montreal, where systematic port development work has been carried on for years, and the outlook for Vancouver becoming one of the great seaports of the world is not by any means visionary. In the opinion of many who are able to speak with authority, such a future is absolutely assured.

History.—The discovery was made by

harbor was for the first time visited by white men. The return of the vessel to home ports, noted in the Annual Register for 1795, under date of September 24, is



Cradles and trucks for launching mine sweeper for French Government, at Fort William.

as follows:—"The Discovery, sloop of war, Capt. Vancouver, arrived at Limerick on the 13th inst. in company with the homeward bound East India fleet, having completely effected the object of her expedition, and made some important

other tidal waters lying east of a line drawn from the Point Atkinson light house southerly to the most westerly point of Point Grey."

English Bay, which may be termed the outer harbor, is an enclosed body of



water, having a uniform width of 5 miles, and extending from the Straits to Prospect Point; it forms the entrance to the central harbor, a distance of 6 miles. The depth of this portion of the harbor is from 50 to 60 fathoms at its entrance and 5 to 6 fathoms near the shores. This section is sufficient for the accommodation of extensive shipping. Up to the present, however, it has been but little used for the purpose, owing to the far more advantageous location afforded by the central harbor as hereafter described. English Bay is, however, so naturally located as to lend itself admirably to development work, which will make it an ideal location for port business, and, in the opinion of the writer, will, as the port develops, become the most important part of the harbor.

The central harbor is reached through First Narrows, where a channel 900 ft. wide (now being developed to a width of 1,400 ft.) exists, the depth being from 35 to 72 ft. at low water. The central harbor extends from First Narrows to Sec-

ond Narrows, a distance of 5 miles, with a maximum width of 2½ miles, and affording a depth of from 9 to 10 fathoms. It is in this section of the harbor that the greater part of the business as a port is carried on.

average hourly velocity for the last three years is reported as follows: 1915, 4.5; 1916, 4.6; 1917, 4.4. Even should a hurricane develop, the location of the inner harbor (which is three-fourths of the entire area) is such as to afford perfect shelter under such trying conditions.

The harbor is open all the year round, the question of ice as an impediment to its use in winter being a factor which need not be considered. The status of Vancouver as a winter port is unique in Canada, as it affords a water borne export outlet at a time when all other ports of the Dominion are either tied up or operated under great difficulties, owing to weather conditions. The prevailing temperatures for the last three years are reported as follows:—

1915—Maximum, 89.5 (August); minimum, 22.9 (December). Average, 51.36.

1916—Maximum, 82.9 (June); minimum, 6.0 (January). Average, 47.2.

1917—Maximum, 82.6 (July); minimum, 10.3 (January). Average, 48.8.

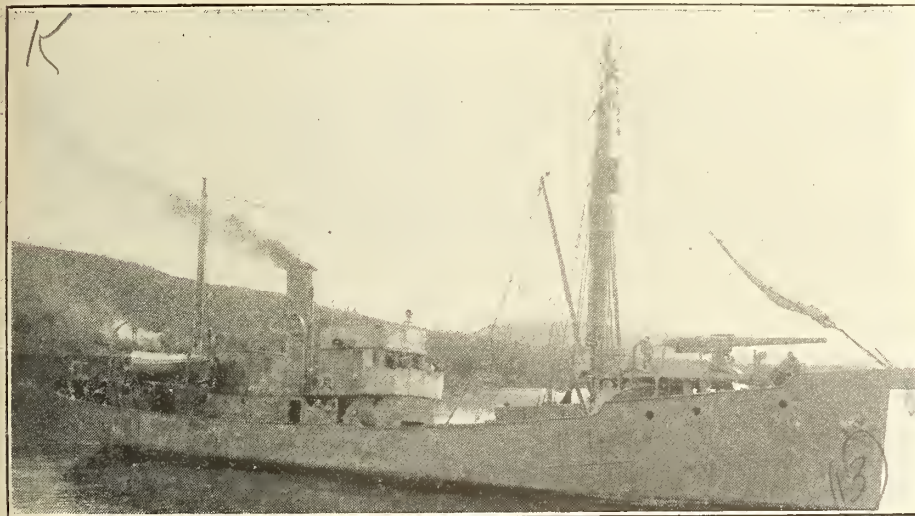
The area of the harbor is so great and

minion of Canada for water-borne shipments. It is also within 25 miles of the International Boundary Line, its location for port purposes being one of the facts borne in mind by United States transcontinentals when establishing terminals at the point. Its situation with reference to Panama Canal traffic is advantageous, as it is the first Canadian port on the Pacific in relation to this great trans-oceanic shortcut.

**Rich in Resources.**—Back of Vancouver stands a country with an area of nearly 4,000,000 square miles, which looks to the port as its natural Pacific outlet. Wonderfully rich in natural resources (the full measure of which has not yet been even approximated), rapidly advancing in population, already established as one of the great grain growing districts of the world, making rapid strides along every line of industrial development, this territory covers a wonderful field. The port is connected with every portion of the settled districts of this great area by the Canadian Pacific, Canadian Northern, Grand Trunk Pacific and Pacific Great Eastern Railways, all of which have terminals in Vancouver. To this must be joined the business coming from the U.S. over the Great Northern, Northern Pacific and the Chicago, Milwaukee & St. Paul Railways, all of which have either established terminals or connections with the port. Such is the truly wonderful field which stands behind Vancouver as a port.

Before the city lies the Orient—a fruitful field, as yet only partially developed—the islands of the Pacific and Australia, with all of which the port carries on business. Nor is the story yet all told, for Vancouver claims as a port a far wider field than the Pacific. Previous to the war, water borne shipments were carried on regular callings at the port to the Old Country, via the Mediterranean and the Suez Canal; and the possibilities opened up by the Panama Canal will undoubtedly still further strengthen its hold and widen its field of service to points upon both shores of the Atlantic.

**Advantages of the Port.**—One of the principal factors in port development is the provision of both rail and water cargoes in either direction, as the running of empties or voyages in ballast are not economic operations. Vancouver offers advantages in this line which are just now being fully brought out, mention concerning which I may well make at this point. For years the problem of transporting the immense grain crop of north-west Canada to its natural destination (the old country) has been hedged with difficulties, owing to transportation on the Great Lakes being closed during the winter. As a port which is open all the year round and affording direct connection with England via the Panama Canal, the advantages of Vancouver for such shipments were pointed out. Objection was made as to the danger of the grain deteriorating when shipped in bulk on account of the long voyage and the passage through the tropics. Last year, however, a trial shipment of 100,000 bush. was sent by this route. The experiment was closely watched by the government authorities, whose report on the trip was made recently. This report shows that the cargo contained 15% abnormal moisture when it left Vancouver in Nov., 1917, but that it reached London in Feb., 1918, in first-class condition, and was accepted as such by the consignees. This shipment proves beyond all question the possibilities of Vancouver as a port for the shipment of



Single screw mine sweeper Navarin, built at Fort William for French Government.

Burrard Inlet.—East of the central section, Burrard Inlet extends to Port Moody, a distance of about 9 miles, with a tributary inlet, the North Arm, extending for some distance to the north from Barnet. This section of the harbor may be termed the industrial section, as its shores offer adequate sites for the establishment of industries, which, on the south side, have the advantage of both rail and water transportation. Already many thriving industries are located in this section. These same remarks apply to False Creek, an arm of English Bay, extending east from Prospect Point, a distance of several miles, on the shores of which some of the principal industries of the city are now operating.

The natural location of Vancouver harbor is all that could be desired, view it from whatever standpoint one may. This fact has led both harbor experts and after dinner speakers to declare it "one of the best natural harbors in the world." It is perfectly sheltered, and the locality is free from periodical disturbances, such as cyclones, hurricanes, and even heavy winds. The greatest wind velocity ever recorded is 30 miles an hour, and the

its depth so ample as to allow free navigation under any conditions. The bed is chiefly a blue clay formation, which assures a good anchorage. The situation is such as makes it possible, when wharves are congested, to load or discharge cargoes from scows or lighters in the stream with perfect safety. Tidal conditions are also favorable, the greatest rise recorded in 24 hours being 16 ft., with a minimum report of 8¼ ft., and an average rise and fall of less than 12 ft. The harbor is practically free from submerged rocks, shoals and other dangers to navigation, such as are a handicap or a source of enormous expense to so many harbors.

**Strategical Position.**—I have previously mentioned the location of many thriving industries on the harbor foreshore, a point of manifest economic value in the operation of such plants. Vancouver harbor is well suited for this purpose, as, out of its entire 98.4 miles of waterfront, there is practically none which is not suitable for either industrial or commercial purposes. The importance of the port of Vancouver should not be underestimated. I have briefly outlined its natural advantages, and will now hurriedly review the field which it serves and the possibilities which lie before it.

From the standpoint of world trade the port of Vancouver is located in a strategical position. It is today practically the only Pacific gateway for the entire Do-



grain in bulk from the Canadian northwest to the old country.

Other illustrations as to the possible development of Vancouver as a port because of the Panama Canal short-cut are afforded when it is stated that water borne shipments of shingles may be made by this route from Vancouver to Boston, at 40c per thousand, and that a 40 lb. box of British Columbia apples may be shipped in cold storage by the route for 25c—less in each case than the delivery cost of the single unit within the Boston city limits.

**Tonnage Statistics.**—As showing the present standing of Vancouver as a port, I present the following figures as to tonnage for the fiscal years ended Mar. 31:—

1917.		
	Vessels.	Tonnage (gross)
Foreign, inwards .....	1,520	2,041,859
Foreign, outwards .....	1,392	1,734,629
Coastwise, inwards .....	9,493	3,356,050
Coastwise, outwards .....	9,793	3,629,551
Total .....		10,735,089
1918.		
	Vessels.	Tonnage (gross)
Foreign, inwards .....	1,449	1,890,873
Foreign, outwards .....	1,369	1,392,141
Coastwise, inwards .....	9,993	3,549,997
Coastwise, outwards .....	10,206	3,906,496
Total .....		10,639,507

In May, 1913, the Dominion Parliament placed Vancouver harbor under the control of a harbor commission, consisting of a president and two commissioners. Authority was given this commission to establish regulations for the government of shipping in the harbor and to exercise control on the foreshore, as well as appoint a staff to carry out these rules. This work has been done in conformity with the practice observed in the best regulated harbors of the world.

**Reinforced Concrete Wharf.**—In addition to the regulation and control exercised by the harbor commission, it also directly operates one of the finest public wharves on the Pacific Coast. This wharf is located on Burrard Inlet, in the heart of the central harbor. The wharf is of the reinforced concrete type of construction, a new method on the Pacific Coast being employed in the work, involving the use of cribs reinforced with concrete and a heavy mass wall of concrete. The wharf is 800 ft. long and 300 ft. wide, and so located as to give a depth of 35 ft. at low tide. On the wharf are 2 sheds, with trackage on each side, the easterly being 676 ft. 10 in. long and 78 ft. 8 in. wide, and the westerly 843 ft. long and 97 ft. 9 in. wide. This shed is provided with a depressed track. There is a steady demand for accommodation at this wharf, and during the past year the harbor commission has been compelled to turn away business from it, owing to the berths being occupied or storage accommodation being completely taken up.

Adjoining this wharf is a Dominion Government grain elevator which has a capacity of 1,250,000 bush. The receiving capacity is 20,000 bush. an hour and the loading capacity 60,000 bush. an hour, the plans providing for this loading being carried on for 4 vessels at one time. The equipment also includes a sacking plant, capable of handling from 3,000 to 5,000 bush. an hour.

**Fostering Industrial Development.**—The harbor commission judges that the fostering of industrial development comes within its field, and has, to that end, reclaimed 33.13 acres of land in False Creek. This was done in 1917, the reclamation being accomplished by dredging in the waterway; 971,457 cubic yards of material were used, and the reclamation work cost 14c a square foot. The harbor

commission named the tract Industrial Island, and has divided it into 3 zones, offering the sites to industries on 21 years leases, with privilege of renewal for two additional terms. Zone A contains 11.24 acres, and fronts on the main channel, with 20 ft. of water at low tide, the annual rental here charged being \$1,500 an acre. Zone B, 11.35 acres, with 12 ft. of water, rents for \$1,000 an acre per year, and Zone C, 5.60 acres, which has only trackage facilities, rents at an annual payment of \$800 an acre. The harbor commission's plan of granting to industrial plants practically permanent leases on a ground rental basis has been heartily welcomed, and over half of the property has already been leased, with many industries now in operation.

I have previously mentioned the numerous industries which have been established on the shores of the port of Vancouver. It is fitting, however, that special mention be made of the shipbuilding industry, which has developed at the point during the last year, inasmuch as it is indirectly a feature of port development, as it provides tonnage at a time when there is a crying demand for carriers for water borne shipments on the Pacific. On the shores of the port, 4 shipyards are now operating. From these were launched during the past year vessels aggregating 98,200 tons, with operations still under way on other vessels. J. Coughlan & Sons shipyard has launched 4 steel vessels, each of 8,800 tons, these being the largest vessels ever launched from a Canadian shipyard. The Wallace Shipyards has launched 3 steel ships, each of 4,800 tons, and 6 wooden vessels of 2,500 tons each. At the Wm. Lyall Ship-Building Co.'s plant 6 wooden vessels of 2,800 tons each have been launched, while the Western Canada Shipyards has made a similar contribution to the tonnage of the Empire.

**Future Needs.**—While the harbor commission has already done valuable work in developing the port business of Vancouver along many lines and putting port affairs on a sound working basis, it is admitted that there is much which still remains to be done in the line of provision of equipment, etc., to adequately prepare the port for its future needs. The harbor commission recently took up with the Hon. C. C. Ballantyne, Minister of Marine, many questions of this character. The minister showed a hearty interest in the development of the port, as to the future of which he has no doubt, and promised hearty co-operation in the plans outlined. The first step of the programme agreed upon is now under way in the sending of an expert harbor engineer to the coast to look over the situation and recommend to the Ottawa authorities a systematic policy of extension as to improvements and equipment designed to cover the demands of the port for the next 15 years. It is with genuine pleasure that I record this progressive policy of the minister, as all connected with port development know that in this field it is necessary to plan several years ahead in order to properly meet demands as they arise.

**Prince Rupert Harbor,** the northern port on the mainland of British Columbia, is located in latitude 54° 20' N. and longitude 130° 20' W. The place came into prominence as a city and a port when the Grand Trunk Pacific Ry. made it the Pacific terminus of its transcontinental. The name was given in 1906 as a result of a suggestion contest, arranged by the G.T.P.R., in which 12,000 names were suggested, the winner of the prize being

Miss Eleanor M. MacDonald, of Winnipeg. The name is suitable, as it places on the map of the Pacific Coast the name of the dashing cousin of King Charles II. and the first Governor of the Hudson's Bay Company. After the accession of King Charles II., Prince Rupert (an illustrious soldier and explorer) joined the Duke of Albermarle and others on the discovery of a supposed passage through Canada to the South Seas, and in June, 1668, dispatched two vessels to Hudson Bay for the purpose. The outcome of this expedition was the granting in May, 1670, of a Royal Charter to Prince Rupert and others under the title, "The Honorable Company of Gentlemen and Adventurers Trading to Hudson's Bay," the concern being known throughout the world as the Hudson's Bay Co. This charter gave the sole right to trade and proprietorship in an enormous area of what is now Canada, termed Rupert's Land.

Prince Rupert harbor is large and commodious, and affords a perfect shelter for large vessels. It is entered from the north by Chatham Sound, from the south by several channels, and from the Pacific by Dixon Entrance and Brown's Passage. The harbor proper is about 10 miles long, and varies from half a mile to 2 miles in width. A survey shows a depth of 20 fathoms north and east of the town site, from 17 to 23 fathoms opposite the point and about 6 fathoms at the wharves. Tidal conditions in the harbor are favorable for port purposes. The tide rises from 17 to 24 ft. at alternate spring tides and 16 ft. at neap tides, making an average rise and fall of tide of 15 ft.

Up to the present the business of this port has been chiefly coastwise, the Grand Trunk Pacific operating a fleet, with regular sailings, to the Queen Charlotte Islands, Alaska, Vancouver and other southern ports. The port is the center of a large business in fish and lumber, having played an important part in the win-the-war programme through its handling of enormous quantities of fresh fish, as well as spruce for aeroplane construction.

The port is provided with a floating drydock with a lifting capacity of 20,000 tons, particulars of which may be outlined as follows:—

	Length, feet.	Lifting capacity, tons.
Dock, over all .....	600	20,000
Middle section .....	270	10,000
Each end section .....	165	5,000
Middle and end section .....	435	15,000
Two ends .....	330	10,090

With this drydock is connected a thoroughly modern machine shop and equipment, including a 15-ton travelling crane. The entire plant, covering 17 acres, was constructed by the Grand Trunk Pacific Ry. at a cost of approximately \$2,500,000.

Prince Rupert harbor is not yet directly controlled by a harbor commission, its development being under the direction of the Marine Department. A large number of private wharves have been constructed, and the Dominion Government maintains a lighthouse depot, with wharves and full equipment. The British Columbia Government has provided a wharf, 600 ft. long, accommodating vessels of 25 ft. draft, which is equipped with sheds, etc. The Grand Trunk Pacific is about to start work on the construction of an ocean wharf, 1,000 ft. long, and equipped with storage sheds and modern equipment, for the handling of cargoes.

The total tonnage entered and cleared at this port during the fiscal years for 1911 to 1912 was 1,656,489 tons.

The foregoing paper was read before the American Association of Port Authorities in Boston recently.



## Air Syphon Blowers for Rivet Furnaces in Shipyards.

The use of high pressure air for rivet furnaces in a great majority of shipyards is not only overtaxing the capacity of the air compressor plants in many cases, but is resulting in a waste of power that does

multiple nozzle arrangements, in which a very small high pressure air jet (less than  $\frac{1}{8}$  in. in diameter for an ordinary rivet heater syphon) discharges through an injector tube drawing in a small quantity of free air. The first injector tube discharges into a second one, forming a second syphonic action, etc., which is carried on through successive stages where high pressures are to be reduced to relatively low ones.

The accompanying cross sectional sketch, fig. 1, shows a simplified design of a two-stage rivet furnace blower which

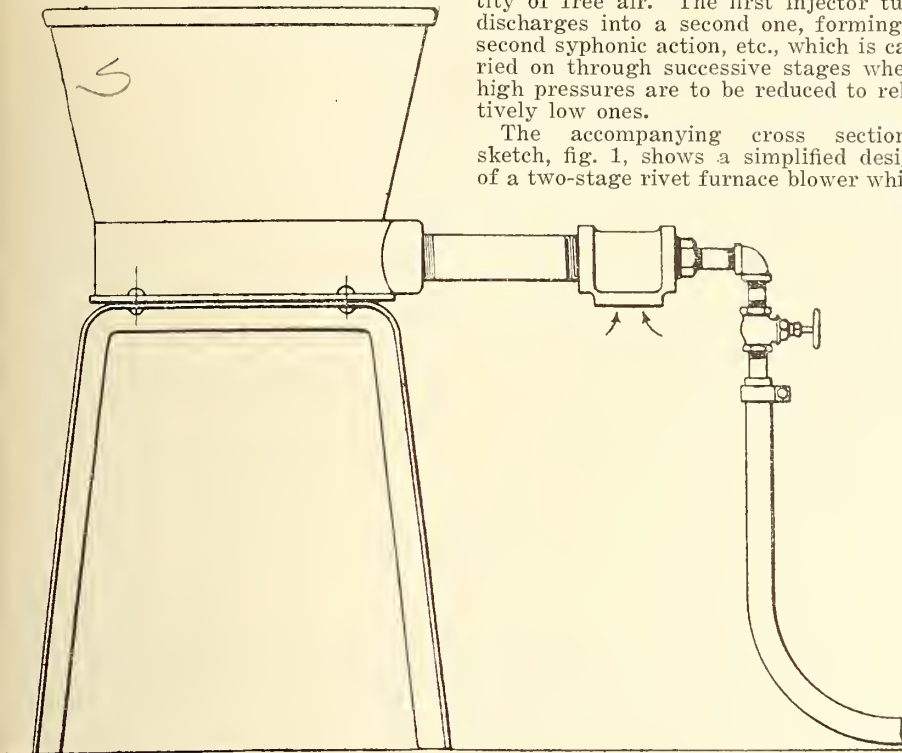


Figure 1.

not seem to have been generally appreciated. In a yard where 25% or 30% of the total air supply, compressed to 100 lb., is used to support combustion in rivet heaters at a pressure of less than  $\frac{1}{2}$  oz., the loss of power is readily apparent.

A large percentage of the high pressure air now used for this purpose can be saved by the application of a jet syphon to the air connection near the rivet furnace. The high pressure air, passing through the nozzle of the syphon, draws in a liberal quantity of free air, which is mixed with the initial air, and delivered to the furnace with it. The percentage of induced free air taken in under fixed conditions, depends entirely on the more or less correct design of the syphon blower, and runs from 30% in some of the crude arrangements which have been

is suggested in the interest of economy in construction, and fig. 2 shows its ap-

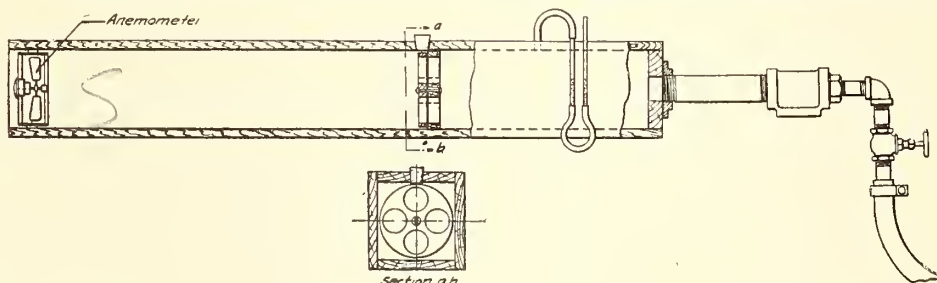


Figure 3.

plication to a rivet furnace. In this design a standard  $1\frac{1}{4}$  in. screwed pattern,

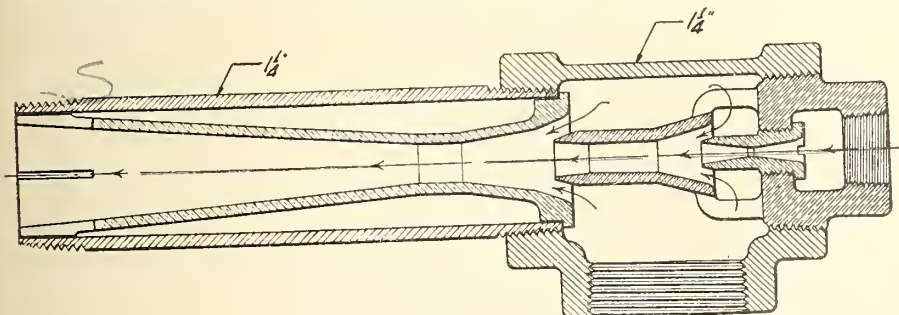


Figure 2.

improved by some of the shipyards, to 75% or 80% for the best standard makes of syphons, which have been carefully tested by the Emergency Fleet Corporation's Standard Practice Branch.

The higher efficiencies are obtained by

cast iron T is used for the body of the instrument. The self-contained cast brass nozzle arrangement is screwed into one end of the T and provided with threaded connection for high pressure pipe, while the delivery tube, connecting the body

to the furnace, is screwed into the other end. In order to give rugged construction and further economize in production, a short piece of standard pipe is used for the delivery tube, and the correct syphonic proportions are obtained by the insertion of a non-corrosive lining. If the nozzles are properly proportioned, blowers of this design will give thoroughly good results.

Syphon blowers of the very highest efficiency can be obtained from regular manufacturers. It is quite likely that patterns and tools will be developed by some of these manufacturers for the production of the simplified instrument illustrated herein, provided there should be sufficient demand for them, and in this case the tubes would no doubt be carefully developed for highest efficiency.

The average air used by a rivet furnace runs from 20 to 40 cu. ft. a minute. A properly designed syphon blower will easily reduce the high pressure supply to 25% of the total, utilizing 75% of free air in the furnace. Figuring the average furnace air supply at 20 cu. ft. a minute, the saving effected would be 1500 cu. ft. of high pressure air a minute, or approximately 250 h.p. for each 100 rivet furnaces in operation.

A few ship yards have made some progress in the application of the syphon blower principle to rivet heaters, and some manufacturers are furnishing heaters with syphon attachments, but so far as these have been observed and tested, they have not been designed for high efficiency, and as the matter stands it seems that even the few yards that have taken steps in this direction have not taken full advantage of the opportunity. The cost of these blowers in any case is so insignificant, in comparison with the

saving effected, that it is a great waste to use anything short of a thoroughly efficient instrument. It is suggested therefore that blowers be tested and that nothing be accepted or used which will not utilize 75% of induced air.

A very simple testing method is illustrated by the accompanying sketch, fig. 3. In this arrangement the blower is attached to an opening in the end of a rectangular wood box approximately 3 ft. long by  $4\frac{1}{2}$  x  $4\frac{1}{2}$  in. inside cross sectional measurements. A partition is located near the inlet and is fitted with a wooden disc loosely attached with wood screw at center. Four  $1\frac{1}{2}$  in. equidistant holes are bored through disc and partition, as shown in the sketch, for the diffusion and passage of the air, and a hole with stopper is provided through the top of the box, immediately over the disc, so that it can be rotated to gauge the size of the openings through the partition, for the purpose of imposing a resistance or back pressure on the blower, equivalent to the



resistance of the fuel bed in a rivet heater. A bent glass tube partially filled with water is attached to the side of the box, and connected with the first compartment to show the extent of this resistance, which should be adjusted to a  $\frac{1}{2}$  in. water head.

An anemometer is placed in the outer end of the box, to register the flow of air which will be calculated in cubic feet by dividing the anemometer reading by 8. In testing, open the air valve on the blower until the anemometer reading reaches 280, with the resistance adjusted at  $\frac{1}{2}$  in. of water. This would represent 35 cu. ft. of air a minute. Next, close the free or induced air inlet of the blower, without changing the adjustment of the air supply valve, and this will give the net direct or high pressure air reading, which, compared with the previous total, will give the efficiency of the device.—From Standard Machine Bulletin, issued by Division of Steel Ship Construction, United States Shipping Board, Emergency Fleet Corporation.

### Transportation of Returned Soldiers to Canada.

Several steamships have arrived at a Canadian Atlantic port recently, conveying between 4,000 and 5,000 returned soldiers. Nearly 1,000 were "hospital walking cases," for whom berths had been specially erected in the ships under the supervision of the medical authorities; about 3,300 were "ordinary discharge cases." There were 300 or 400 soldiers' wives and children and 150 officers also returning.

The sending of so large a number at one time is due to a combination of circumstances. One is that, under the conditions caused by the pooling of shipping, increased use of late has been made of United States ports as against Canadian. Another is that difficulty has been experienced in getting sufficiently good steamships; vessels of inferior type could have been procured earlier, but the Canadian authorities in England rejected these and preferred to wait until they could obtain more commodious ships. As a result of this policy, the 3,300 "ordinary discharge cases" had an amount of space which ordinarily would be used to accommodate 4,400 troops on the eastbound voyage.

The difficulties experienced in getting ships has caused this to be the first considerable evacuation from England for a number of weeks. The effect was congestion at Buxton, the depot in England.

Another difficulty was caused by the cancellation of hospital ships, which was rendered necessary by the recent murderous attacks on such vessels by German submarines. This had two effects; it made it necessary to send "hospital walking cases" in ordinary steamships instead of in the specially equipped hospital vessels, special berths being erected so as to improve the accommodation as far as possible. It also increased the congestion in the hospitals in England, and this crowding has been further aggravated by the heavy casualties caused by the recent severe fighting.

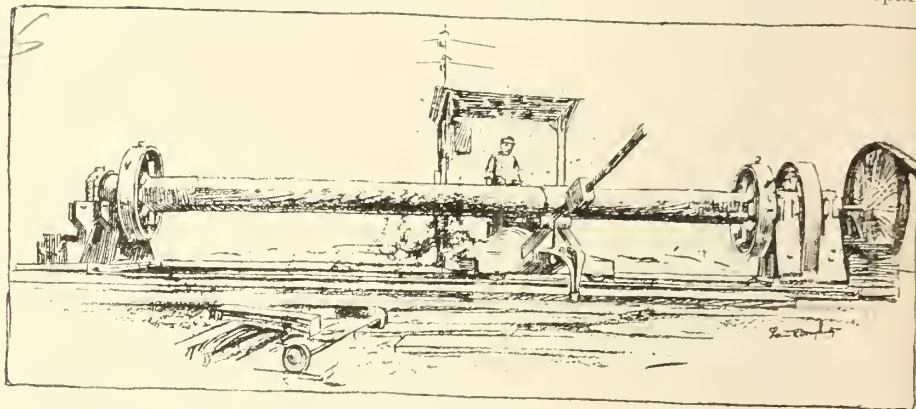
The Consolidated Whaling Corporation's combined fleets in Pacific waters are reported to have taken 978 whales from the commencement of this year's whaling season. It is stated that the catch this year is the best since 1911, which was a record year.

### Ship Mast Turning Lathe.

The Traylor Shipbuilding Corporation, Cornwells Heights, Pa., has in operation in its yard a mast turning lathe that is one of the new developments in shipbuilding. Formerly the making of masts was a long and laborious operation fit for the best work of especially skilled men. The machine will handle timbers for a mast up to 100 ft. long and 3 ft. in diameter. The timber, after being centered and set up in the machine, which usually requires about half a day, is revolved at a speed of 50 revolutions a minute, by an electric motor, thus coming in contact with the cutter head, which is mounted on a carriage attached to the motor, and set at right angles to the mast. The cutter head revolves at a speed of 700 revolutions a minute. In this head are three hooked knives, which cut the material from the mast.

The carriage is propelled by a wire rope on a gypsy head, which also is run by a motor, the feed of the carriage being practically the same as on an old fashioned saw mill.

When a mast is extra long and sags in



Ship Mast Turning Lathe.

the middle, it is necessary to put a steady rest at the point where the sag is greatest, thereby making the timber run true. To get the shape of the mast; that is, the taper at the top, it is necessary to set a rail, which is bolted down to the bed of the machine and bent in exact position as the profile of the mast which is to be cut. On this rail runs a shoe, controlling the cross movement of the carriage. If the rail is set away from the machine, it pulls the carriage closer to the center of the mast. If it is set nearer it moves the carriage farther away.

The accompanying sketch of the lathe in operation was made at the plant recently by L. R. Dougherty, Staff Artist, Publications Section, U.S. Shipping Board, Emergency Fleet Corporation. The timber being turned was placed in the machine about 10 a.m., and was practically completed by the evening. The machine is very simple in operation, requiring the attention of only one man at the cutter head and another as a helper to assist in making adjustments.—Emergency Fleet News.

**Wages in Vancouver Shipyards.**—In accordance with the agreement dated June 1, respecting wages to be paid to workers in shipyards in British Columbia shipyards, an increase of 2c an hour, effective from Sept. 1, is reported to have been granted to all labor classifications. The agreement provides for such increases as are justified by the increased cost of living, during the war.

### Observance of Canal Navigation Rules.

The Canadian Lake Protective Association has issued the following bulletin:—"The particular attention of masters is again called to the rules governing the navigation of the Dominion canals, a copy of which should be in the hands of every canal navigator. The rules relating to bridges may throw an unfair burden upon the ship, particularly in view of the difficult conditions often encountered, due to current, wind or dangerous banks, all requiring the maintenance of steerage way. Nevertheless every effort must be made to observe the rules, and no master is entitled to assume that a bridge is going to be opened, merely because he has signalled to it. The courts have taken the same view in Ontario in cases relating to bridges, and until some change is made in the rules, too much reliance upon the promptness or efficiency of bridge tenders will simply result in damage claims to be met by the ship and her owners. The Canadian Lake Protective Association's committee will make further representations to the Railways and Canals Depart-

ment, renewing the request for the operation of an effective signal from each bridge in answer to signals from vessels, but until the situation is improved in this way the existing rules must be strictly observed in every way possible.

"A casualty reported with reference to the Morrisburg canal upper entrance calls attention to pending proposals for improvement of conditions there. The committee is aware of the special difficulties at this point and has sought to hasten the work of improvement which has been under consideration by the Railways and Canals Department. The application of the New York & Ontario Power Co. to the International Joint Commission for approval of their plans for power at Waddington brings this question prominently forward, and the difficulties at this point are again called prominently to the department's attention."

**The "Unsinkable" Ship.**—The s.s. Lucia, which was remodelled some time ago, in the U.S., with a view to experimenting with devices, which it was claimed would make her unsinkable, in case she was struck with a torpedo, or which, at least, would enable her to remain afloat long enough to allow of passengers and crew being removed safely, was reported to have been torpedoed and sunk, between Oct. 13 and 20, while crossing the Atlantic. She was an Austrian vessel, and was among the vessels interned in U.S. ports on the outbreak of war, and taken over subsequently by the U.S.



## British Ministry of Shipping (Canada).

The following order in council was passed at Ottawa, Sept. 5:—"The committee of the Privy Council have had before them a report, dated Sept. 4, from the Minister of the Naval Service, submitting with reference to the order in council 34, dated Jan. 12, 1916, relative to the appointment of A. H. Harris (now Sir Arthur Harris, K.B.E.) as Director of Overseas Transport, that circumstances have necessitated a change in the organization under which transport of stores from Canada to European ports is carried out. The minister states that the matter has recently been the subject of discussion between the Minister of the Naval Service, chairman of the sub-committee of council authorized by the above order in council to deal with these matters, and the British Ministry of Shipping, and that new regulations governing this matter have been agreed on, which will necessitate the cancellation of Sir Arthur Harris' appointment as Director of Overseas Transport under the Canadian Government. The minister, therefore, recommends that the appointment of Sir Arthur Harris under the above mentioned order in council, be cancelled from Sept. 5. The committee concur in the foregoing recommendation, and submit the same for approval."

The department carried on up to Sept. 5 by the Director of Overseas Transport was then transferred to the Imperial Government, the organization being now known as the British Ministry of Shipping (Canada), the personnel and office locations in Montreal being as follows:

Director General, Sir Arthur Harris, K.B.E., 319 Windsor St. Station.

Deputy Director General, W. T. Marlow, 21 Board of Trade Building.

Accountant, Geo. Wood, 21 Board of Trade Building.

Ships Movements and Bunkers, Capt. Douglas Greenshields, 21 Board of Trade Building.

Technical Department, F. Sidgwick, 21 Board of Trade Building.

Ocean Transports and Timber, W. A.

Wainwright, 21 Board of Trade Building. Ocean Liner Department, G. D. Robinson, 2 St. Peter St.

Superintendent Inland Transportation, D. O. Wood, 319 Windsor St. Station, Montreal.

Assistant Superintendent Inland Transportation, J. A. Glassford, 319 Windsor St. Station.

Shipments authorized for export, account of the British Government, are consigned on straight bill of lading to British Ministry of Shipping (Canada), at the seaboard, Montreal, Quebec, St. John, N.B.; Halifax, N.S., or Portland, Me., as the case may be.

## Hydrographic Survey Work.

During the past summer the activities of the Naval Service Department's Hydrographic Survey Branch have been much curtailed owing to war conditions. Two of the survey vessels are being utilized for naval purposes and two other survey vessels were not put into commission last summer, owing to the difficulty of obtaining crews and the desire to release seamen for work in the naval service and in the mercantile marine. During the summer only three parties were placed in the field; one, under Capt. Anderson, assisted by Messrs. Bachand and Beauchemin, has completed a resurvey of Sydney harbor, N.S., and is now engaged in similar work on the northwest arm, Halifax harbor, N.S. The second party, under Lieutenant-Commander P. C. Musgrave, R.N., assisted by Messrs. Davis and Willis, is engaged in a resurvey of Victoria and Esquimalt harbors, B.C. The third party, under H. D. Parizeau, is in camp on the southwest shore of Black Bay making a resurvey of that water.

In April the Hydrographer to the Admiralty offered four commissions in the R.N.V.R. to Canadian Hydrographic Survey officers, and these were taken up by R. J. Fraser, J. L. Foreman, L. G. Prittie, and H. E. Morrissey. So far as is known, all these men are engaged in making detailed surveys of various harbors used by the British and allied fleets in European waters. The British Admiralty has availed itself of the services of seven members

of the Hydrographic Survey staff to assist the British Hydrographic Office and all are actively employed in field work.

Owing to the rapid expansion of the Naval Service Department and the necessity for giving more space for the naval work, the offices of the Hydrographic Survey in Ottawa have been moved from the H. J. Daly building to the Waller St. school. The space thus vacated has been utilized for the accommodation of other offices of the Naval Service Department and is providing much needed accommodation for the overcrowded branches of the service.

## Welding Process for Shipbuilding.

Building of a steel ship without rivets has been effected in a shipyard on the south coast of England, and its construction may mark a new era in the shipbuilding industry. A process of electrical welding was used for joining the plates, in place of the usual riveting and caulking. By means of an electric arc, the joints were submitted to intense heat, and the plates were fused together. The process is not entirely new, as auxiliary work has been done in the past by electric welding. During the last year, developments have been made which have permitted of the extension of this method in ship construction. A saving of between 20 and 25% is claimed in both time and material, judging from experimental work done on the vessel launched recently.

The general adoption of electrical welding in shipbuilding would permit a material speeding-up of production. The electric process is particularly economical in the assembling of bulkheads, deck structures and other interior work. The United States is keeping in touch with the developments in this work in Great Britain, and arrangements are under way for the construction of several 10,000-ton standard ships by the same process. These large vessels will contain about 2½% of the number of rivets originally intended, while the British boat was absolutely rivetless.

## Among the Express Companies.

A. G. Taylor has been appointed agent, Canadian Ex. Co., Napanee, Ont., vice J. A. Day, resigned.

P. A. Dunne has been appointed agent, Dominion Ex. Co., Edmonton, Alta., vice O. E. Ford, transferred.

C. E. Theriault has been appointed agent, Canadian Ex. Co., Granby, Que., vice J. L. Davian, transferred.

W. E. Norton has been appointed agent, Dominion Ex. Co., Sydney, N.S., vice C. S. Coleman, resigned.

E. O. Shannon has been appointed agent, Canadian Ex. Co., Belleville, Ont., vice G. Jacobs, enlisted for active military service.

J. H. Chadwick has been appointed agent, Canadian Northern Ex. Co., Edmonton, Alta., vice W. E. Poole, transferred.

O. E. Ford, heretofore agent, Dominion Ex. Co., Edmonton, Alta., has been appointed agent at Calgary, Alta., vice F. R. Jelfs, transferred.

R. H. Jones, route agent, Canadian Ex. Co., Toronto, is acting as route agent at Hamilton, Ont., during the absence through illness of G. W. Hickey.

W. F. Oblender has been appointed station agent, Canadian Ex. Co., Hamilton, Ont., vice D. McKenzie, who has been transferred to a messenger run.

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie canals during September, 1918.

		Eastbound.		
ARTICLES.		Can. Canal.	U. S. Canal.	Total.
Lumber . . . . .	m. ft. b. m.	984	39,723	40,707
Flour . . . . .	Barrels	433,110	704,000	1,137,110
Wheat . . . . .	Bushels	2,830,365	3,125,228	5,955,593
Grain, other than wheat . . . . .	Bushels	21,785	795,466	817,251
Copper . . . . .	Short tons	3,888	7,574	11,462
Iron Ore . . . . .	Short tons	1,498,782	7,252,059	8,750,841
Pig Iron . . . . .	Short tons	.....	.....	.....
Stone . . . . .	Short tons	.....	400	400
General Merchandise . . . . .	Short tons	6,033	6,668	12,701
Passengers . . . . .	Number	2,470	726	3,196
		Westbound.		
Coal, soft . . . . .	Short tons	122,090	2,674,487	2,796,577
Coal, hard . . . . .	Short tons	20,100	273,700	293,800
Iron Ore . . . . .	Short tons	.....	30,210	30,210
Mfgd. Iron and Steel . . . . .	Short tons	888	7,126	9,014
Salt . . . . .	Short tons	2,800	10,330	13,130
Oil . . . . .	Short tons	.....	30,051	30,051
Stone . . . . .	Short tons	.....	22,553	22,553
General Merchandise . . . . .	Short tons	26,359	23,719	50,078
Passengers . . . . .	Number	2,413	832	3,245
		Summary.		
Vessel passages . . . . .	Number	608'254'8	220'260'2	91'244'6
Registered tonnage . . . . .	Net	688'2	215'2	989
Freight—				
Eastbound . . . . .	Short tons	1,638,325	7,516,335	9,154,660
Westbound . . . . .	Short tons	172,237	3,073,176	3,245,413
Total Freight . . . . .	Short tons	1,810,562	10,589,511	12,400,073



W. D. Thomson, who was mentioned in our last issue as having been appointed acting agent, Dominion Ex. Co., Calgary, Alta., was appointed acting route agent there.

C. E. Potts has been appointed travelling agent, Canadian Northern Ex. Co., with jurisdiction over lines in Ontario and Port Arthur, Ont., with headquarters at Toronto.

J. Bolduc has been appointed travelling agent, Canadian Northern Ex. Co., with jurisdiction over lines in Ontario and Quebec, east of Ottawa, with headquarters at Quebec, Que.

F. H. Smith has been appointed acting Assistant Superintendent, Pacific Division, Dominion Ex. Co., Calgary, Alta., during the absence of M. W. Hastie, Assistant Superintendent, on leave.

The Canadian Northern Ex. Co. has placed its service in operation on the Canadian Northern Ry. between Pembroke and North Bay, Ont., and has opened offices at Alderdale and Brent, Ont.

Edward Allen, Superintendent, Canadian Ex. Co., Toronto, died suddenly there, Oct. 23. He was born in Ireland, and came to Toronto in early life. He had been associated with the Canadian Ex. Co. for 50 years. His health had not been good for some time, but he had attended to his duties, and was at his office as usual on the day prior to his death.

### Telegraph, Telephone and Cable Matters.

John Spiers, agent and operator, Great North Western Telegraph Co., Sandwich, Ont., died there Oct. 20, aged 65.

A. Hanley, local manager, Great North Western Telegraph Co., Kingston, Ont., for the past 15 years, died there recently.

The Marconi Wireless Telegraph Co. is reported to have decided to build a wireless telegraph plant at Buckley Bay, B.C.

R. Bodell, Commercial Supervisor, Great North Western Telegraph Co., Toronto, died Oct. 21 from pleuro-pneumonia. He had been in the company's service for 13 years.

The Anglo-American Telegraph Co. has given notice that owing to staff shortages at cable stations, it has been found necessary to suspend until further notice, the trans-Atlantic deferred rate service.

The Great North Western Telegraph Co. has opened offices at Riviere Madeleine, Que., Bolger and Glencoe, Ont., and has closed its offices at Abenakis Springs Hotel, Little Metis Beach, Pointe au Pic, St. Godefroy and Valcartier Camp, Que.; Grand Beach, Man., and Alberta Beach, Alta.

The Great North Western Telegraph Co. and its employees have agreed to refer their differences to the Canadian Railway War Board of Adjustment, No. 1, which meets early in November. Several points of difference have been settled, but others, covering the time schedule, the inclusion of chief operators, branch and smaller offices and line gang foremen, and the adjustment of district linesmen's wages, are being referred to the board.

The President of the United States has brought to the attention of the heads of departments the serious situation confronting telegraph and telephone companies, growing out of the recent heavy depletion of their trained operators due to the government's calls, and has suggested that they should be careful not to

take operators away from these agencies, which are now controlled by the government, without previous consultation with the superintendent of the companies.

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The C. E. A. Carr Co., railway supplies, etc., Toronto, has appointed H. F. Powell, as a member of its selling staff. He is a son of W. B. Powell, General Manager, Montreal & Southern Counties Ry.

Brown Hoisting Machinery Co., Cleveland, Ohio, has issued catalogue D, 1919, describing and illustrating Brownhoist trolleys, rail systems, hand travelling cranes, electric hoists, monorail man-riding trolleys, crabs and winches, and portable floor cranes.

Armstrong, Whitworth of Canada, Ltd., Montreal, has issued a folder, containing a group picture of those present at the opening of its locomotive and car wheel tire and wheel plant at Longueuil, Que., on July 31, a view of its entire plant there and a number of views showing some of the most important operations in the manufacture of locomotive and car wheel tires, including battery of 6-ton Heroult electric furnaces; ladle in position receiving charge of molten steel; teeming tire ignot from ladle into ingot moulds; 2,000-ton steam intensifier forging press; forging ingot into tire bloom; 600-ton steam intensifier hydraulic Becking press; forging bloom into rough outline of tire; tire rolling mill, last operation completing tire.

Independent Pneumatic Tool Co.—John P. Hopkins, chairman board of directors, died at Chicago, Oct. 13, after a few days illness, death being attributed to a weak heart, superinduced by an attack of Spanish influenza. He was born in Buffalo, N.Y., in 1858. He moved to Chicago in 1880 and obtained a position with the Pullman Palace Car Co. as a machinist. Later he went into business for himself as a partner in Secord & Hopkins, general merchandise, at Pullman, Ill. This venture proved successful and was the foundation for the large fortune he built up. In 1905 he was one of the organizers of the Independent Pneumatic Tool Co. and he was its largest stockholder. He served the unexpired term of Carter H. Harrison, Sr., as Mayor of Chicago in 1893-94 and was several times chairman of the Democratic National Committee. Since the beginning of the war he had served as Secretary to the Illinois Council of Defense. His close attention to war work undoubtedly affected his health and hastened the end.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 305 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Railway War Board—W. M. Neal, Montreal.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacramento Street, Montreal.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.

### STEAM ENGINES AND SURFACE CONDENSERS FOR IMMEDIATE SALE

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Suitable for general mill work, power transmission by belt, rope drive or spur gearing, for driving woodwork, grinding, or crushing machinery, or air compressors, in factories, saw mills, pulp and paper mills, ship yards, munition works, mines, grain elevators, etc., or for reconstruction into other uses requiring heavy reciprocating parts.

1—500 h.p. vertical cross compound, 4 valve engine with shaft governors, cylinders, 18 and 24 x 24 in., 150 r.p.m., with 1-325 k.w., 3 phase, 60 cycle, 2,300 volt alternator direct coupled; also belted exciter. For electric power transmission.

1—900 h.p. vertical cross compound, 4 valve engine with shaft governor, cylinders, 20 and 38 x 24 in., 150 r.p.m., with 1-600 k.w., 3 phase, 60 cycle, 2,300 volt alternator direct coupled; also belted exciter. For electric power transmission.

2—600 horizontal cross compound, Corliss engines, 18 and 34 x 42 in., cylinders, 100 r.p.m., crank shaft 18 in.

1—1,200 h.p. cross compound Corliss engine, cylinders, 26 and 52 x 48 in., 85 r.p.m., crank shaft 22 in.

2—1,200 cross compound Wheelock gridiron valve engines, cylinders 27 and 52 x 46 in., 90 r.p.m., crank shafts 24 in.

1—250 h.p. Wheelock type, cross compound type engine, cylinders 16 and 27 x 40 in., with belt flywheel, 16½ ft. diam. and 33 in. face.

The 600 and 1,200 h.p. horizontal engines now have electrical generators mounted upon them which the present owner wishes to keep. Generators to be removed from engine shafts and engines sold without them.

These engines could be fitted with new fly wheel rims for belt driving, or with spur gearing, making them available for any kind of factory duty.

All of them have been operated at 135 pounds steam pressure and about 25 in. vacuum. All in good order; some of them have been run recently.

These engines ought to be sold entire, and would be an advantageous purchase for any establishment where reciprocating engine power can be economically employed, especially where EXHAUST STEAM HAS COMMERCIAL VALUE as it frequently has in isolated power plants, for drying or evaporating, or for heating buildings in this Northern climate.

Attention of manufacturers is called to the possibility of using the cylinders, shafts, fly wheels, or even the frames, of any or all of these engines as possible component parts of air and ammonia compressor engines, blowing engines and other heavy machinery requiring reciprocating steam power. Owners will consider reasonable offers for parts of the engines.

There are also for sale—

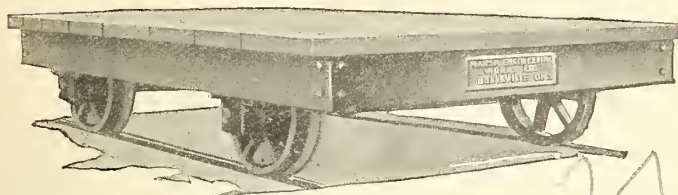
2—Surface Condensers, each of about 14,000 sq. ft. cooling surface. Both suitable for large steamships. Also, 2 combined air and circulating pumps, vertical crank and fly wheel type, and one horizontal tandem, 3-cylinder air and circulating pump.

Correspondence is desired with parties who may have immediate use for any or all of these engines, condensers, or parts thereof. Prices on application, subject to prior sale.

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The St. John Steamship Co., Ltd., has been incorporated under the New Brunswick Companies Act, with \$49,000 authorized capital and office at St. John, N.B., to own and operate steam and other vessels, and to carry on the general business of steamship owners and merchants. The incorporators are, J. G. Harrison, A. L. Fowler, and T. E. G. Armstrong, all of St. John. The company is reported to have a steamship under construction at Yarmouth, N.S., for Bay of Fundy service. Formation of the company and the order for the new vessel are said to have been determined by the fact that owing to the sale of packet steamboats formerly on the Minas Basin route, and the withdrawal of the vessels from that service, communication between St. John with important Nova Scotia centers by water was interrupted and local merchants put at the disadvantage of competing with Halifax over a long rail route.

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## The Canadian Northern Railway Company

Referring to the Trust Deed securing the 5% Income Charge Convertible Debenture Stock of The Canadian Northern Railway Company, the Directors regret to announce that the earnings of the Company for the half-year ended June 30th, 1918, are insufficient to enable them to declare any interest to be payable on the said stock on November 2nd next.

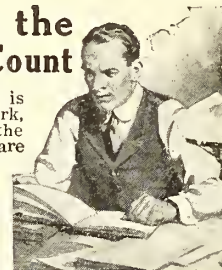
By order of the Board,

R. P. ORMSBY,  
Secretary.

Toronto, October 4th, 1918.

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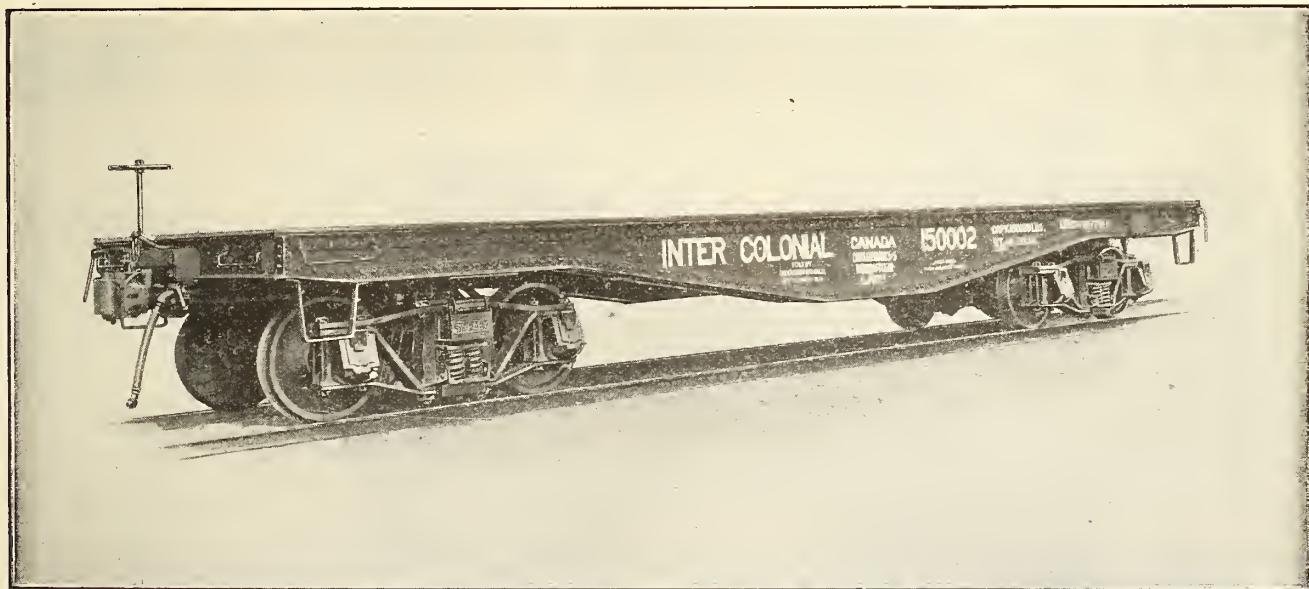
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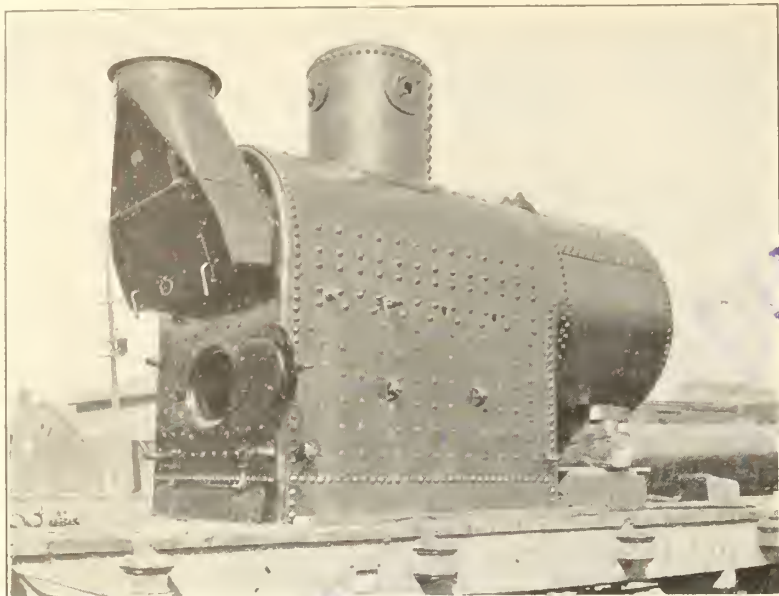
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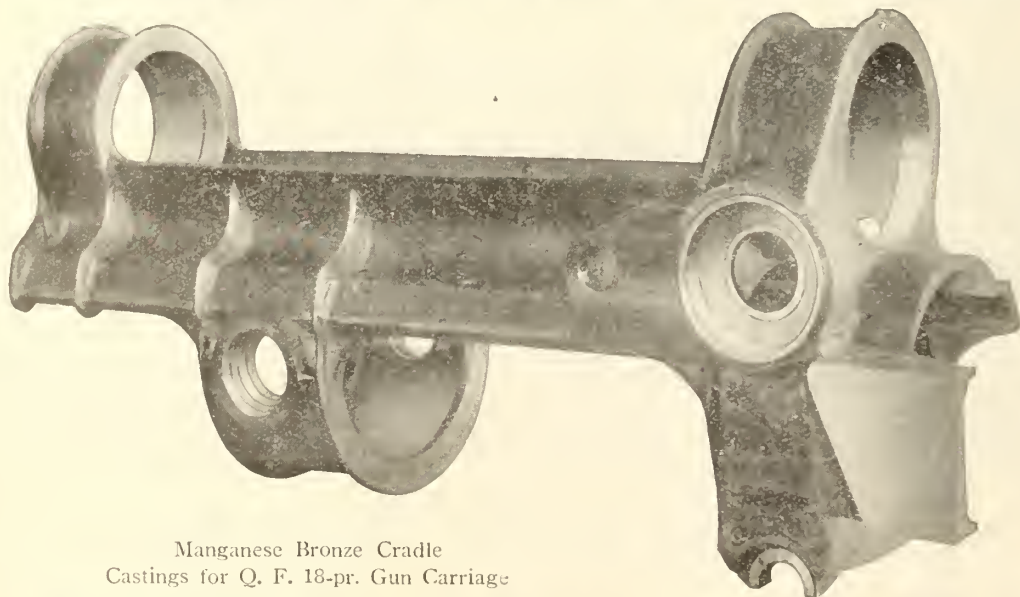
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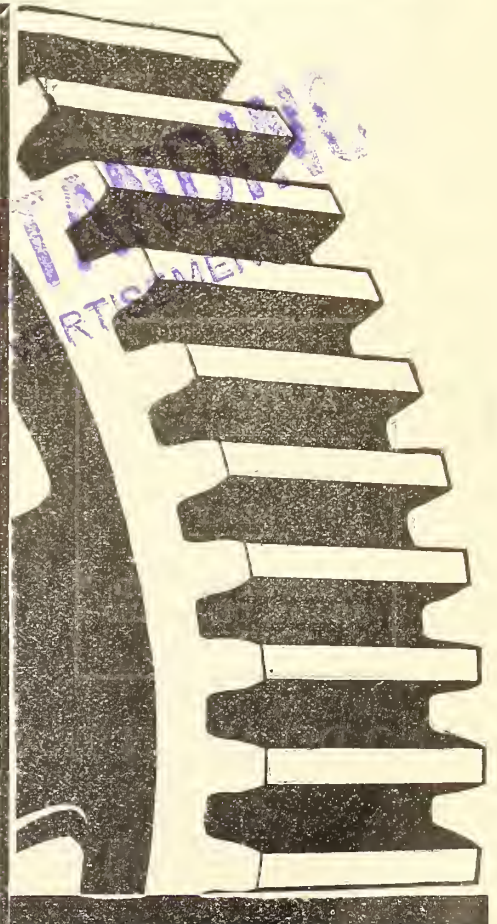
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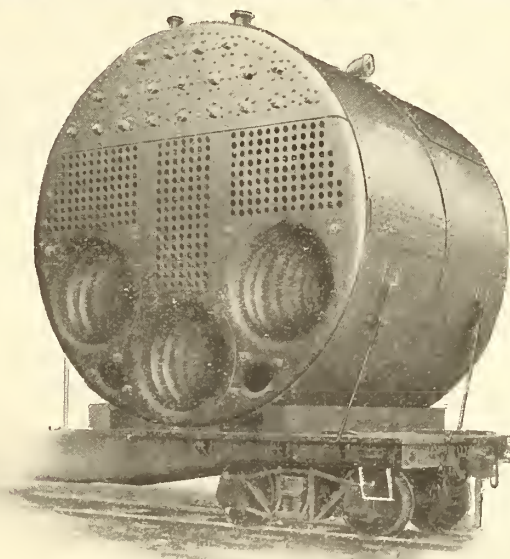
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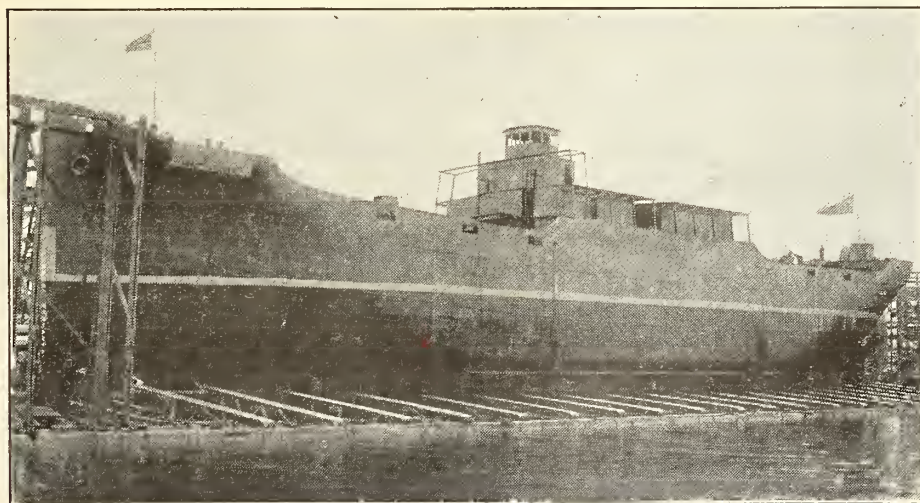
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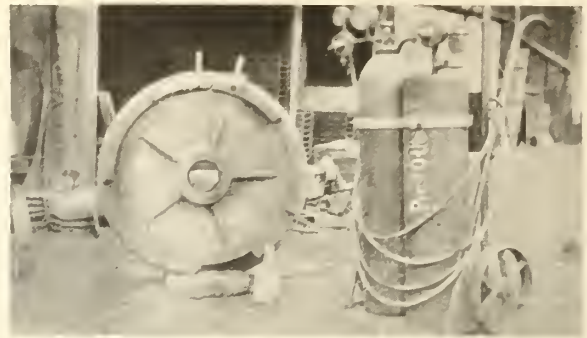
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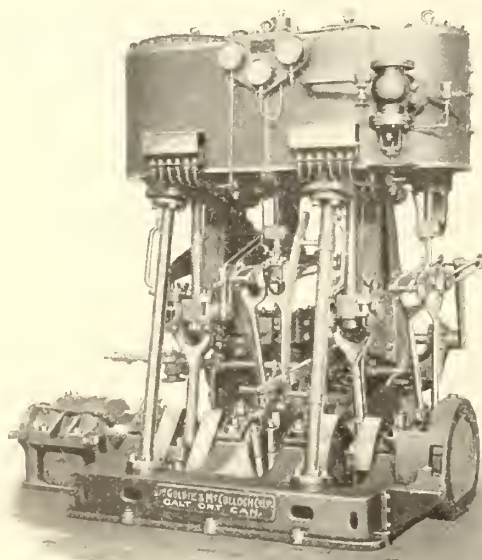
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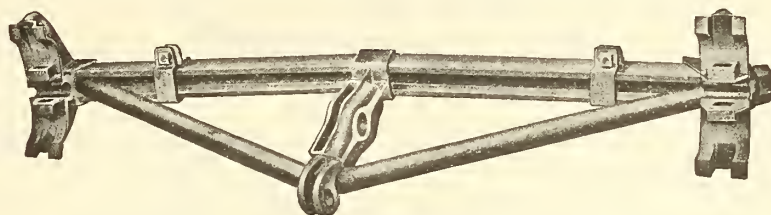
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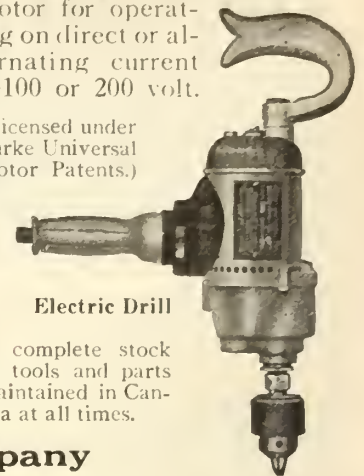
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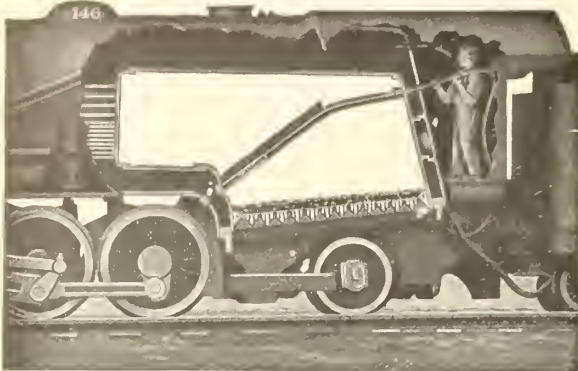
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Lagonda Cleaner Removing Scale from Arch Tubes.

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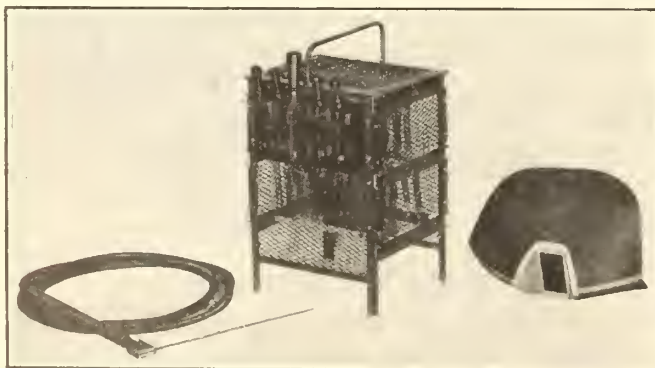


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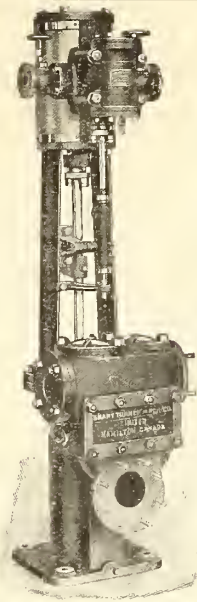
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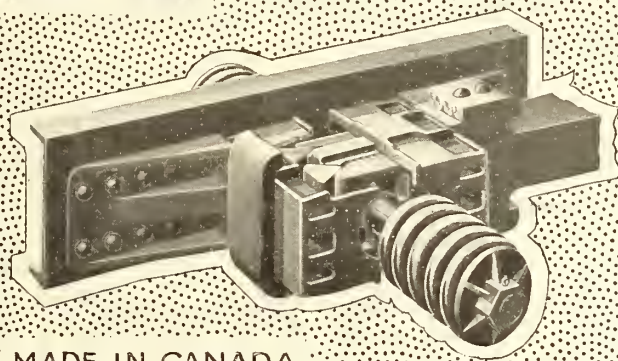
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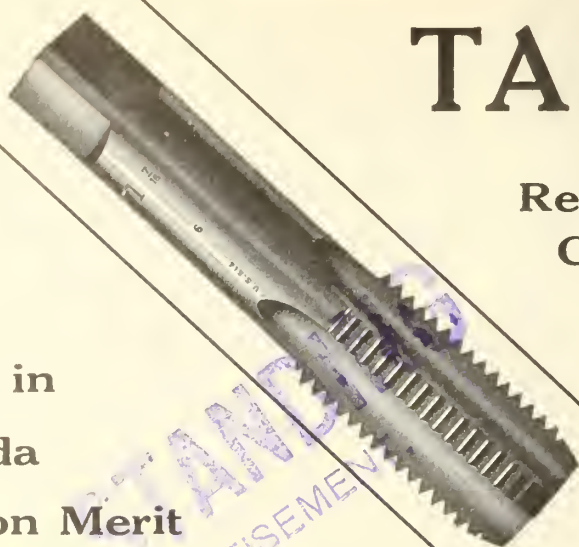
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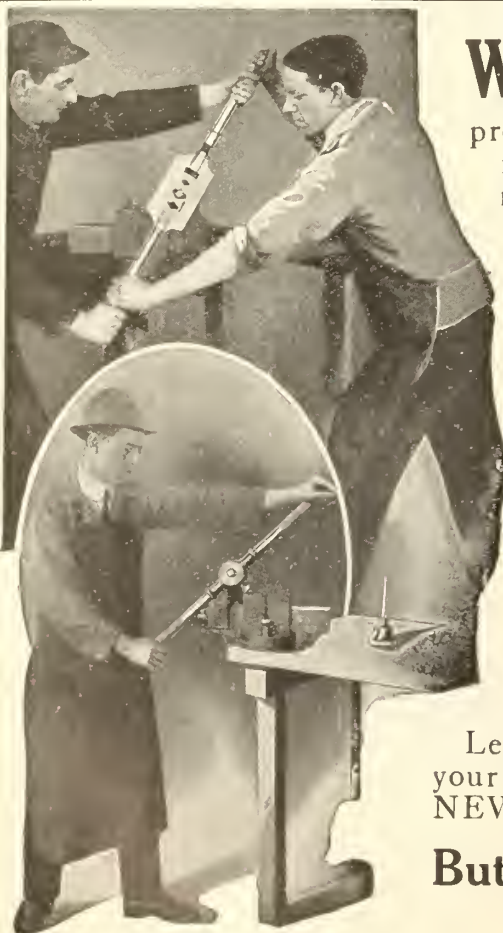
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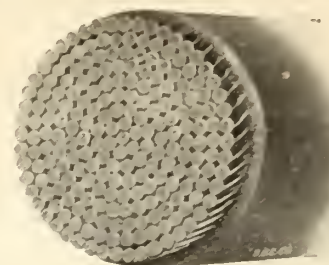
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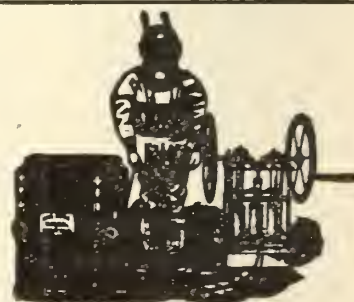
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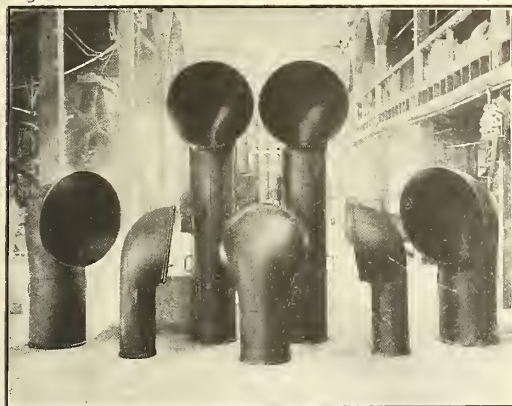
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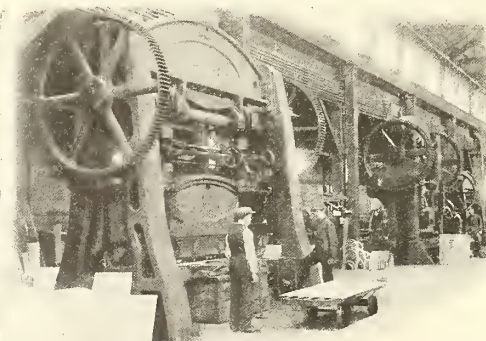
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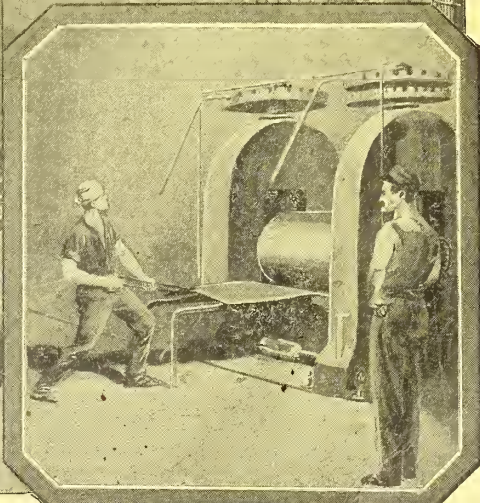
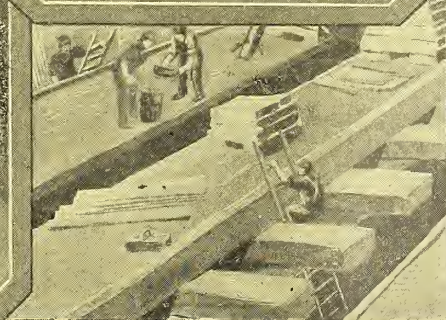
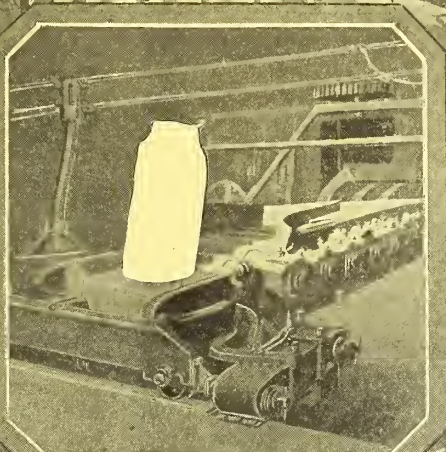
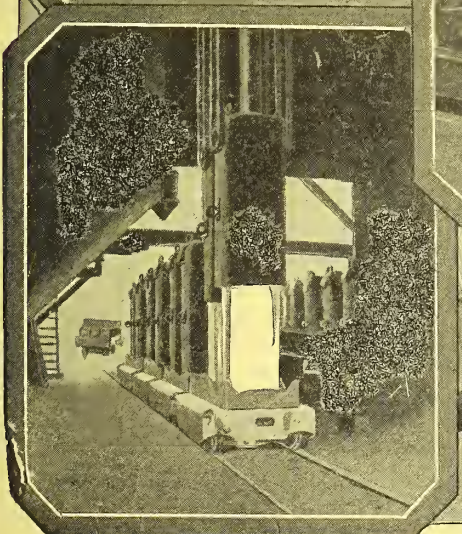
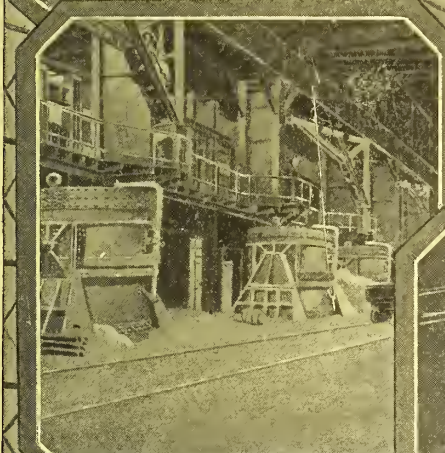
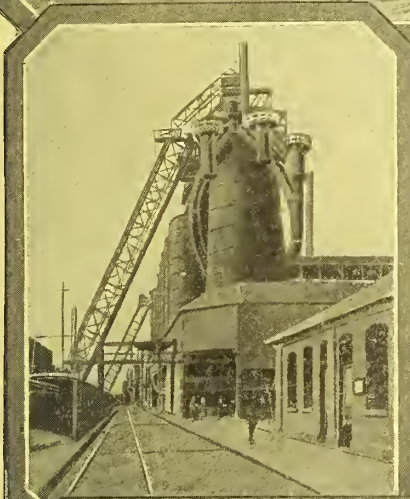
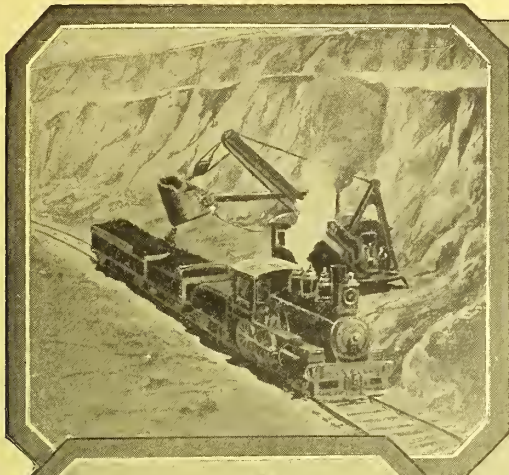
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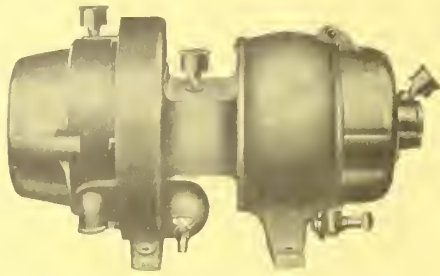
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CASE No. 1414



# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 250

TORONTO, CANADA, DECEMBER, 1918

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Locomotive and Car Shop  
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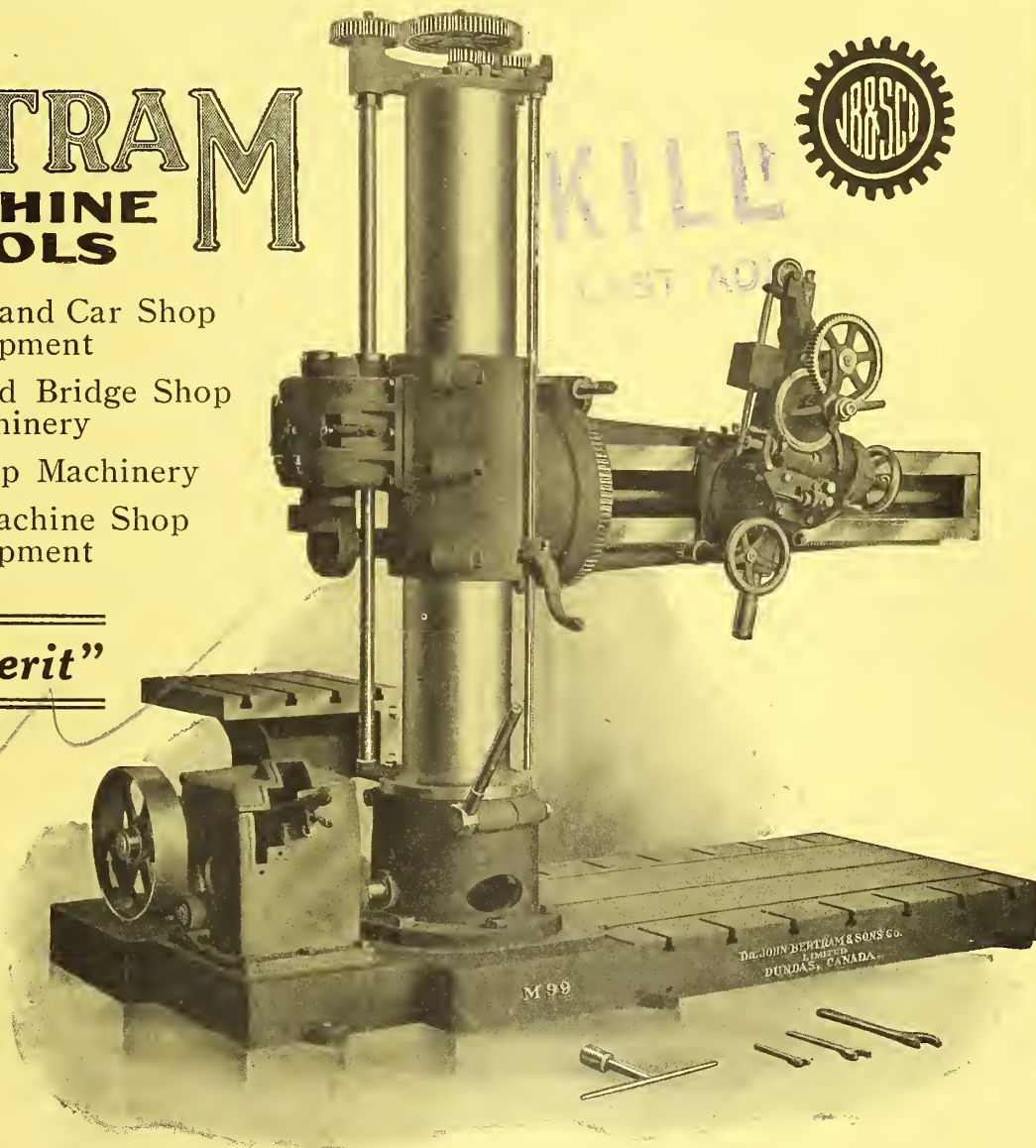
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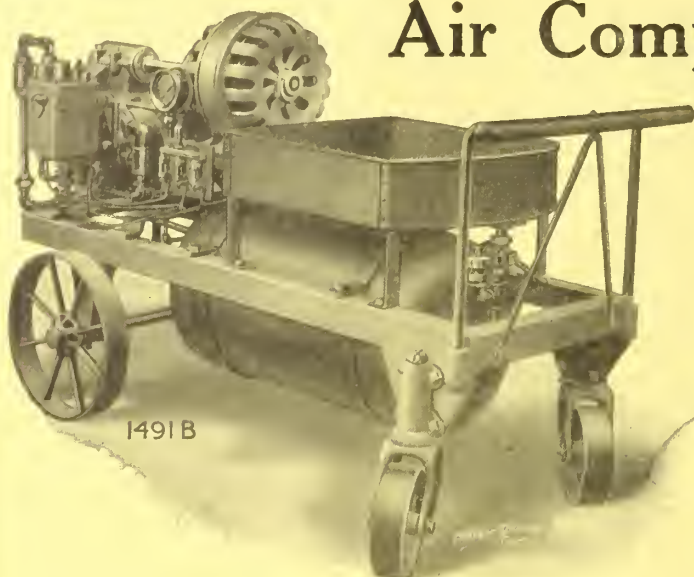
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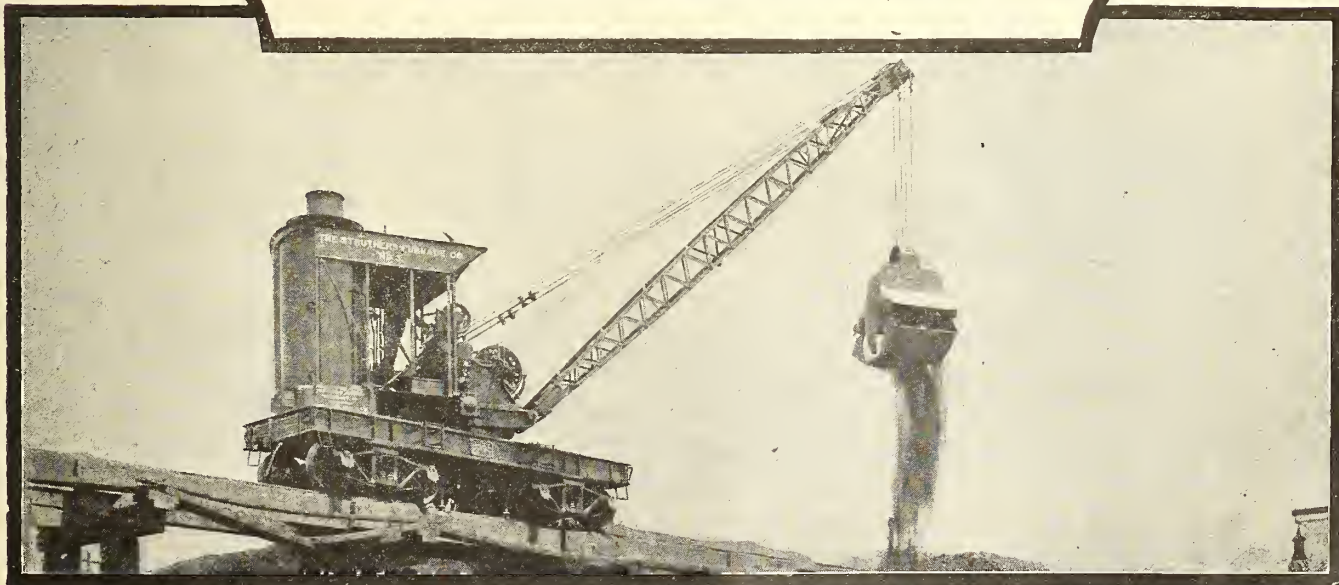
Brownhoist Machinery for handling ore and coal have been used for 38 years, and can be found in many parts of the world. These many years' records prove them to be fast, safe and durable. You can depend upon them. Brownhoist equipment may cost more, but is worth it.

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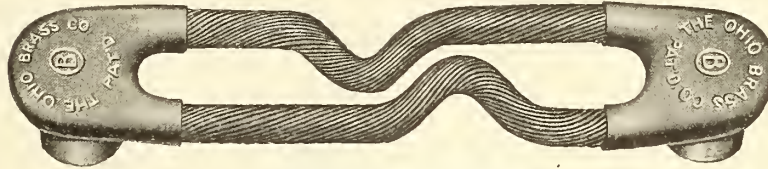
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Gauging the terminals



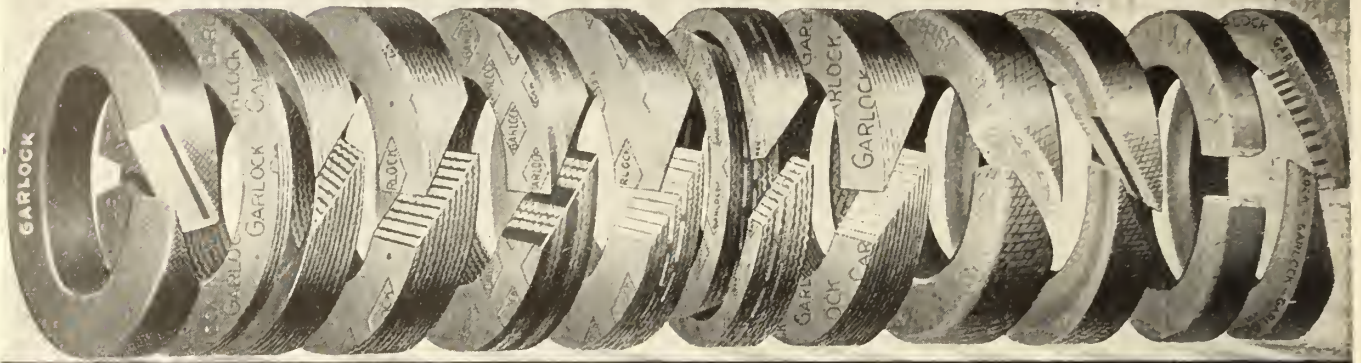
Welding the terminals  
(There is a homogenous union between strand and terminal)

***Good Bonding Saves Money  
O-B Bonds are Good Bonds***

**THE OHIO BRASS COMPANY, Mansfield, Ohio**



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## FOR EVERY PURPOSE

Thirty-one years ago we began to manufacture packing and during that time we have steadily insisted upon the best of everything that enters into our product—design, material, workmanship. Constant effort has been directed toward improving and perfecting our packings to keep pace with the wonderful progress that has been made in the development of modern machinery.

Our factories, devoted exclusively to the manufacture of our packings, are the largest, most modern and best equipped in the world, and the locations of our numerous branch factories and stores are such as to afford the greatest advantage in serving our customers promptly.

*We are Exclusive Packing Manufacturers—We Make Nothing Else*

**THE GARLOCK PACKING CO.**  
**Hamilton, Canada**  
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HAVE NO EQUAL IN  
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SOLE MANUFACTURERS OF  
Celebrated Galena Coach, Engine and Car Oils  
*LUBRICATION ON A GUARANTEED BASIS*

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ELECTRIC RAILWAY LUBRICATION  
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*Galena Railway Safety Oil*—Made especially for use in headlights, marker and classification lamps.

*Galena Long Time Burner Oil*—For use in switch and semaphore lamps, and all lamps for long time burning, avoiding smoked and cracked chimneys and crusted wicks.

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Works

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Square

8", 9", & 12"

Fluted

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Sand Cast Any  
Size.

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1 $\frac{3}{4}$ " to 6" Square

Cogged any size  
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Electrical Work

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Car Axles

Miscellaneous

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High Carbon for  
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Harrow Discs  
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Any thickness and  
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## Castings

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Cars

Electrical Work

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Miscellaneous

## Specialties

Draft Arm

Draft Gears

Truck Side Frames

Bolsters

Car Couplers

*We Specialize on High Carbon and Alloy Steels*

**The Dominion Foundries and Steel**  
Limited

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CANADA



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The frame superstructure of Mudge Motor Inspection Cars is formed with two wooden rails running full length of car. This truss construction supports all parts of power plant and axle boxes. No parts are suspended. This defeats looseness—vibration—side sway. It keeps parts shop-tight. Just one of the many exclusive features of Mudge Cars.

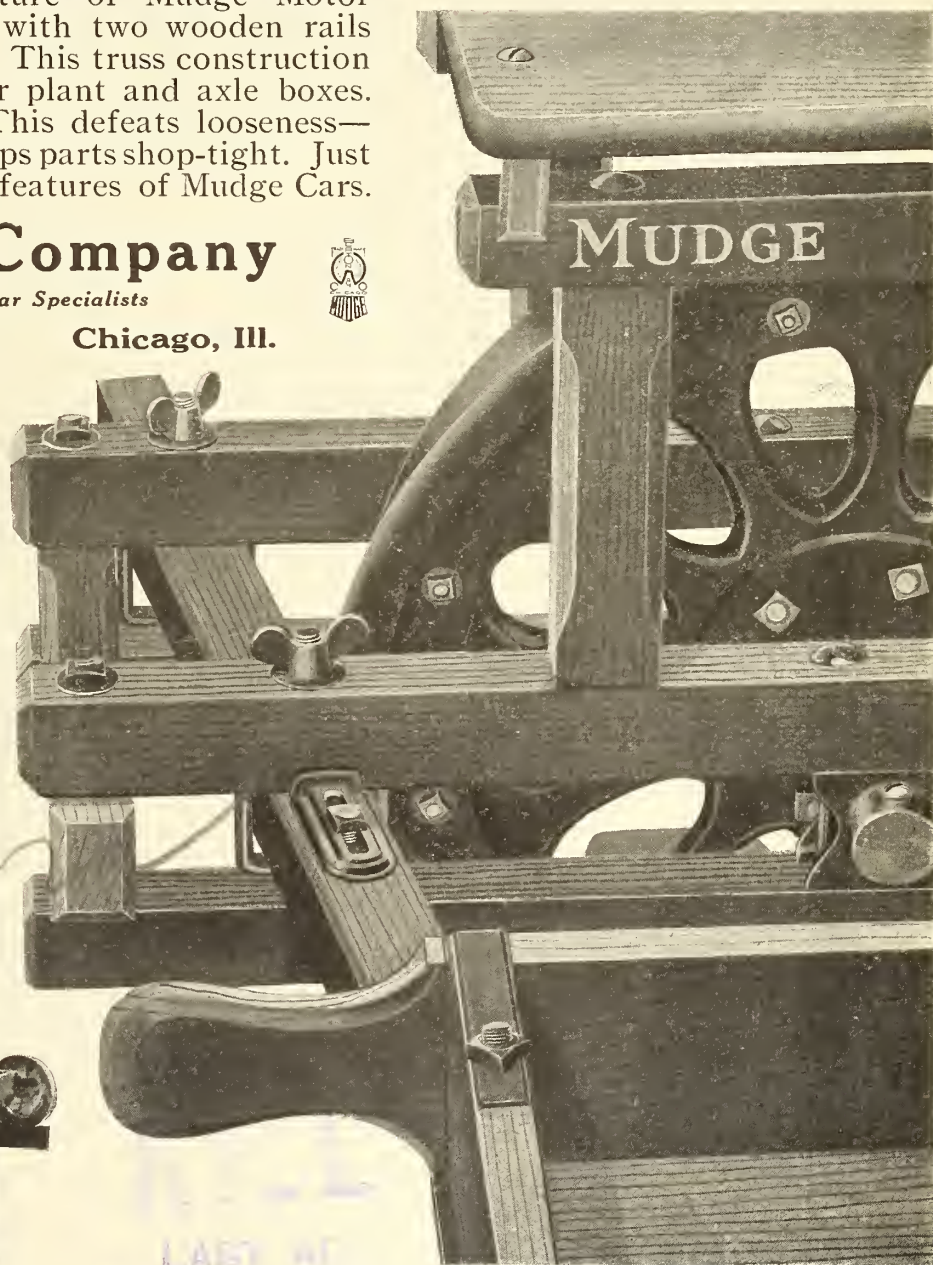


## Mudge & Company

*Railroad Motor Car Specialists*

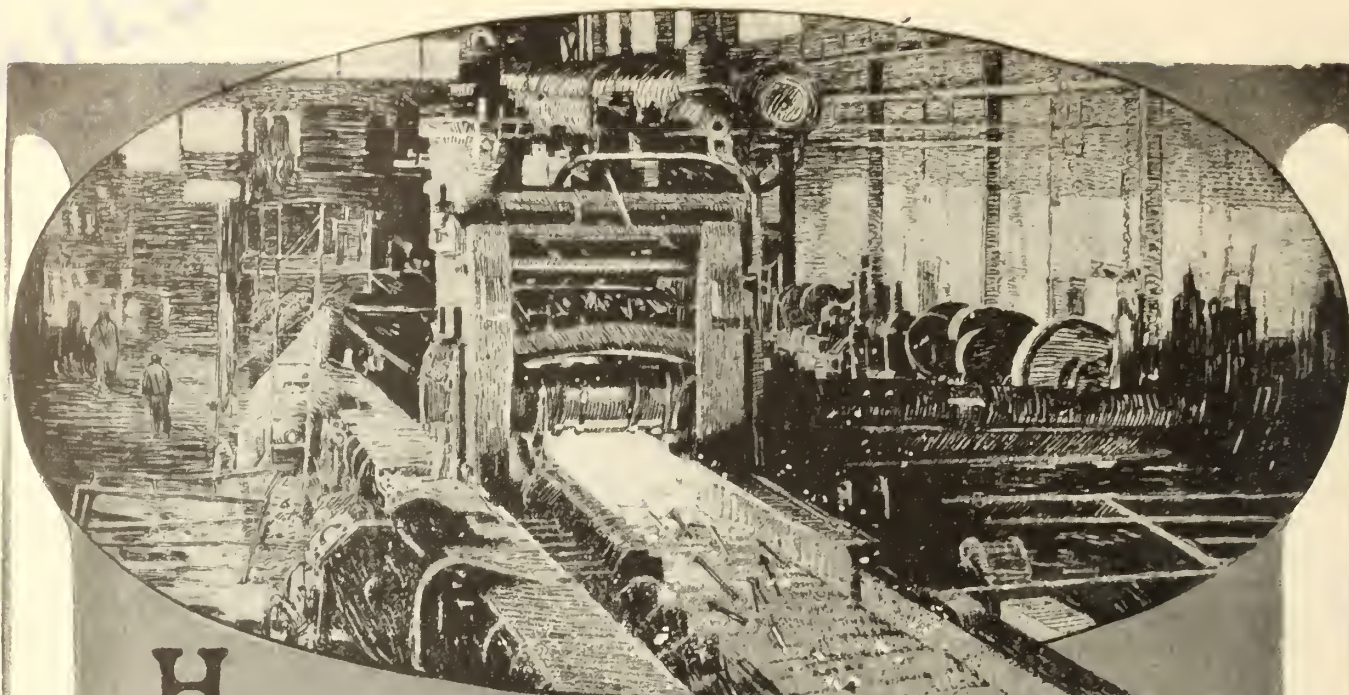
**Railway Exchange**

**Chicago, Ill.**

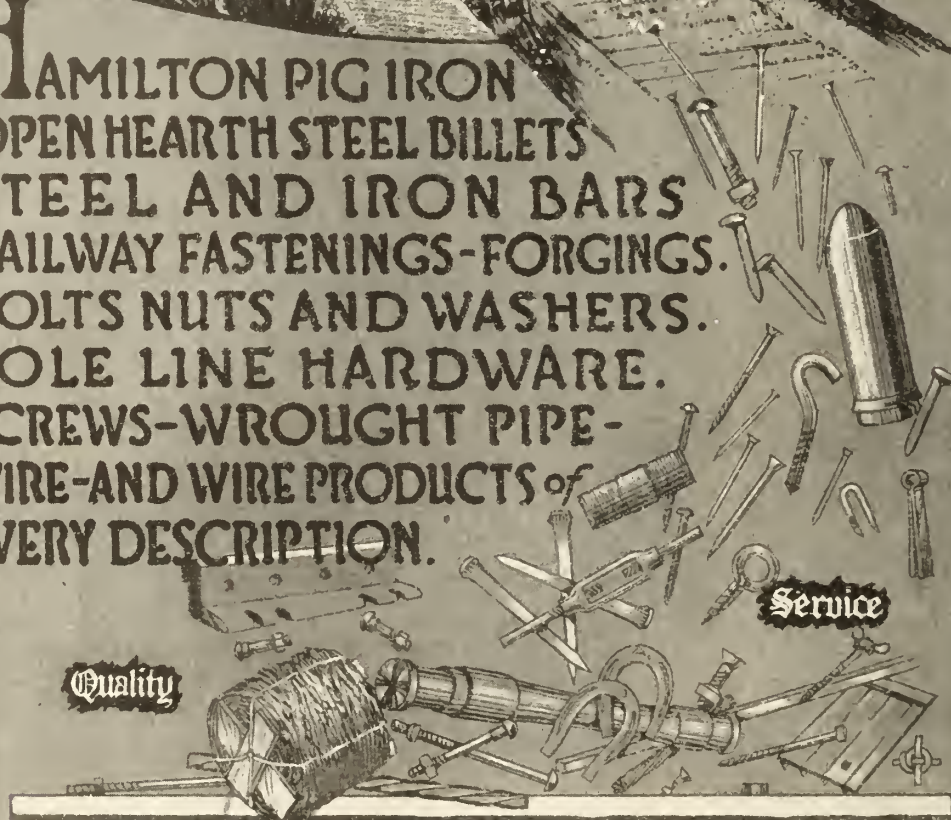


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**H**AMILTON PIG IRON  
OPEN HEARTH STEEL BILLETS  
STEEL AND IRON BARS  
RAILWAY FASTENINGS-FORGINGS.  
BOLTS NUTS AND WASHERS.  
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SCREWS-WROUGHT PIPE-  
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EVERY DESCRIPTION.



**Quality**

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# **GENERAL RAILWAY SIGNAL COMPANY**

## **OF CANADA LIMITED**



Railway Operating Engineers, Manufacturers and Contractors  
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling  
Electric Interlocking

Electric  
Interlocking

Mechanical  
Interlocking

Highway  
Crossing Gates

Highway  
Crossing Bells



A-P-B. Automatic  
Block Signals for  
Single Track

A-C. and D-C.  
Automatic Block  
Signals for  
Double Track

### **Advantages of Absolute-Permissive Block Signaling (A-P-B)**

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.



**Head Office and Works**  
**LACHINE, QUEBEC**

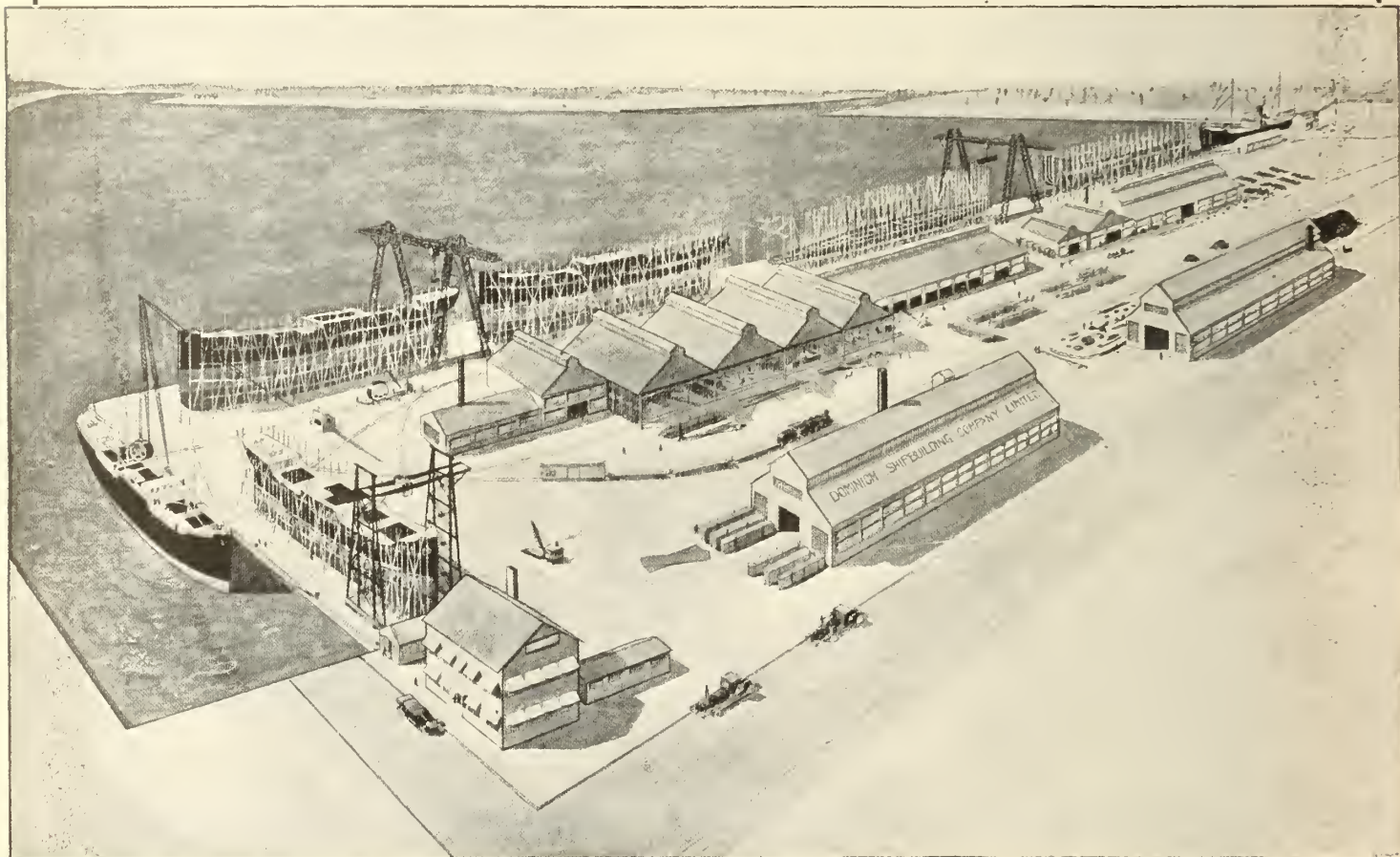




4411  
LAST AD.

# DOMINION

## Shipbuilding Company, Limited



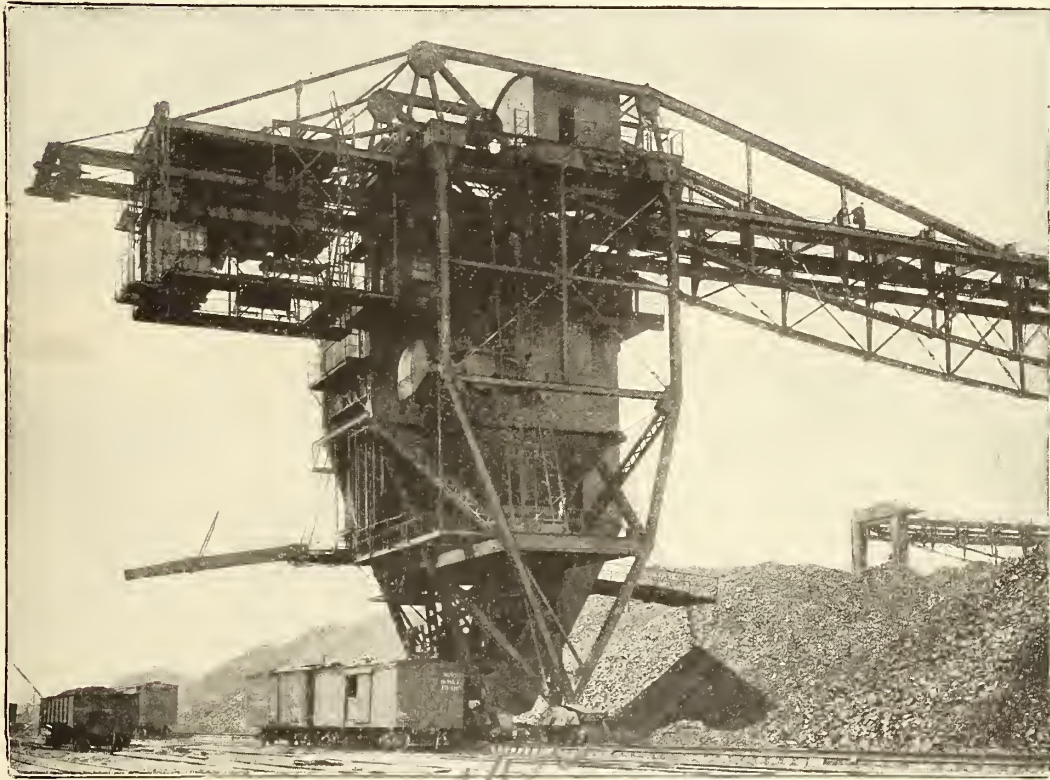
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Harbor Front, Bathurst St.

Toronto      -      -      -      Canada



# The Wonderful Single Service Chilled Iron Wheel



Compare the size of the railroad car with the size of the Brown Hoisting Machine.

The load that each Freight Car wheel carries is<sup>2</sup> about 25,000 pounds. The load carried by each wheel for this hoisting machine is 105,000 pounds.

The Hoisting Machine is carried on 24-1950 lb. double plate, double flanged *chilled iron wheels*.

A special 4 inch straight face 159 lb. Cambria rail is required.

Chilled Iron is harder than tempered steel and the *Bearing Power* for car wheel purposes is over four times as great as is required.

Chilled Iron will not crush or flow under the heaviest load.

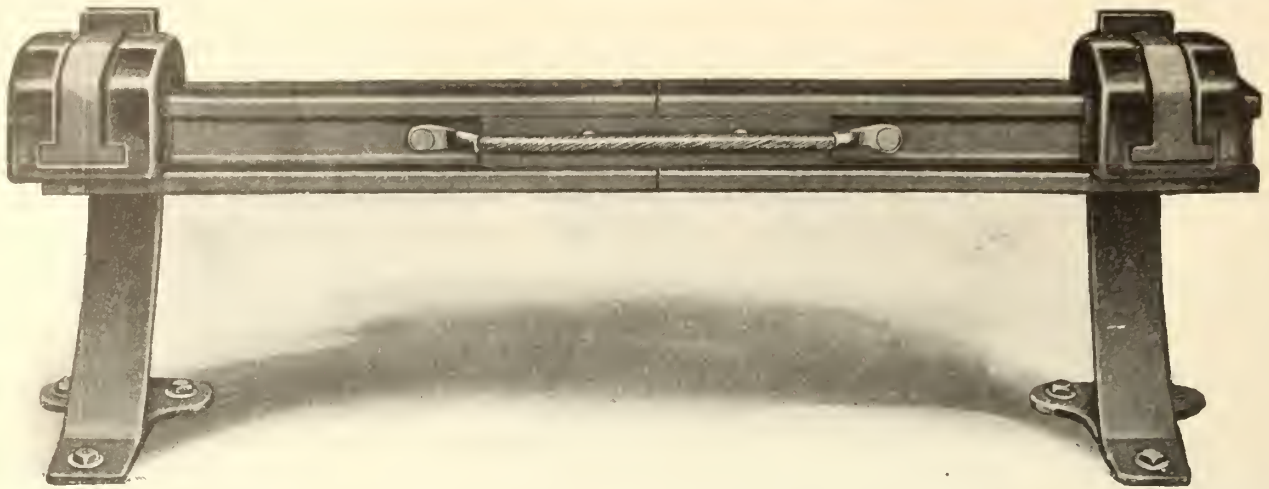
25,000,000 chilled iron wheels in service.

## Association of Mfrs. of Chilled Car Wheels

1229 McCormick Bldg., Chicago

Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day





## Right Here, for Contract Rail Material



Type X inverted contact rail insulator for use on heavy cranes or railways

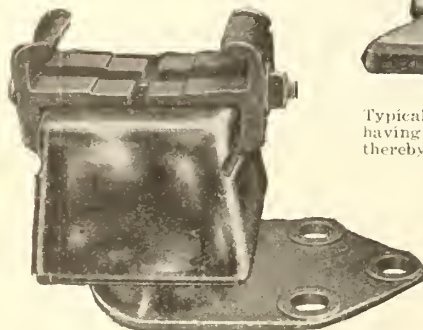
For light or heavy shipyard or industrial cranes, industrial haulage system and electric railways. A complete line of insulators, standards and contact rail shoes that will meet practically all conditions.

Being specialists in this line we are also prepared to recommend and supply material of special design to meet any complex conditions you may have.

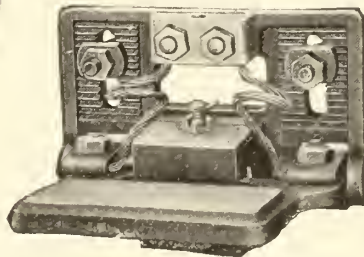
Write for data sheets.



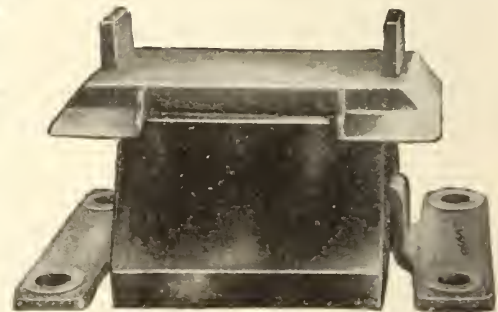
Type LV contact rail insulator designed for railway and heavy haulage or crane work



Type I contact rail insulators with off-set base for bolting directly to ties



Typical Keystone Contact Rail Shoe having a reversible contact member thereby enabling its use for over-contact or under-contact rails



Type SP contact rail insulators specially designed for industrial service. The insulator rests on the ties, and is held in place with two iron clamps

### Electric Service Supplies Co.

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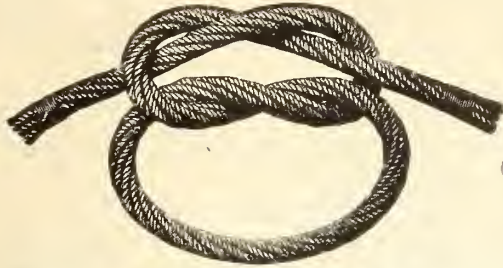
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Canadian Government Railways Standard Ballast Car

For  
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For  
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For Coal  
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Built of  
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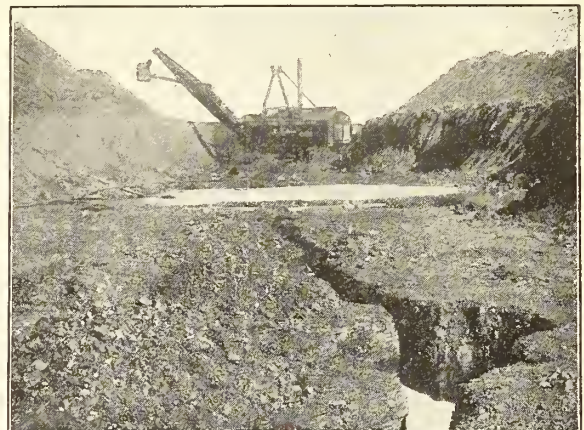
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## "MARION" EXCAVATING MACHINERY

FOR ALL CLASSES OF EARTH,  
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*Let Us Quote For You*

**RAILROAD DITCHERS**



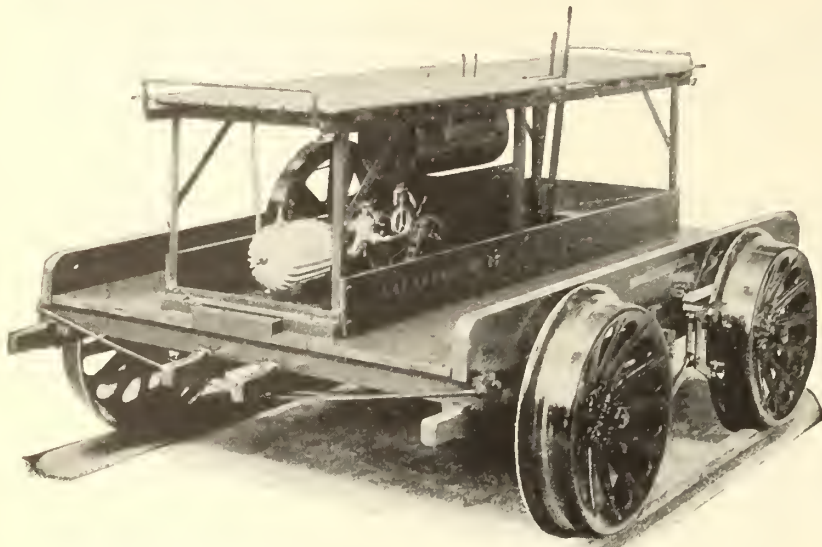
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# Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

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Established 1834

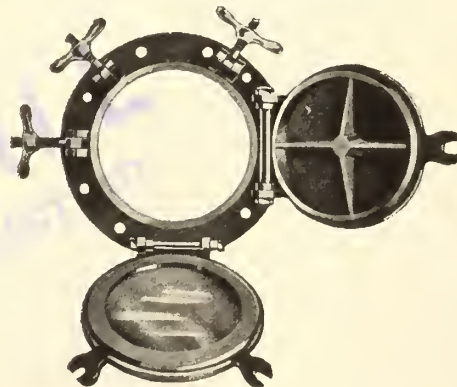
Incorporated 1907

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Port or Side Lights

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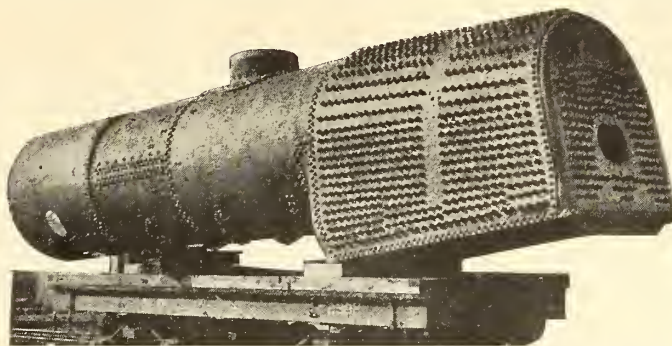
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Harvard Turnbull & Co.  
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That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

The Flexibility in the bolt serves to accommodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefulness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintenance.

*In use on all the prominent railroad systems of Canada.*

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.



## A Quality Standard

"Equal to Berry Brothers" is a statement often heard by Varnish buyers. This is because the uniform dependability of all "Berry" products has caused them to become a sort of a standard of comparison.

There is no surer prelude to a good finish, than the use of Berry Brothers Varnishes, Enamels and Stains.

Lionoil the rust preventive is now made in the following colors—Blue, Green, Orange, Gray, Khaki and Red.

**BERRY BROTHERS**  
(INCORPORATED)  
World's Largest Varnish Makers

WALKERVILLE, ONT.





Franklin Automatic  
Adjustable Driving  
Box Wedge.

## WEDGES ADJUSTED EVERY TURN OF THE DRIVERS

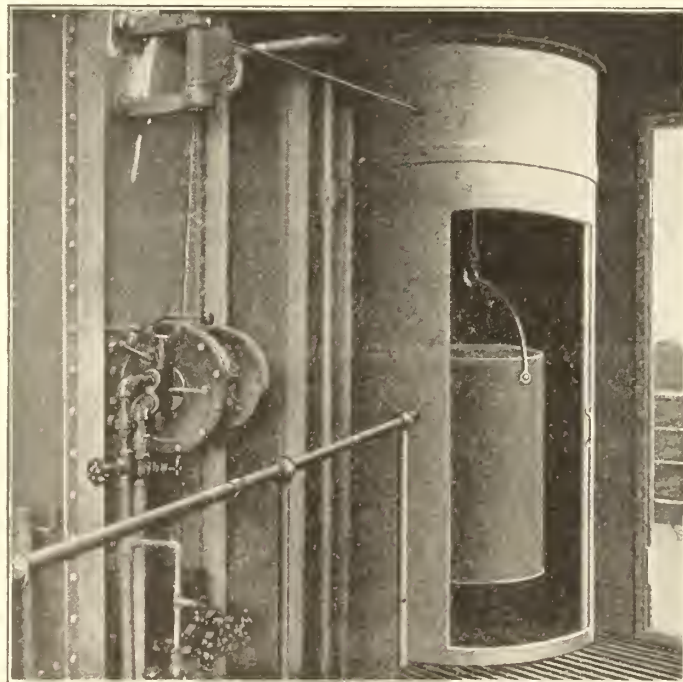
You know what slack wedges do to rod brasses and to the whole running gear.

Franklin Automatic Wedges set themselves up uniformly and at running temperature mile by mile as the engine works.

They give results that engines used to give years ago when wedges got the attention they deserved.

**Franklin Railway Supply Co. of Canada  
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TRANSPORTATION BUILDING  
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## The "Little Tugger" Ash Hoist

The Little Tugger Ash Hoist is economical of steam, it has no projecting parts, it is intended for hard work.

*Note the Compactness.*

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BRANCHES: SYDNEY, SHERBROOKE, MONTREAL, TORONTO, COBALT, TIMMINS,  
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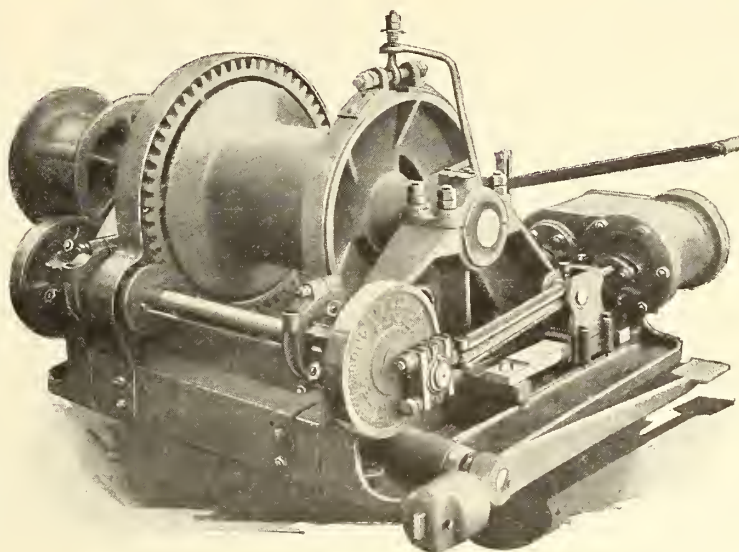


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The illustration shows the Winch generally used on the ships being built in the United States.

A certain proportion are fitted with two Winch Heads, Extended Shafts and Outboard Bearings.

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Hoisting Engines

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We will quote quickly.

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**T**HIS explains why railroads and steel mills used over one million pounds of Thermit in 1917. Also why 95% of the railroads in the United States and Canada having over 10 locomotives, use Thermit for welding frames and all heavy sections.

There are few machine parts which are subjected to greater strains or more severe shocks than a locomotive frame or a blooming mill pinion. Yet Thermit welds on such parts are being made every day and **STAND UP IN SERVICE FOR YEARS.** The reason for this is that, unlike ANY OTHER WELDING PROCESS, the steel to make a Thermit weld is produced **IN BULK** at a temperature of

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Remember that Thermit should not be confused with either oxy-acetylene or electric welding. It stands in a class by itself. It welds sections which cannot be successfully welded by any other method.

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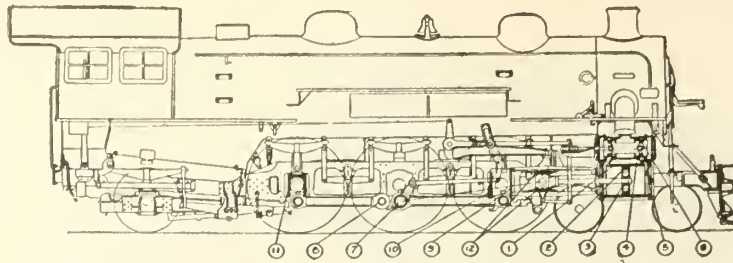
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For 12 of the Principal Parts of a Locomotive

### Just An Ordinary Locomotive But—Giving Record Service

Since April, 1916, this locomotive has made 66,000 miles and the side rods have been removed. If every locomotive would make that mileage without renewing side rod bushings' maintenance costs could be reduced. And this is only one of the many records we can quote you on

### HUNT-SPILLER GUN IRON

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Made Only By

## Hunt-Spiller Manufacturing Corporation

W. B. LEACH, PRES. AND GEN. MGR.

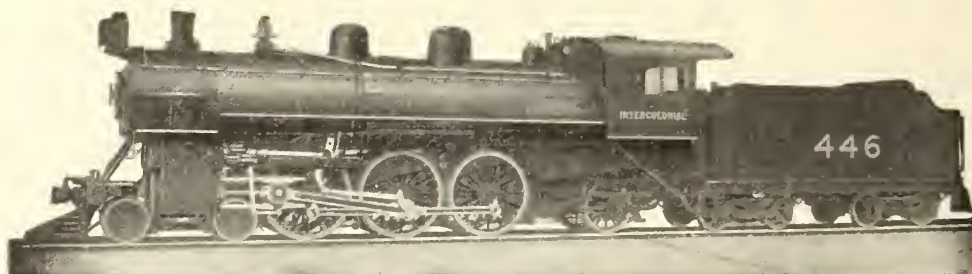
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383 Dorchester Avenue, So. BOSTON, MASS.

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This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

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MARINE RAILWAY, CAPACITY 3000 TONS DEADWEIGHT

LARGER VESSELS DOCKED IN GRAVING DOCK, 480 FT. x 65 FT.

LOWEST RATES ON PACIFIC COAST



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Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

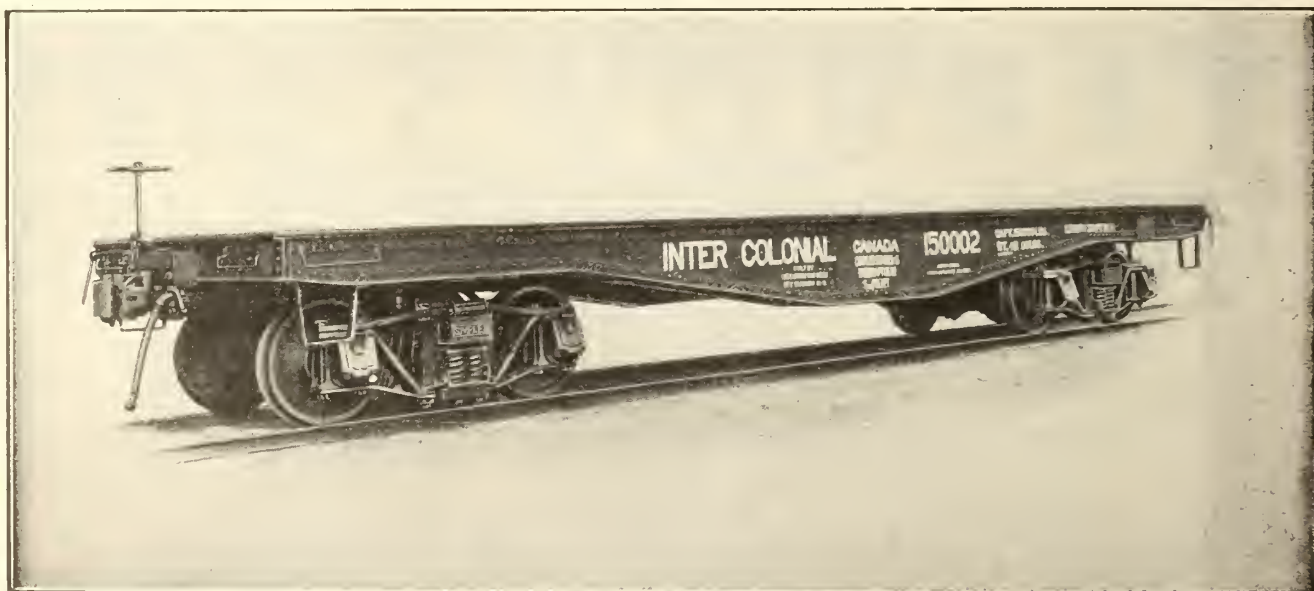
Also can supply forgings of all shapes and sizes made of ordinary or "Harmer" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

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## FLAT CARS, CABOOSES AND MINE CARS

We make a specialty of Flat Cars, Caboose and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

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# Keep the Locomotive Boilers

Free from

*Scale Formation, Corrosion, Pitting and Foaming*

and they will be in service more days per month, burn less fuel, haul heavier trains, and have no failures chargeable to water conditions.

These results can be accomplished by the use of

## Dearborn Treatment

at a lower cost per thousand gallons of water than by any other system of water treatment.

Dearborn Treatment is made to suit the water conditions shown by analysis, and the material is furnished in the most convenient form for economical use by the Railways. We furnish the services of our experts free to direct the application of the treatment, when desired.

Gallon samples of the water supplies required for analysis.

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**In All Commercial Sizes**

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*The Perfect  
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Because it combines  
rare beauty and great  
durability with un-  
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cleanable qualities.



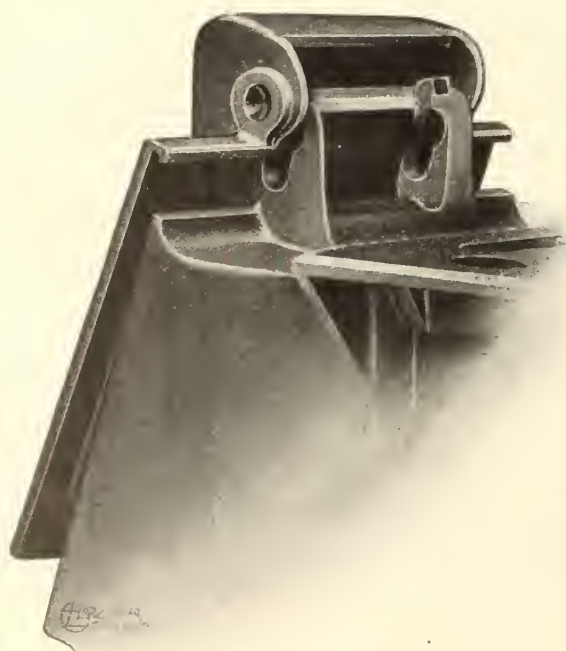
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**NEW TORONTO**

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If you use blades for  
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Manufactured by  
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*For Fifty New Cars*

Toronto, like Montreal, has adopted *National Pneumatic Door and Step Control*, so that the leading cities of both Ontario and Quebec are setting a good example in the elimination of arduous labor from the electric railway car.

The advantages of pneumatic operation of car doors and steps are so many that we cannot do more here than publish the decision of these two great street railway systems and suggest that you write us concerning the adaptation of *National Pneumatic Door and Step Control* to your cars, whether present or proposed.

# NATIONAL PNEUMATIC COMPANY

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Air Pump Liner  
(Weight 550 Lbs.)

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for Shipbuilders

This is the time when every minute counts. Accuracy you must have in your ships' castings, you also want to be sure of the quality of the fittings you put in the ships that you are building. We keep our organization up to the highest point of efficiency. No matter how large or how small is the casting you desire we can deliver it to you on time. Send for our Castings Booklet. It will give you a fair idea of what we have been doing along these lines.

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10.45 p.m.	12.45 p.m.	Lv. OTTAWA	Ar	6.30 p.m.	7.30 a.m.
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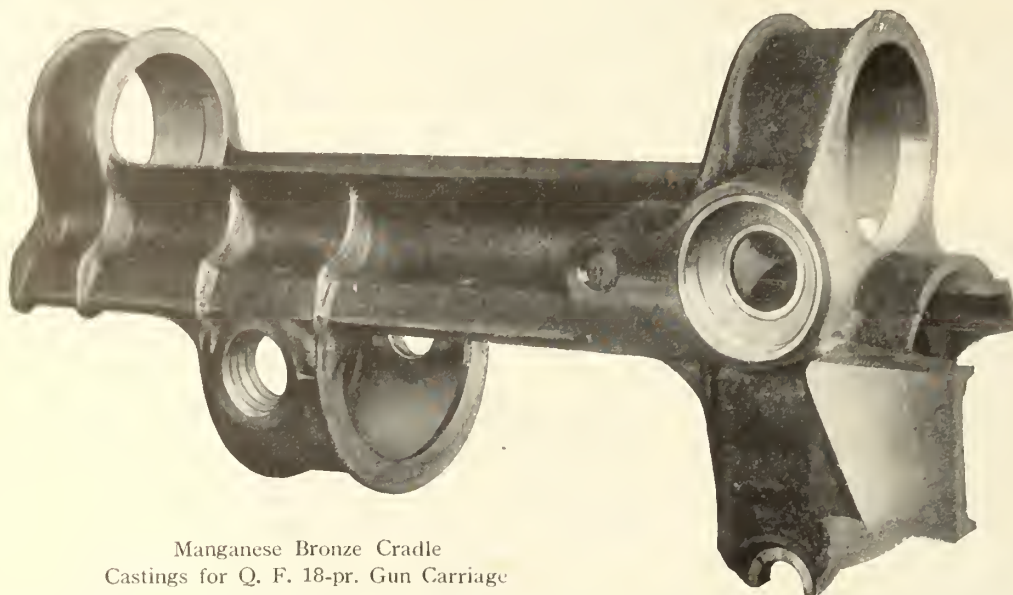
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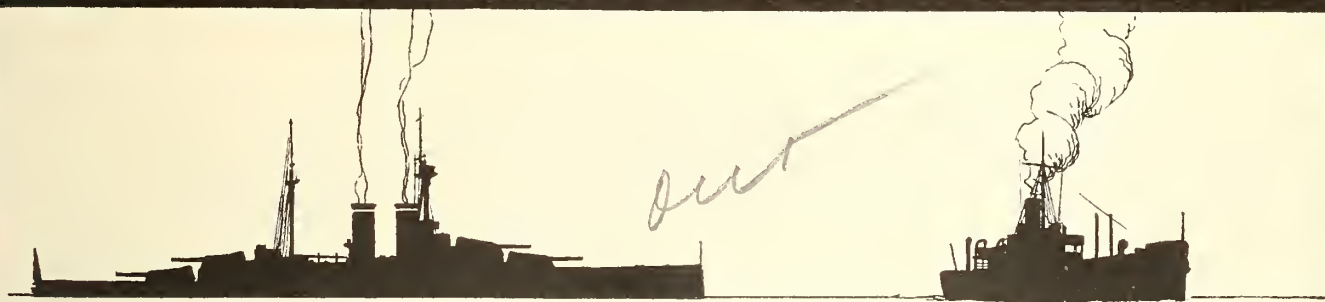
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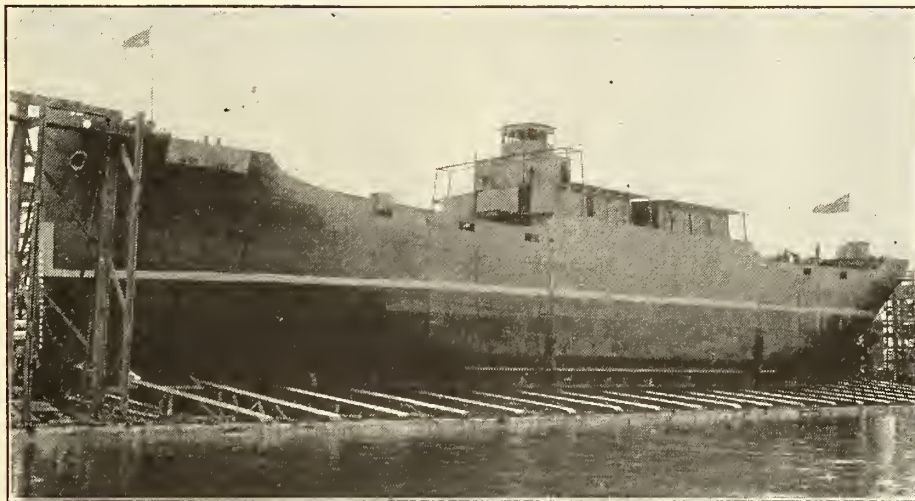
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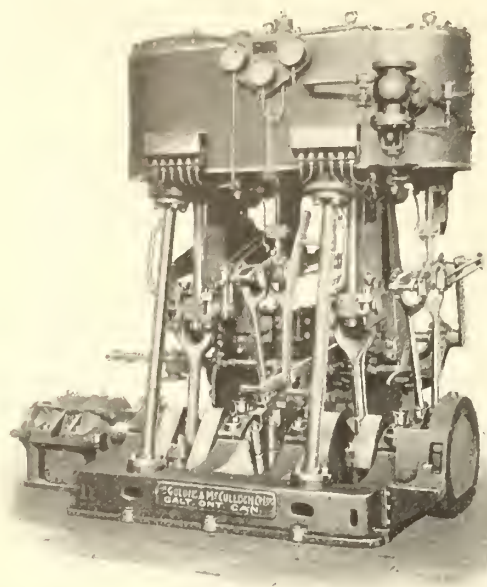
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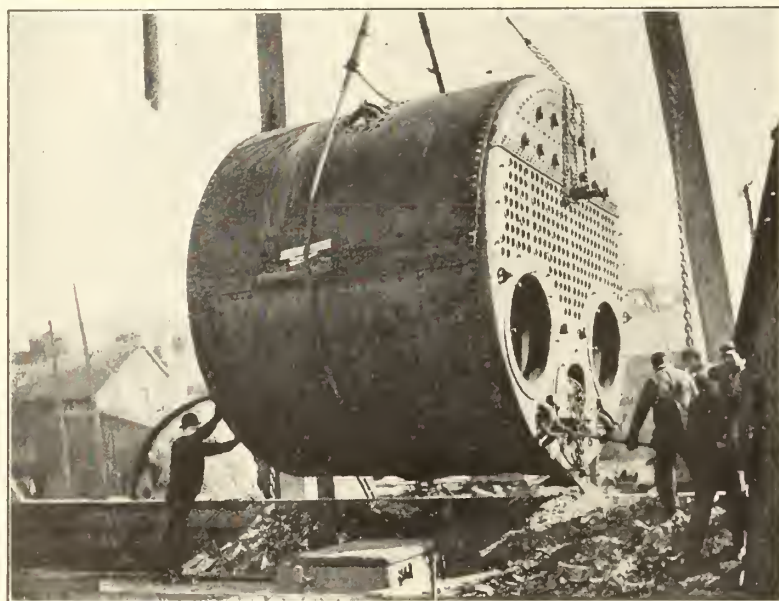
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13 ft. x 11 ft. Clyde Boiler for Senator Derbyshire, weight 30 tons.  
Designed for a working pressure of 125 lbs., but allowed 131 lbs. by the Government Marine Inspector. This boiler has 212 tubes, including stay tubes  $3\frac{1}{4}$  inches diam. x 7 ft. 9 ins. long, three Morrison corrugated flanged furnaces of the "horse collar" withdrawal type, grates and smoke box. The steamer was laid under our shear leg at the close of navigation and the old boiler removed. Within 10 hours after the breaking up of the ice in our dock the new boiler was installed in the boat.

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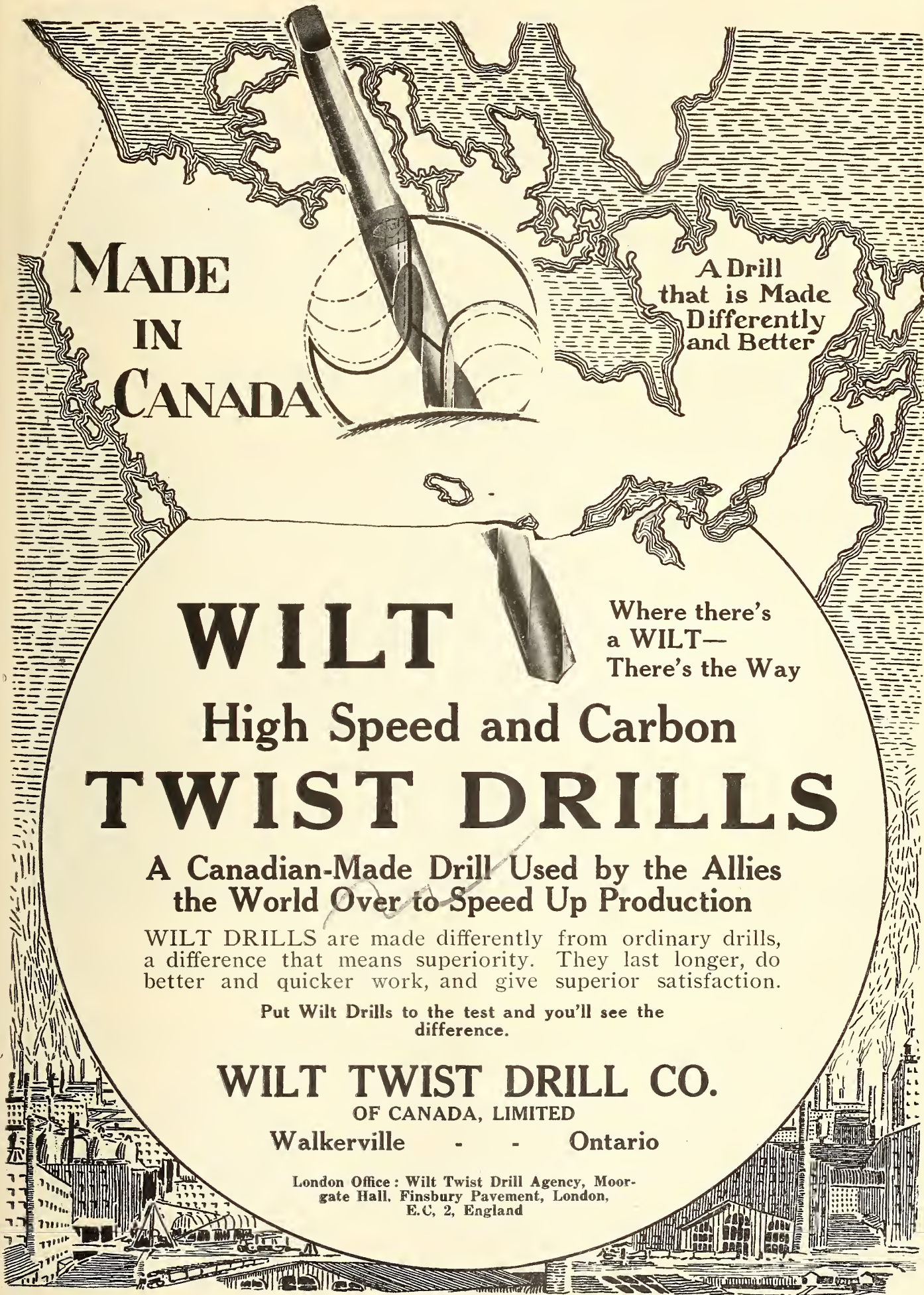
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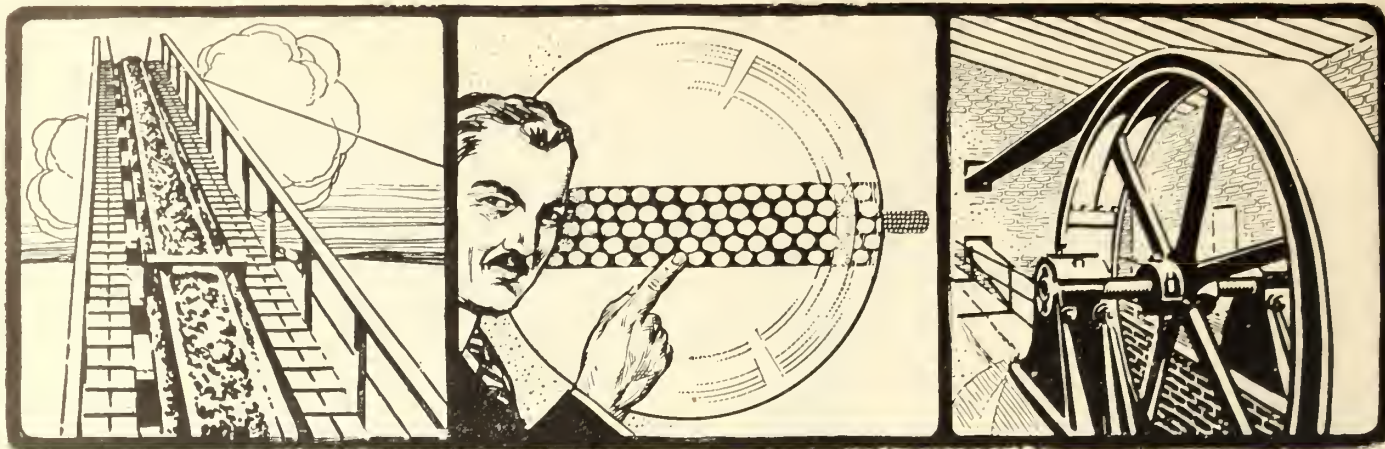
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Dominion Rubber System Belts are **one-piece belts**—with absolute uniformity, dependability, economy and satisfaction built into each foot.

The layers of strong endless fabric are saturated and embedded in special rubber which gives a toughness that is practically indestructible.

Its rubber surfacing has a tested pulley grip greater than that of any other belt made, hence it allows minimum power leakage.

Where water, acids, oils, dust, grit, belt-shifters, etc., soon ruin ordinary belting, there is a type of Dominion Rubber System Belting that will withstand the severest punishment and eliminate many replacements and delays.

The largest users of belting in Canada have proved the value and efficiency of our belting in actual service and through the special free service of our belting experts, have cut costs and speeded up production.

This free technical service is yours to command whether you are a customer or not and it opens the door to the facilities of the largest rubber organization in Canada with a fifty year record for producing dependable products.

If your belting problems need emergency service, phone or wire our nearest branch.

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# Canadian Railway and Marine World

December, 1918

## The Canadian Railway War Board's Executive Committee.

The Canadian Railway War Board's executive committee's first meeting since its re-organization, by the addition to it of E. W. Beatty, President, C.P.R.; and by the substitution of D. B. Hanna, President, Canadian Northern Ry., for the former President, Sir William Mackenzie, was held in Montreal Nov. 6, being attended by Lord Shaughnessy, Chairman, C.P.R. Co., who continues as Chairman of the Canadian Railway War Board; Vice Chairman, H. G. Kelley, President, Grand Trunk Ry.; E. W. Beatty, President, C.P.R.; D. B. Hanna, President, Canadian Northern Ry., and A. H. Smith,

becoming acute last winter, is now greatly modified.

"The supply of freight cars has been increased by 14,000 new cars bought by the government for the government roads. These new cars, added to the better loading, quicker handling and more rapid unloading methods obtained through the Canadian Railway War Board's efforts, mitigate the danger of car shortage. That, however, does not mean that economical methods may be relaxed. Last winter over 20,000 Canadian cars were lost in the United States traffic tie-up. It is hoped that this winter

cept in so far as the roads are still understaffed. A special labor board, formed at the request of the Canadian Railway War Board, with the co-operation of the brotherhoods, is administering the McAdoo award very satisfactorily. Over 14,000 railway employes have been laid off by influenza, but are now returning to work. Forty-five thousand doses of anti-flu serum have been sent west by the board to forestall any further spread of the disease.

"Old trouble spots have been carefully guarded. The temporary isolation of the Drumheller coal fields in Alberta by rail-



The Canadian Railway War Board's Executive Committee

From photograph taken in Canadian Pacific Ry. Co.'s board room at Montreal, Nov. 6, 1918. From left to right those present are—Howard G. Kelley, President Grand Trunk and Grand Trunk Pacific Railways; D. B. Hanna, President, Canadian Northern Ry.; Lord Shaughnessy, K.C.V.O., Chairman, Canadian Pacific Railway Co., who is also Chairman of the Canadian Railway War Board; A. H. Smith, formerly President, New York Central Rd.; E. W. Beatty, President, Canadian Pacific Railway Co., and W. M. Neal, General Secretary, Canadian Railway War Board. The oil paintings on the walls are of Lord Mount Stephen to the left and Lord Strathcona to the right.

formerly President, New York Central Rd., now Eastern Regional Director, United States Railroad Administration, who represents U.S. lines operating in Canada. The following statement was issued after the meeting:—

"Whether peace comes tomorrow or next week, Canada's trade arteries are in healthy condition and will meet even the most complex changes in the current of traffic, without confusion or congestion. Thanks to the foresight of the Dominion Government in ordering locomotives to be built at a time when some of the Canadian roads were unable to finance and purchase, the power situation is now fairly satisfactory. Two hundred new locomotives are now in service on the Canadian Government, Canadian Northern and Grand Trunk Railways. The scarcity of locomotives, which was on the verge of

the U.S. lines will be able to return Canadian cars almost as fast as they get them.

"There is more track-room this year, although the traffic handled has been heavier than ever. The Canadian Railway War Board was successful in getting several heavy movements, such as the fuel and pulpwood movements, well out of the way during the summer, when traffic is light. This clears the roads for essential winter traffic and the unusually heavy movement of wheat by rail during the coming winter. The condition of rails and roadbed is not as satisfactory as might be desired. New rails have been denied the roads owing to the heavy demand for steel for munitions. Out of the 100,000 tons finally allotted only 80,000 have been received. These have been used to good advantage on the main lines.

"The labor situation is satisfactory, ex-

way breakdown last winter, and the consequent fuel shortage in certain prairie districts, will almost certainly not happen this winter, as the vital section of line has been double tracked. The board has made working plans for the Canadian Northern, Canadian Pacific and Grand Trunk Pacific to co-operate in carrying traffic in the west should any one road find itself overburdened. The board has arranged also that the Michigan Central, Toronto, Hamilton & Buffalo, C.P.R. and G.T.R. shall all haul traffic direct into Toronto. Formerly the G.T.R. had the only direct route. The Michigan Central hauled from the frontier to Welland, the T.H. & B. from Welland to Hamilton and the C.P.R. from Hamilton to Toronto. The locomotive coupled on at the frontier will now run through to Toronto.

"Plans are being perfected for further



unification of terminal and other facilities. There is reason to believe that except for possible contingencies of storm and zero weather, epidemics and labor shortage, Canada's railway system is in more nearly perfect condition to face peace conditions and the reconstruction period than any in the world."

### Regulations for Care of Railway Rolling Stock.

The United States Railroad Administration's Operating Division has issued the following instructions to all railways:

**Care of Journal Boxes.**—It is desired that all freight car journal boxes be repacked with properly prepared packing at least once every 12 months, at which time all packing will be removed from the boxes and the boxes cleaned; dust guards to be renewed when wheels are changed. The date and place where the work is done must be stenciled on the car body in 1 in. figures and letters, using the same station initial that is used for airbrake stencil. This work to be done as far as possible when cars are on repair track undergoing heavy repairs. When on repair track for heavy repairs, cars which have not had boxes repacked within 9 months will have all boxes repacked and the record stenciled on the car as above. This does not contemplate any change in the intermediate packing of boxes when it is necessary to do so. No change should be made in the stenciling unless all boxes are repacked.

**Inspection of Ashpans and Spark Arresters.**—A careful and thorough inspection of every part of the spark arresting appliances in front end of locomotives must be made every time the front end door is opened for whatever purpose; but at intervals of not more than 7 days, and at the same time, the ash pans, hoppers, slides, or other apparatus for dumping cinders and dampers must also be inspected. Observe if the slide or hopper operates properly and closes tight. When conditions such as extreme drought or the state of adjoining property or crops require it, this inspection must be made at least once every 24 hours.

A record of condition on arrival must be made under the proper heading on an approved form, immediately following each inspection, with the date made, together with a complete statement of any repairs or renewals required. The above record to be made and signed by the person who made the inspection.

Nettings and spark arresters must be put in perfectly tight and serviceable condition before the locomotive is put into service. Renew netting and plates in front end when worn thin or defective, instead of patching them. Ashpans and hoppers must be tight, and dampers, slides, or apparatus for dumping cinders must be in good working order, closing tight.

Record of repairs and renewals made must be entered under the proper heading on an approved form when repairs have been made, with the date; the entry to be made and signed by the person doing the work.

These are the minimum requirements, and local conditions or regulations requiring additional precautions are not affected hereby.

**The Organization of a Canadian Railway.**—E. S. M. MacNab, Engineer of Car Lighting, spoke at the Montreal weekly electrical luncheon on Nov. 20, on "The organization of a Canadian railway."

## Birthdays of Transportation Men in December.

Many happy returns of the day to:—

E. T. Agate, ex-Assistant Superintendent Northern Lake Superior Division, Canadian Northern Ry., Capreol, Ont., now of Pittsford, N.Y., born there Dec. 7, 1874.

A. G. Albertson, City Ticket Agent, C.P.R., San Francisco, Cal., born at Copenhagen, Denmark, Dec. 31, 1887.

J. H. Barber, Engineer, Double Track, C.P.R., Toronto, born at Cobourg, Ont., Dec. 20, 1856.

H. E. Bissell, Land and Tax Agent, Grand Trunk Pacific Ry., Winnipeg, born near Noyan, Que., Dec. 31, 1867.

N. E. Brooks, ex-Engineer, Maintenance of Way, Western Lines, C.P.R., now at Sherbrooke, Que., born there, Dec. 25, 1866.

W. W. Butler, Vice President and Managing Director, Canadian Car and Foundry Co., Montreal, born at Danville, Ohio, Dec. 9, 1862.

J. M. Cameron, General Superintendent, Alberta District, C.P.R., Calgary, born at Lochabar, N.S., Dec. 18, 1867.

W. C. Casey, General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Winnipeg, born at Moncton, N.B., Dec. 12, 1882.

G. W. Caye, General Purchasing Agent, G.T.R., Montreal, born at Malone, N.Y., Dec. 1, 1865.

John Flynn, Car Foreman, C.P.R., Smiths Falls, Ont., born at Richmond, Que., Dec. 5, 1867.

G. C. Gahan, Assistant General Auditor, C.P.R., Montreal, born there Dec. 28, 1874.

W. H. Gardiner, City Freight Agent, C.P.R., and District Freight Agent, Esquimalt and Nanaimo Ry., Victoria, B.C., born there Dec. 6, 1859.

A. S. Goodeve, member Board of Railway Commissioners for Canada, born at Guelph, Ont., Dec. 15, 1860.

A. J. Gorrie, ex-Superintendent District 1, Transcontinental Division, Canadian Government Railways, Quebec, now of Toronto, born at Raith, Kirkcaldy, Scotland, Dec. 10, 1868.

W. H. Grant, General Tie and Timber Agent, and acting General Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto, born at Acton, Ont., Dec. 8, 1858.

F. P. Gutelius, General Manager, Delaware & Hudson Rd., U.S. Railroad Administration, Albany, N.Y., born at Mifflinburg, Pa., Dec. 21, 1864.

Jas. H. Hall, President, Western Transportation Co., Ltd., Ottawa, Ont., born at Hawkesbury, Ont., Dec. 20, 1862.

J. T. Hallisey, Superintendent, District 6, Intercolonial Division, Canadian Government Railways, Truro, N.S., born at Beaver Bank, N.S., Dec. 29, 1862.

D. B. Hanna, President, Canadian Northern Ry., Toronto, born at Thornliebank, Scotland, Dec. 20, 1858.

R. W. D. Harris, Trainmaster, Moose Jaw Division, Saskatchewan District, C. P.R., Moose Jaw, born at Victoria, B.C., Dec. 12, 1879.

J. J. Hennigar, District Freight Agent, Great Lakes Transportation Co., Windsor, Ont., born at Topeka, Kan., Dec. 21, 1884.

A. J. Isbester, ex-Assistant District Engineer, Port Arthur District, Canadian Northern Ry., Port Arthur, Ont., born at Ottawa, Dec. 18, 1879.

L. S. Landers, Assistant Engineer, Canadian Government Railways, Levis, Que., born at Farnham, Que., Dec. 15, 1888.

J. T. McGrath, ex-Superintendent of Motive Power and Equipment, Chicago and Alton Rd., Bloomington, Ill., born at Toronto, Dec. 6, 1869.

A. T. McKean, Division Freight Agent, C.P.R., Winnipeg, born at St. John, N.B., Dec. 18, 1886.

E. S. McMillan, Road Foreman of Locomotives, G.T.R., Montreal, born there, Dec. 14, 1880.

J. M. MacArthur, Superintendent, Medicine Hat Division, Alberta District, Medicine Hat, Alta., born at Toronto, Dec. 8, 1885.

A. E. Macdonald, General Claims Agent, Canadian Northern Ry., Winnipeg, born at Woolwich, Eng., Dec. 11, 1870.

L. Macdonald, Division Freight Agent, G.T.R., Toronto, born at Montreal, Dec. 10, 1871.

A. D. MacTier, Vice President, Eastern Lines, C.P.R., Montreal, born at Blairgowrie, Scotland, Dec. 27, 1867.

W. J. Mathison, Assistant Superintendent, District 1, Intercolonial Division, Canadian Government Railways, Montreal, born at Havelock, Ont., Dec. 12, 1877.

J. C. O'Donnell, Superintendent, Divisions 2 and 3, Central District, Canadian Northern Ry., Winnipeg, born at Cobden, Ont., Dec. 17, 1879.

Alfred Price, General Manager, Eastern Lines, C.P.R., Montreal, born at Toronto, Dec. 6, 1861.

W. J. Radford, Assistant to General Manager, Toronto Suburban Ry., Toronto, born at Boldre, Hants, Eng., Dec. 23, 1870.

G. D. Robinson, Ocean Lines Department, British Ministry of Shipping (Canada), Montreal, born at St. John, N.B., Dec. 7, 1877.

G. E. Smart, Superintendent Car Department, Canadian Government Railways, Moncton, N.B., born at Edinburgh, Scotland, Dec. 23, 1873.

W. Tansley, Car Service Agent, New Brunswick District, C.P.R., St. John, N.B., born at Shelburne, Ont., Dec. 27, 1872.

M. F. Tompkins, Freight Agent, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Margaree, N.S., Dec. 6, 1878.

H. H. Vaughan, Consulting Engineer, C.P.R., Montreal, Vice President and General Manager, Dominion Bridge Co. and Vice President and Managing Director Dominion Copper Products Co., born at Forest Hill, Essex, Eng., Dec. 26, 1868.

R. C. Vaughan, Assistant to President, Canadian Northern Ry., Toronto, born there, Dec. 1, 1883.

A. P. Walker, Assistant Engineer, Ontario District, C.P.R., Toronto, born at West Hartlepool, Eng., Dec. 9, 1860.

E. H. Wood, Foreman, Michigan Central Rd., Kensington, Ill., born at St. John, N.B., Dec. 30, 1880.

### Canadian Ticket Agents' Association.

—The following are the officers for the current year: President, H. F. Whittier, Trenton, Ont.; Vice President, J. Rainsford, Clinton, Ont.; 2nd Vice President, J. A. McDonald, Valleyfield, Que.; 3rd Vice President, A. C. Rorabeck, North Bay, Ont.; Secretary-Treasurer, E. de la Hooke, London, Ont.; Executive Committee, W. Jackson, Clinton, Ont.; W. J. Moffatt, Toronto; C. B. Janes, Orillia, Ont.; O. M. Hare, Tilsonburg, Ont.; W. H. C. Mackay, St. John, N.B.



# Repairing Locomotive Fittings.

The tools here illustrated are a few of many similar devices used in the Southern Pacific Co.'s shops at Sacramento, Calif. Fig. 1 shows a self-feeding reamer for reclaiming worn distributing valve bushings in air-brake equipment, and fig. 2 shows all parts of the tool in detail. This tool, which is adapted for self-feeding through the work, is made up of a central body, or mandrel, B, 16 $\frac{1}{8}$  in. long and

ing nut E at the rear is 12 per inch. One complete turn of the nut therefore means the equivalent of an expansion of the reamer of 0.0277 inch.

The reamer D has 18 teeth milled to a depth of 3/16 in. and six 1/16 in. saw cuts are run through from end to end as shown. Except for a distance of 1/2 in. at the rear face the saw cuts are carried

button-head screws which pass through body-sized holes in the bronze feed nut and enter tapped holes in the steel guide nut.

In use the steel guide nut is screwed into the end of the distributing-valve casing by removing the cap plug, and this brings the feed nut into alignment with the bushing to be reamed, so that when

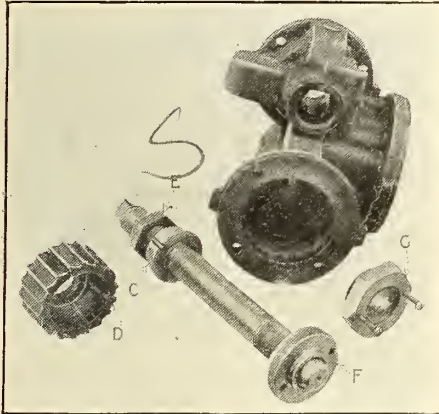


Fig. 1. A 14-in. expanding self feeding reamer.

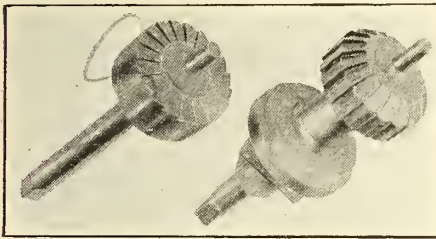


Fig. 3. Hand reamers for steam turret.

1 1/2 in. in diameter, except for the enlarged portion, which carries the reamer proper, and at the outer end is a fine thread for feeding it through a guide nut while at the rear end is a coarser thread for receiving and adjusting the nut which sets the reamer up on the taper at C.

The reamer proper is shown at D, and

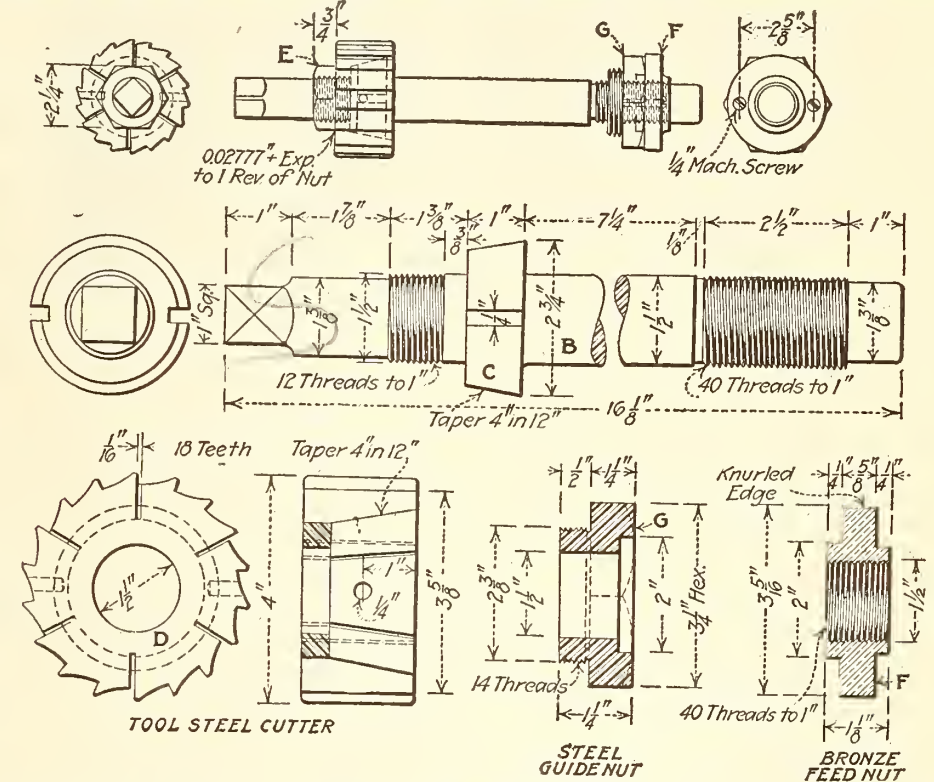


Fig. 2. The reamer members.

down to the bore, so that there is a good opportunity for the reamer to expand with close uniformity for the greater portion of its length. Midway of the face there is a 1/4-in. pin inserted to enter a groove of the same width in the conical body C, on which the device is mounted, to provide against the rotation of the tool

the reamer is run into place with its threaded inner end entered through the feed-nut thread and entered through the feed-nut thread the mandrel is correctly positioned for the passing of the reamer through the bushing. On applying a wrench to the squared end of the reamer shank the tool is drawn forward through the work at the rate of 0.025 in. per revo-

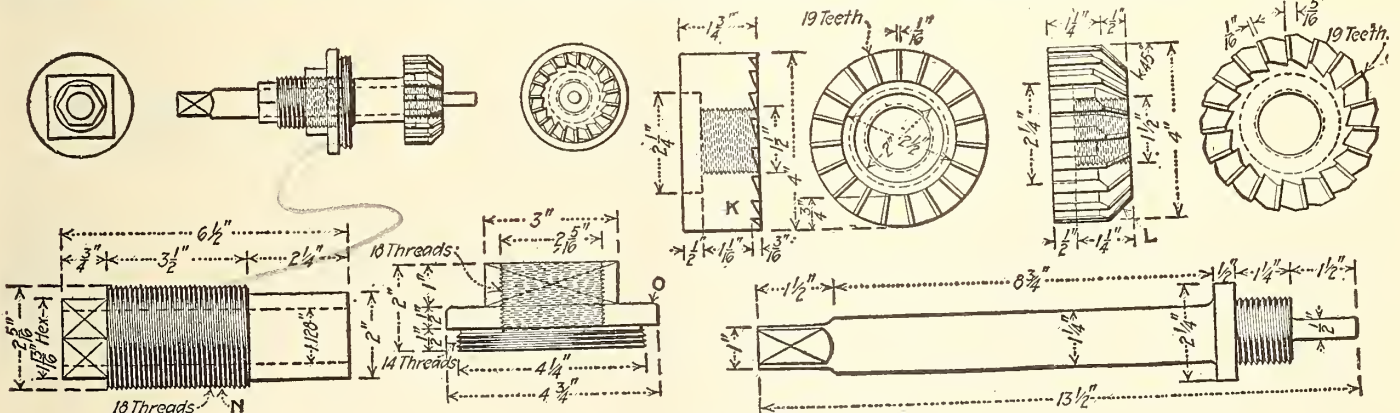


Fig. 4. Details of hand reamer for steam turret.

like all other parts of the tool it is also shown distinctly in fig. 1 in front of the distributing valve which is to be overhauled, the same reference letters being used on both illustrations for convenience in comparison.

Upon referring to fig. 2 it will be seen that the conical body C is a taper of 4 in. to the foot. The thread for the adjust-

upon its seat. Near the leading end of the mandrel B there is a fine-pitch thread (40 per inch) which receives the feed nut F. This is a bronze nut, with knurled edge, and with a shouldered face to seat in a counterbored recess in the corresponding face of the steel guide nut G when the tool is assembled. The two nuts are then secured together by two 1/4-in.

lution.

The reamer proper fits upon a reverse taper on the body, so that the expansion of the tool is obtained by the adjusting nut at the rear, against which the thrust of the reamer is taken, so that there is no tendency for the reamer to expand under the cut as might occur under certain conditions of usage if the small end of the







# Canadian Northern Railway's Annual Report, Meeting, Etc.

The C.N.R.'s annual meeting was held in Toronto, Oct. 25, when the report for the year ended June 30, 1917, was presented, over the signature of Sir Wm. Mackenzie, the former President, the financial statements being signed by D. B. Hanna, the former Third Vice President, and now President. Owing to the belated presentation of the report, much of the information contained in it is not of current interest, and therefore only brief extracts from it are given below.

The annual meeting was purely a pro forma one, and the board of directors as constituted recently, after the company's property passed into the Dominion Government's possession, was re-elected.

## Extracts from Annual Report.

The results of the operations of the system for the year were as follows:—

<b>Gross Earnings—</b>	
Passenger traffic .....	\$ 7,611,807.94
Freight traffic .....	32,188,799.93
Express, mail, telegraph, interest and profits from elevators and other subsidiary companies, investments, etc. ....	3,694,468.69
	\$43,495,076.56
<b>Working expenses (including taxes, etc.) . . . . .</b>	<b>31,349,408.18</b>
Net earnings .....	\$12,145,668.38
Interest charges .....	14,607,805.35
Net deficit .....	\$2,462,136.97

The average mileage operated throughout the year was 9,396, compared with 8,048 for the previous year; the total mileage in operation at the close of the fiscal year being 9,433.4, an increase of 137.4 over the mileage in operation June 30, 1916.

The gross earnings were \$43,495,076.56, an increase of \$8,018,801.50, or 22.6%, and the gross earnings per mile of line operated were \$4,629.11, against \$4,408.08 the previous year. Net earnings show an increase of \$2,772,137.84, or 29.57%, and net earnings per mile of line operated were \$1,292.64, compared with \$1,164.70 the previous year.

The statement of freight carried shows, with one exception, an increase in the tonnage of all commodities handled. Revenue tonnage increased by 7.887%—the average haul increased by 30.93 miles. Grain is the only commodity which shows a decrease, viz., 1,258,048 bush. less than the previous year. This is not due to any competitive loss, but from a decrease in total yield as foreshadowed in the previous year's report. As the increase in grain handled in 1916 over 1915 was 125.31%, and as the increase of 1917 over 1916 is 123.2%, and as the total tonnage of grain and flour handled in the year is greater, no anxiety is felt by your directors on this feature, especially when the increases in all other commodities are considered. The advantage of a diversified distribution of traffic is shown by the slight increase in the ton mile rate, which advanced from .679 in 1916 to .688 in 1917.

Not since 1912 has the annual commodity statement shown so many cars of immigrants handled as appeared for the fiscal year under review. European immigration is for the present discontinued and these figures represent the movement of settlers—from eastern provinces to some extent, but more largely from the United States—of the most valuable type from a traffic producing point of view, as home-seekers from these fields invariably bring to the country a large equipment, enabling them to become shippers in a comparatively short time.

Coal traffic from the Drumheller district in Alberta is showing a very satisfactory development, the returns for the last six months of the calendar year showing an increase in tonnage of 138%, the total for the six months of 1917 being 329,552 tons, compared with 137,997 tons for the same period of 1916. The coal from this section is being used in a rapidly widening field with correspondingly increasing revenue for your system.

The territories served by your western lines continue to show most promising progress in the production of live stock, including hogs and sheep. This is reflected by the substantial increases in the number of head of cattle brought over your lines to the Winnipeg market. For the last calendar year the returns of the Winnipeg market show that the Canadian Northern brought in to that market a very large proportion of the total receipts, viz.:—of cattle 42.6%, of hogs 33.4%, and of sheep 36.3%. In the same period the number of cattle brought into the Winnipeg market by the C.N.R. increased from 63,004 to 120,345.

The working expenses were 74.77% of the gross earnings of the system proper, and including taxes 72.08% of the gross earnings from all sources, compared with 74.73% and 73.58% respectively last year. The fiscal year under review was a very trying one to railway officials generally, due to the many conditions which combined to increase the working expenses of the railway. Early in the fiscal year the coal situation caused your operating officers the greatest concern. In Alberta the coal miners went on strike for three of the best production months, greatly reducing the available supply. Strikes and suspension of work by the coal miners in the Pennsylvania and other fields on which Canadian railways depend for their supply from Quebec to the midwest greatly limited the output. Many munition plants had increased their operations during the year, and were making additional demands for steam coal. The transfer of lake tonnage to the Atlantic affected the amount of coal regularly obtainable from lake ports, and it was only by the most energetic measures that a supply could be obtained. Under such conditions the price of fuel coal soared upward—not only was the initial cost increased, but all other costs, such as lake freights, cost of handling, etc., also went up, and, due to the dislocation of the supply, large expense was incurred in abnormal rail movements over the system's lines. Your company was fortunate in having unfilled contracts for coal, under which practically all their requirements were obtained, and for this reason did not have to pay the largely increased prices which were put into effect early in the calendar year. Beginning with July 1, 1917, net operating figures have been seriously disturbed on this account—not due alone to the much higher price now being paid for fuel coal, but also due to the falling off in the quality of coal obtainable. The prospect for immediate improvement in this respect is not reassuring. All other materials have been similarly affected. The cost of the principal supplies in use by the railway has increased from 50% to over 100%. A few actual increases are as follows:—

	1916.	1917.	Increase %
Coal, per ton .....	\$3.56	\$5.70	60.11
Steel rail, per ton . . .	35.00	60.00	71.43
Track spikes, per cwt..	2.50	4.50	80.00
Angle bars, per cwt...	1.65	3.50	112.12

Brass castings .....	25.50	39.15	53.50
Iron and soft steel bars	2.20	3.77	71.14
Steel and iron sheets..	2.30	3.50	52.17

Lumber and timber increased 25% and all rubber supplies about 70%. Not only were prices high, but it was in many cases often impossible to obtain the required materials at any price. Since the close of the fiscal year, the above prices have shown further increases. The cost of living also increased. This was seized upon by every class of labor employed by the railway as a ground on which to make demands for increased wages. On the top of this there developed a great shortage of unskilled labor, which was particularly felt in the maintenance of way department. Under such conditions it is remarkable that operating expenses only increased by \$5,246,663.66, or 20.10%. But, in order that there may be no misunderstanding about the matter, it is stated that due to the shortage of labor, work considered necessary and desirable could not be undertaken, and must therefore only be considered as deferred, and this situation is aggravated to the extent that from the expenditure incurred for labor due to these conditions, less value is obtained for every dollar paid out. The operating ratio, in the face of these abnormal conditions, was maintained at the same percentage as last year. Only by the exercise of the strictest supervision of operating expenses and application of the most efficient methods by our operating officials, was this made possible.

**Esquimalt & Nanaimo Ry. Land Rights.**—In 1883 the British Columbia Government transferred to the Dominion Government certain lands which were to be granted to the E. & N.R. in aid of construction. The land belt granted to the company extends along nearly half the east coast of Vancouver Island, from near Seymour Narrows to Saanich Inlet. When the Dominion Government transferred the lands, it transferred the foreshore lands and the mineral rights under them in so far as they were vested in the Dominion. In later years H. W. Treat and his associates staked out certain lands in the Chemainus District, at the mouth of the river, and obtained licenses from the B.C. Government. The E. & N.R. protested, and subsequently brought action against Treat for trespass. This action was dismissed by Justice Clement, and the company took the case to the Court of Appeal, which gave judgment, Nov. 5, against the company. There are a number of other persons who have staked claims along the foreshore within the E. & N.R. land areas, who will be affected by the decision.

**E. G. Evans,** formerly General Manager, Moncton & Buctouche Ry., which has been taken over and is being operated as a part of the Canadian Government Railways system, and who is now Division Engineer, C.G.R. at Moncton, N.B., writes: "I certainly must congratulate you on the wonderful progress which has developed, both as regards the matter, information and general make up of the Canadian Railway and Marine World, to which I have been a subscriber for several years."

**Canadian Northern Railway Executive Committee.**—At the C.N.R.'s annual meeting in Toronto recently, an executive committee was appointed, consisting of all the directors, and the quorum was fixed at four.



# The Chippewa-Queenston Power Canal and Construction Railway.

Digging partly in fine, wet clay sand, productive of dangerous slides when undrained, and partly in very stable red clay, what are said to be the two largest electric revolving shovels in the world are stripping the site of the Queenston-Chippewa Canal, most of the flow section of which will be in rock. The canal, which will take water from the Niagara River above the Falls, through the Welland River, locally known as Chippewa Creek, and deliver it to a 300,000 h.p. power plant below the last rapids, is part of a project to develop 305 ft. net head of the 327 ft. difference in level between Lakes Erie and Ontario. The work is being pushed during the war by the Hydro-Electric Power Commission of Ontario, as a conservation measure, made urgent by the great shortage of power, both steam and electric, in the territory served by power from Niagara Falls, and by the fact that none of the plans now in operation at the falls can be made to develop more than two thirds of the total available head, while the treaty limit of possible diversion from the falls has been nearly reached, making it necessary to utilize the small surplus of available water under the maximum head which physical conditions will permit.

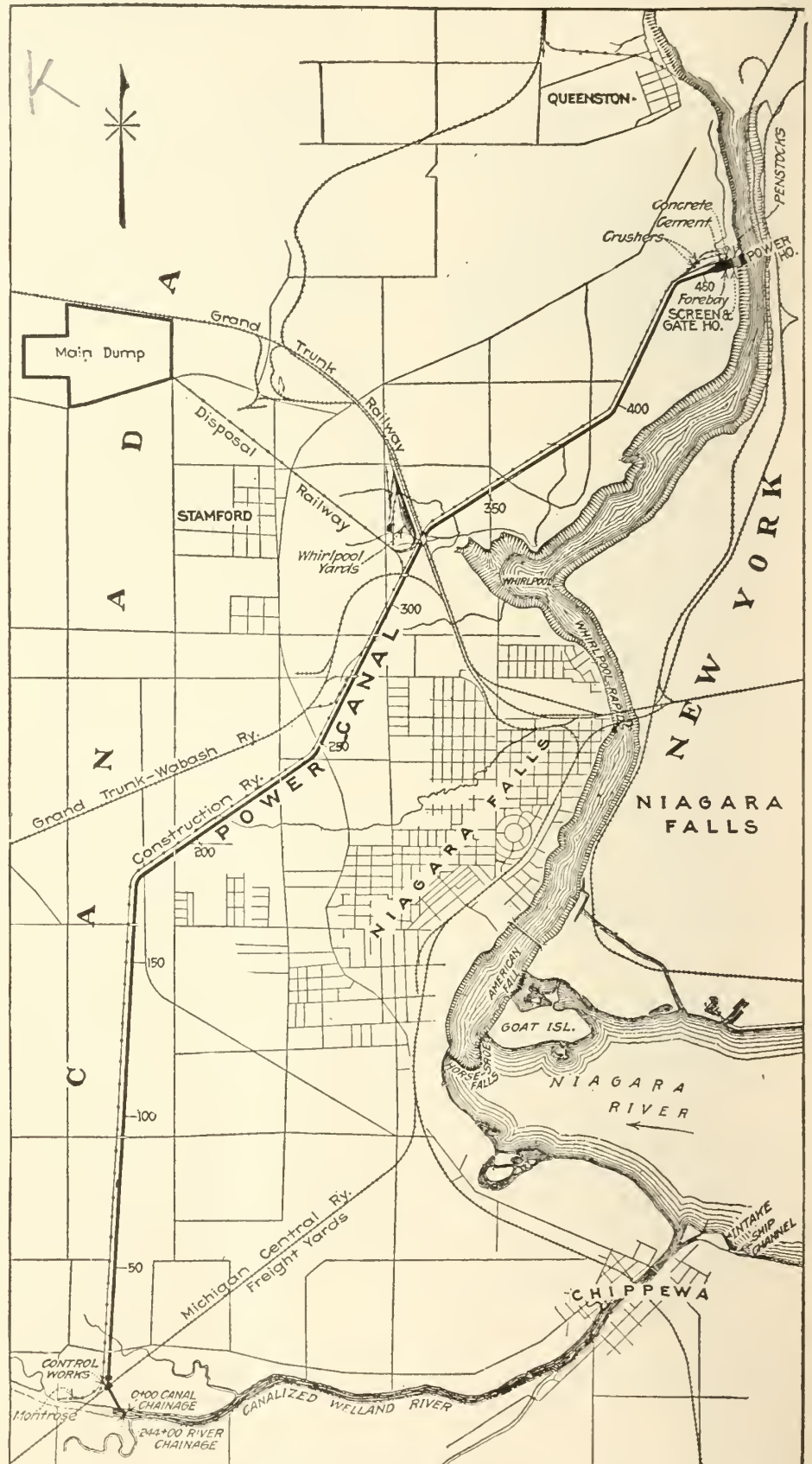
The construction, which is being carried on by the commission's forces, involves the removal, from the Welland River and the artificial section of the canal, of 13,000,000 yd. of earth, which is being taken out by cableway and dredge on the river section and by the big shovels in the dry cut, and 4,000,000 yd. of rock from the canal and forebay, to be removed by the big shovels and by standard railway shovels. In addition to the power house and the gatehouse, 10 concrete arch bridges, 3 of them carrying railways, and a reinforced concrete intake structure requiring extensive cofferdam work in the Niagara River, are among the structures required.

The dredged river channel, with a gradient of 0.63 ft. to the mile and a mean velocity of 2.0 ft. per second, and the canal, with a gradient of 1.1 ft. to the mile and an estimated velocity of 6 to 7 ft. per second, will pass 10,000 sec.-ft. of water. The power house will contain six 52,500 h.p. units, and the site itself, as well as the scheme as a whole, is capable of being expanded, by the provision of additional waterways and power house space, to take the entire quantity of water that can be diverted under the present treaty on the Canadian side, amounting to slightly more than 1,000,000 h.p. capacity.

Drawing water from Grass Island pool, after a slight fall from Lake Erie, and delivering it back into the Niagara River below the last rapids at a point where the fall to Lake Ontario is but little more than a foot, the general scheme of development is thought to be by far the most favorable of any yet conceived, and will cost, complete, about \$25,000,000. The time of completion is conditioned by the excavation, on account of the heavy yardage involved, and the opening up of the work and the method of attack with large shovels was dictated by the character of the overburden, which could not be depended upon to support heavy, concentrated loads. The nature of the soil, which contains a considerable quantity of ground water and is so fine in places as to have the appearance of clay, made the use of large draglines, operating from the

tops of the slopes, out of the question. For the same reason it was desirable to carry the heavy excavating equipment right through on the rock surface, to avoid the continuous trouble with soft ground. This required shovels with a

great reach, cars on a track 64 ft. above the rock surface having to be loaded at several points. Very large revolving shovels were therefore selected for the work. One has a 90-ft. boom set at 53 deg., with a 58-ft. dipper stick and a 5-yd.



Power Canal and Construction Railway, from Welland River to Niagara Gorge below Rapids.



dipper. Another has an 80-ft. boom set at 45 deg., a 54-ft. dipper stick and an 8-yd. dipper. A third shovel, similar to the second, will soon be installed. After the earth is stripped and the three shovels are put on the rock excavation, all will be equipped with 5-yd. dippers.

The cut is made by starting a pilot near one side of the canal prism with a railway shovel, loading cars on the ground surface. In this cut are run the loading tracks for the big shovel, which follows the pilot cut on the rock surface. The loading tracks connect with the main line at both ends, giving the shovels run-around service. With 20-yd. air-dump cars in eight and ten-car trains, the big shovels have been able to load 4,000 yd. in an eight-hour day.

The entire line of the canal is to be paralleled by a double track standard gauge electric trolley railway 175 ft. west of its center line. Near the middle of the work is a Y from which a double track railway runs 2 miles to the main dump, which is capable of taking 20,000,000 yd. The hauling equipment consists of one hundred and fifty 20-yd. air-dump cars, twelve 600-volt direct-current 50-ton electric locomotives, and 7 steam locomotives. The maximum grade on the construction railway, which, when complete, will contain 40 miles of single track, is 1%, and the haulage equipment is capable of making 10 miles loaded and 20 miles light with 10-car trains at any point on the line.

The trolley wires are offset 7 ft. from the center line of the tracks to permit the loading of dump cars, and in order to pass locomotive cranes, of which there are three 40-ton and two 15-ton machines on the work.

The order in which the work was opened up was dictated both by the length of time required for the excavation and by the location of 3 existing railroad crossings. Two of these are close together, as may be seen from the map, a short distance south of the Whirlpool Gulch, a deep cut which it is believed was once the bed of the Niagara River. Just south of this gulch occurs the heaviest earth cut on the canal, a face of 100 ft. being encountered here for a short distance. The shovel that started in at the south face of this gulch has a 5-yd. dipper rigged to load cars on tracks 64 ft. above grade. It was possible to dispose of the excavation from this shovel to the extent of 1,500,000 yd. in the Whirlpool Gulch itself, making it unnecessary to cross a main-line railway in order to get to the central dump. Since the short section between the Grand Trunk Ry. crossing and the next crossing south was the location for the Y leading off to the main dump, and since it could therefore be excavated before the railway crossings were constructed, this point was selected for starting the other large shovel. With the excavation begun in this way, both shovels could be kept busy while the first bridge was being built. The construction railway will pass under these railway bridges, and sufficient clearance is provided for the large shovels by taking down the booms. The southerly shovel will be let out in this way and will proceed south, following the construction railway and the pilot cut for the loading tracks, until the overburden is completely stripped; being helped, in all probability, by the third shovel when it arrives. The loading tracks will then be lowered to the rock surface, a pilot cut will be made by the railway shovels, as in the earth section, and the shovel now operating at the Whirlpool Gulch will follow through, tak-

ing out the rock cut to grade. The other shovels will, on the completion of the earth excavation, turn north to meet it.

North of the Whirlpool Gulch the cut is almost entirely in rock, and there is a large forebay, approximately 300 by 1,000 ft., to be excavated. This rock will be removed by the railway shovels, of which there are two of 3½-yd. and one of 2½-yd. capacity. There are also two ¾-yd. caterpillar revolving shovels on the work.

The forebay excavation was begun when the two large shovels were started, in order to provide rock for track ballast and for concreting. As the heavy end of the rock excavation is near the forebay, and as little stripping had to be done, the main crusher plant was located here. The rock, which is Niagara limestone, will be used as aggregate for all the concrete. A concrete plant located at the lip of the gorge above the power house will be able to concrete the head house and power house by gravity. As these structures will not take more than 18 months to build, it has not been necessary to start them yet, and no work beyond the clearing of the building site has been undertaken at this point.

The remaining portion of the work, the dredging of the Welland River, is being carried on simultaneously by a 3-yd. dipper dredge and a large cableway operating a clamshell bucket. On account of bridges, houses and rough ground, the cableway was not able to start within 4,400 ft. of the intake, and the work between that point and the Niagara River will be done by the dredge, the material being scowed into the Niagara River. The cableway has an 80-ft. head tower and a 60-ft. tail tower, both travelling on railway trucks on parallel double tracks. The span is 800 ft., and the rig handles a 3-yd. clam. The head tower on the north bank of the river is set far enough back so that all the excavated material can be disposed of by dumping it on that bank. The total cut in the Welland River is to a depth of 30 ft. below the surface, but at 24 ft. below the surface a limited deposit of quicksand has been struck, which cannot be dug with any type of grab bucket yet tried on the cableway. It will probably be necessary to remove this quicksand with a dipper dredge.

As might be expected, the early construction of the railway bridges is essential to the prosecution of the excavation. The first started is the center one. This bridge will let the southern shovel out, and by the time it is finished there will still be sufficient time to construct the Grand Trunk crossing before the second shovel will be ready to come through with the rock cut.

To build these bridges, holes had to be dug in the ground, and steel sheet piling used for cofferdams. As shown in one of the photographs, the crown of the arch in the first bridge built is below the ground surface. This bridge is for the Niagara, St. Catharines & Toronto Ry. (electric), but the loading specified by the electric railway company was as heavy as that for either of the steam railway bridges.

The railway bridges each contain about 3,500 yd. of concrete, each being a single arch. This excludes the wing walls, which will not be placed until the canal excavation has been completed. Because the bridges are built below the original ground surface, the concreting proved easy. It was only necessary to set up a mixer with a loading hopper on the edge of the excavation and spout the concrete directly to place in the forms. The mixer at the first of these bridges was served

by a locomotive crane, material being received on a spur from the Grand Trunk Ry. The excavation was carried out with two derricks, the material being dumped around the cofferdam.

The first rock excavation available was at the lower end. The forebay excavation was begun by shooting out a 10-ft. lift over the entire area, about 1,100 holes being fired at once. About one pound of dynamite to the yard, including that used for springing the holes, was used. Each hole was sprung with 5 or 6 sticks and loaded with 15 or 20 sticks, the spacing being 7 ft. each way. Several experiments with blasting caps wired up in various ways were tried in an adjacent open field, to make sure that the loaded holes would be fired simultaneously. The firing was done with a high-amperage but low-voltage current thrown with a single switch. As a result of this blast, about 60,000 yd. was broken fine enough to be handled by the railroad shovels.

The crusher plant near the forebay receives material by rail in the 20-yd. dump cars. These discharge direct into a large hopper lined with 2½ x 6 in. steel bars laid flat, and feed a 60 x 84 in. jaw crusher operated by a 250 h.p. motor. This crusher reduces the stone to 8 in. size and delivers it to a belt which takes it to the top of the secondary crusher house, where it is fed into 3 gyratory crushers that reduce it to 2 in. size. From these crushers the material passes through a screen which removes dust and oversize aggregate, and is then carried on a suspended belt conveyor over the storage pile. At the end of the storage pile is the bin structure for the receipt of 1 in. stone to be used for reinforced concrete work. The 1 in. material is obtained by bypassing the oversize aggregate, after it leaves the screen, into a small auxiliary gyratory crusher, which delivers its product directly into the bin mentioned above. Under the storage pile is a gallery containing another conveyor for delivering stone to the concrete plant, which it is planned to build as shown in the layout drawing.

The rock-excitation work on the canal itself is carried out in such a way as to produce smooth sides and secure the maximum flow. It is the intention to channel the rock down to the water line in advance of blasting, and to break the rock back below this face so as to allow for a 6 in. lining of concrete throughout the entire flow section. There are 15 duplex channelers cutting to a depth of 20 ft. at one operation on the work, most of them being at present employed around the forebay. The channelers and the tripod drills are operated by compressed air delivered by a 10 in. pipe.

There will be 12 motor-driven compressor units, having a total capacity of 12,000 ft. per minute, on the work. A capacity of 8,000 ft. is concentrated at the Whirlpool station in the center of the work now in progress, and the other 4,000 ft. is located at Montrose station at the southern end of the line. Six of these machines are now in operation at the first mentioned station, where one of the main transformer substations for the work is also situated. After-coolers are used on the compressors, and it has not been necessary to employ reheaters, although these may be resorted to in cold weather. At present the loss of pressure in delivery from the central station to the drills is about 3 lb. per sq. in., the drills taking air at a little more than 100 lb.

Because plenty of electric power was available, and because shipments of coal are becoming more and more difficult to



obtain promptly, electric power was used wherever possible on the work. As stated, the haulage equipment uses 600 volt direct current, transformed by rotary converters at the central stations. The other equipment uses 440 volt alternating current, the lines to the two large electric shovels carrying current at 4,000 volts to transformers on the shovels themselves. For the smaller plant units the current is stepped down before being delivered to the machine.

For organization purposes, the work,

which is being done entirely by the Hydro-Electric Power Commission's forces, has been divided into four sections. The first of these includes the deepening of the Welland River. The second is the portion of the main canal from station 0 to station 235, the third is the other half of the main canal from station 235 to the forebay, and the fourth section includes the power house, gatehouse and the forebay itself. Sir Adam Beck is chairman of the commission, for which F. A. Gaby is Chief Engineer, H. G. Acres Hydraulic

Engineer, T. H. Hogg Assistant Hydraulic Engineer and M. V. Sauer Designing Engineer. The work is in charge of J. B. Goodwin, Works Engineer, under whom G. H. Angell is General Superintendent and A. C. D. Blanchard Field Engineer. F. W. Clark is Assistant Field Engineer, R. T. Gent Plant Engineer, and William Snaith Office Engineer. C. F. Whitney is resident engineer on Divisions 1 and 2, George Lowry on division 3, and W. S. Orr on division 4.—Engineering News-Record.

## The Business Box Car.

By W. J. Bohan, Mechanical Engineer, Northern Pacific Railway.

I will begin this paper with a specific definition of a railway. A railway, definition in some quarters to the contrary notwithstanding, is an institution of public necessity, founded, maintained and operated for the purpose of efficiently conducting transportation to the satisfaction of its patrons in such a manner that the physical qualities of the property and equipment may amply meet the imposed demands and a fair dividend on the investment be realized.

One of the principal factors necessary to the conducting of transportation is box cars. An impression of the importance of box cars as they affect dividends can be gained from the following facts: A total of 261,100 box cars were owned and operated by eight leading western and northwestern railways in the U.S. during the last year, or an average per road of approximately 32,600. The total number of box cars represents 50.7% of the total freight cars owned by the roads. These box cars may fairly be said to represent an original investment of \$210,000,000.

The total average cost of repairs per road per year for a 4-year period for all classes of cars on the roads was \$3,481,000. The average cost of repairs per car per year was \$64.00. The minimum cost per car per year for one of the roads was \$41.00. The maximum cost per car per year for one of the roads was \$110.00, a difference between minimum and maximum cost per car per year of \$69.00,—\$5.00 more than the average cost of repairs per car per year for all the roads mentioned. The character of transportation on each of these roads is the same, and the ratio of the number of box cars to the total number of freight cars of all classes is closely approximate, and it is fair to assume for the purpose of this paper that the above repair cost ratios for the different roads would obtain for box cars.

The claims paid for losses due to grain leakage by a large grain carrying line of the same group of roads for four years ending in 1917, averaged \$80,000 a year, grain being carried in both owned and foreign cars. The average damage claims paid per year on account of defective equipment on all commodities other than grain for the same period was \$17,000. A stockholder of an enquiring turn of mind, the chief operating official, or the president of one of these railways, invariably of an enquiring turn of mind where earnings are concerned, in view of the high loss and damage costs and wide difference in repair figures, would be justified in asking, "What is the matter?" Several things are the matter, and one of them is undoubtedly lack of business balance in car construction—box car construction—that being the type of car under consideration.

Years of mental and physical energy have been spent on box car design by the best and most loyal of men, both technical and practical, as volumes of records of the M. C. B. Association and technical periodicals will bear testimony of; and a generally satisfactory box car is not yet with us. Have we kept it back by a flux of figures on stresses and strains, lacking the leaven of sound engineering judgment? Have we delayed its coming by building upon too narrow conceptions of the problem, likened to the opinions of the six blind men of Hindustan regarding the physical make up of the elephant? Have we co-operated with each other sufficiently in treating a large subject in a large way, by exerting our energies toward a broad and careful analysis of the subject, with full realization that box cars are business agents of the railways that own them, and that their dividend earning capacity depends upon their commercial efficiency as well as upon their mechanical details, and that the two qualifications are correlated? The fact that we have not the generally satisfactory box car indicates at least that the progress of its development has been slow. The time has arrived when we must develop an efficient box car in its fullest sense. Stress of times, public opinion, unusual volume of business of many varieties, shortage of equipment, scarcity of labor and material with constantly upward trend in prices of both, demand it.

What have we to offer in the way of a business box car? The business box car must be free from leakage of lading, weather proof and practically fire proof, have a so-called non-sweating interior free from projections and pockets, be easily accessible, have properly dimensioned door openings and substantial free positive functioning doors and fastenings, and so constructed as to lend itself to diversified lading, with incident supplementary doors, blocking, etc. In short, a car popular with the shipper,—a dividend earning unit having a maximum demand. It must, in addition to these qualities, have a minimum light weight, a maximum utility and carrying capacity per unit of weight, reasonable first cost, and freedom from the repair track.

Two principal elements enter into the design and construction of such a car. First, accurate technical engineering information, and second, sound, practical business judgment based upon experience, the latter largely predominating, for the reason that evidence is lacking to date that anyone ever reduced the things that happen to a box car to conclusive figures. There are some examples of car construction in operation in this country today that create the impression that cars are sometimes figured to death. I do not

wish to belittle either figures or figurers, but I do wish to say that figures are very valuable material, and even figurers should use them carefully.

In a recent article in one of the railway periodicals, a statement in substance is made that in train service the car body has three movements, all of which absorb a part of the force applied at couplers. This is true as far as it goes, and if this were all, figuring would be comparatively easy. It, however, stops where the real trouble begins. The fact of the matter is that the box car is subject, not only to these three forces, but to the resultant of their combined action and many others of such varying direction, intensity and rapidity of occurrence that their accurate mathematical determination is out of the question. Among these forces may be mentioned those due to poorly balanced design, unevenness of track, curvature, centrifugal force, train handling, draft action, irregular lading, shifting of lading, atmospheric conditions, etc.

Briefly, all of these forces combine in what may be called "team work" against the life of the box car. Close observation and experience with a large number of different types of box cars indicate that the general and greatest result of this team work manifests itself in twisting the car. Such being the case, team work in an opposite direction by the various members of the car must be the natural antidote. I believe the most economically efficient box car to be one in which every detail, even the grab irons, is made to do its fair share in assisting the natural functions of the car and resisting the stress and abuse to which it is exposed. The body of such a car should not be built around any one member, but all of its members should form a unit, having maximum inherent strength and resilience, and acting as a unit in dissipating all reasonable strain action. It should have the fewest possible primary and special parts, so that joints, gussets, rivets, bolts and fastenings which work and wear to the detriment of the car, increase its cost of upkeep and loss of time on repair tracks, may be reduced to a minimum.

A general specification for a car that would meet the requirements outlined would be briefly as follows: The weight for say a 40 ft., 40 ton box car should be between 45 and 50% of the stencilled capacity. I should say it should not exceed 48%. This weight can be obtained without sacrifice of strength.

In connection with the matter of efficient weight: The electric motor builder designs a standard motor to handle 25% overload rating for 2 hours without abnormal stress. This rating is the result of careful engineering and experience in all the electrical, mechanical and commer-



cial phases of electric motors. There seems to be no reason why box car design should not be determined upon the same relative basis. It is, of course, to be understood that a 25% overload rating is not the correct rating for a box car. I have never believed that a railway could earn as much money hauling 25 tons of tare per unit of revenue producing load, as it could by hauling 20 tons of tare per the same unit of revenue producing load.

The body should be steel frame throughout, preferably pressed steel of resilient quality. The underframe, sides, ends and roof should be diagonally braced throughout. There is no question about the efficiency of diagonal bracing. Its value has been many times demonstrated in the reclamation of thousands of old cars. As the diagonal bracing of the entire construction, as previously mentioned, will distribute the strains due to live load and shocks to all members of the car, the fish belly type of center construction is not necessary. Ten inch center sills of ordinary cross section are sufficient.

Side and end posts and braces at the points of attachment with sills and plates, underframe bracing at the points of attachment with center and side sills, and roof bracing at the points of attachment with ridge pole and plates, should be directly connected, i.e., the usual construction using gusset plates or other secondary members should be eliminated, as the strength and efficiency of the car can be materially increased by so doing, and unnecessary parts eliminated. Auto-genous (electric or oxyacetylene) welding may be used to material advantage in such a construction.

Diagonal underframe bracing at the ends should be securely tied to both center and end sills at their junction, and extend continuously around the ends of the body bolster and cross ties, with alternate connections to center and side sills. The same general construction may be followed in the roof for the attachments of diagonal bracing and plates, ridge pole and door carlines. At the door openings, underframe should be substantially reinforced by supplementary diagonal bracing. The plate may be similarly reinforced above the door, or the door track constructed to form the reinforcement. The roof reinforcement at the door openings may be made by the use of carlines at the door posts. The end construction, with its attachments to end sills and plates, is similar to the side construction.

The corner posts should be formed by directly connecting the end side post and side end post members throughout their entire length. This will not only tie the car together securely, but it will materially assist in forming an integral construction. The corners may be further reinforced by continuous corner and end grab irons.

Side and end sheathing should be constructed of 2 sections of sheet steel, their junction reinforced by plates, and all securely riveted together, forming side and end girths, the girth reinforcing plate extending continuously from side door post to side door post around the end of the car. End and side lining should be of matched lumber, sides  $\frac{3}{4}$  in. or 13/16 in., ends 1  $\frac{1}{4}$  in., the lining extending from floor to plates. The floor may be of the usual 1  $\frac{1}{4}$  in. matched stock secured to furring of underframe, using standard grain strips at intersections of floor and sheathing.

The roof should be of the circular type and may be constructed of 2 sheets of no.

16 steel, running lengthwise of the car, with joint at ridge pole, the 2 roof sheets being securely riveted between the ridge-pole and a weather proof ridge-pole cap. The roof sheets should also be securely riveted to the diagonal braces, end and side plates, thus forming an integral member of the car capable of sustaining its share of the load. It is necessary that the inside of the roof be what is commonly called "non-sweating." This can be taken care of by the application of a heavy coat of ground cork and red lead or mineral paint applied to exposed metal surfaces.

The door should be of steel, framed and sheathed similar to the body of the car, and mounted with weather-proof shields at posts and plates.

The truck should, like the body, have as few parts as possible and be preferably of the cast steel type.

Particular attention should be given the brake beam mounting, to ensure even brake shoe wear and proper alignment of levers and rods. All of these points are of extreme importance, not only in that they may perform their special functions properly, but that irregular transmission of stresses to the car itself be avoided as far as possible.

Brake equipment of standard makes is quite satisfactory. Special attention, usually lacking, to secure proper application and alignment of parts, is absolutely necessary to obtain safe and efficient results.

Draft gear should be of the friction type, having a minimum recoil action, which should be just sufficient to readjust the parts in release. Travel should be approximately 4 in. The shock dissipating capacity should be the maximum obtainable with prescribed travel and standard clearance conditions. The draft lug fastenings should approach strength sufficient to resist maximum shocks regardless of draft gear capacity.

The holes in framing should be die punched to templets. All rivets and bolts should be of the best quality obtainable and of full cross section. Bolts should have properly proportioned heads and clean cut and accurate threads to provide for wrench fit of nuts. Nuts should also be of best quality and manufacture. Application of both rivets and bolts should be made without drifting, rivets having full and concentric heads and driven at proper temperature. Double nuts, lock nuts, cotters and split keys, where used, should be given special attention. I consider a good design of nut lock superior to a cotter or split key, on account of extreme difficulty in getting proper application of cotters or split keys. No one little thing is a source of more trouble on a car than loose nuts.

Too much stress cannot be placed upon the importance of more careful practical engineering study of both general and detail design to secure a well balanced, resilient car unit. Some manufacturers have done a great deal of excellent work in this direction, on underframes, but have not, in my opinion, extended the resilient features far enough, as there is no reason why it should not extend to the entire superstructure. Particular attention should also be given to the selection and assembly of the best material obtainable.

In conclusion, it must always be borne in mind that the most efficient business box car is one so constructed and assembled that it will afford a maximum resistance to the development of chronic conditions arising from general and not maximum service stress. Such a car rea-

sonably maintained will have the physical strength to take care of reasonable maximum stress and at the same time represent a minimum first cost and up-keep, and be commercially efficient.

The foregoing paper was read before the Western Railway Club in Chicago.

### Sound Advice to Railway Men.

G. A. Hoag, Superintendent, Canadian Northern Ry., Capreol, Ont., issued the following bulletin recently:—

As a railway man, have you the gambling microbe? What has it done for you? Any good? Any harm? Stop and think! This microbe is like all other microbes, making use of every moment, increasing, spreading; spreading at an alarming rate when once it gets a start on you or me, and we have not backbone enough to see the red flag ahead and answer its call. Stop again and think of how many accidents this microbe has caused. If we only knew the trouble it has caused. How? By some one employe not taking his proper rest before starting out on a run, etc. If you have this microbe, flag it; flag it quick, before it is too late, and results in some accident, the cause of which never comes out (although such knowledge many a man carries under his smock and jeans). Do you want to have that weight to carry around all your life? Gambling, poker playing, etc., are some of the surerest methods of keeping men poor, keeping them down, causing them to be morose. They lead to other crimes and ruin many a clever man's career. Wise men do not gamble. Are you unwise?

Railway life may be, and is, a little rough. Are you trying to iron out the rough spots? Are you trying to help the other fellow? Is there the need of the rough, foul language we hear spoken so thoughtlessly, not perhaps before our own families, but often heard by the other man's wife and child? By the way, do we look at it the same as if our own heard such language? Or perhaps it makes no difference who hears the words thus thoughtlessly spoken. This is a weakness, and is so looked upon by the strongest men. Can you afford to let your weakness get the better of you, or can you flag this weakness in yourself? Will you try it? Strong men are usually simple of speech. Profanity drives the better away and draws the lower to you.

How many men are honest all the time; honest with themselves; honest with the other fellow; honest with themselves as to their health; in their habits; honest with their mates and their fellow men at all times and in all things. How many of us are willing and sometimes anxious to get something for nothing? This again perhaps thoughtlessly; but is it fair? Is it honest, after all?

These are little notes which I hope will be taken as they are meant. Just a few facts to think over and to help us to help each other. Try them. Think them over. Ask yourself if they fit in anywhere. If they do, and you improve by them, you are the winner. Do not let the red flag fade!

Carriage of mails by railways.—The Board of Railway Commissioners gave notice of a sitting in Ottawa for Nov. 19 to hear the application of the C.P.R. and G.T.R., on behalf of those and other railways, asking that the board fix fair and reasonable rates for the carriage of mails, but at the Post Office Department's request the hearing was postponed to a date to be fixed by the board.



# Central Vermont Railway Co's Annual Report.

Following are extracts from the report for the year ended Dec. 31, 1917.

Gross receipts ..... \$4,816,577.55  
Operating expenses ..... 4,022,047.46

Balance ..... \$ 794,530.09  
Taxes ..... 207,009.15

..... \$ 587,520.94  
Net debit from rentals, etc. .... 73,066.04

..... \$ 514,454.90

Hire of equipment .....  
Credit balance ..... 11,712.69

..... \$ 526,167.59

Interest on securities held by company ..... 50,386.61

..... \$ 576,554.20

Fixed charges ..... \$ 731,283.34

Net result, deficit ..... \$ 154,729.14

## Train Mileage.

	1917.	1916.
Freight . . . . .	861,219	1,054,674
Passenger . . . . .	1,074,207	1,117,924
Mixed . . . . .	88,914	95,129
Special . . . . .	2,171	2,941

Total revenue miles .... 2,026,511 2,261,668

Non revenue ..... 44,153 32,439

Total . . . . . 2,070,664 2,294,107

## Car Mileage.

Passenger 4,888,464 Decrease from 1916 88,277

Freight.. 22,246,918 Decrease from 1916 5,828,477

The percentage of expenses to earnings was 83.50 % as compared with 72.20% in the preceding year.

**Traffic.**—The number of tons carried one mile was 267,482,693, a decrease of 59,308,745; the earnings per freight train mile were \$3.49, an increase of 43c, and the earnings per ton mile 1.20c, an increase of 0.19c.

The number of passengers carried one mile, 41,165,036, shows a decrease of 1,691,179; the earnings per passenger train mile \$1.27, an increase of 9c, and the earnings per passenger per mile 2.60c, an increase of 0.12c.

## Maintenance of Way and Structures.

On the First District 4.5 miles of new 80 lb. open hearth rail have been laid between Evarts, Vermont, and White River Jct., Vt., and 8.1 miles have been laid with relaying 80 lb. rail, replacing lighter weight rail. On the Third District 26.4 miles new 80 lb. open hearth rail have been laid as follows—15.3 miles between White River Jct. and South Roy-alton, 4.7 miles between Essex Jct. and Burlington, and 1.9 miles between Oak-land, Vermont and Georgia, 7.3 miles re-laying 80 lb. rail have been laid relieving lighter weight rail.

Industrial tracks to extent of 8,132 ft. have been constructed, and 4,635 ft. additional yard tracks have been built.

Three grade crossings at Montpelier have been eliminated by an overpass, and new highway and a grade crossing in Willington, Conn., has been discon-tinued.

A building has been constructed at St. Albans for accommodation of U. S. Im-migration Department, and for a part of our audit department staff. A new com-bination freight and passenger station was erected at Riverton to replace struc-ture destroyed by fire. A 3,000 ton ca-pacity ice house was built at St. Albans to store sufficient ice to meet the increas-ed requirement.

New modern 150-ton, dead-rail, track scales have been installed at Palmer, Brattleboro and White River Jct.

New steel bridges have been erected at Three Rivers, Montague, Millers Falls, Gill and Milton. Bridge 21, Williams-town, a trestle structure, was rebuilt

with steel and 7 trestle bridges, aggre-gating 309 ft. in length, have been re-newed. Sixteen other bridges received extensive repairs.

## Maintenance of Way and Equipment.

During the past 18 months there were purchased and put in service one 10-wheel superheated passenger locomotive of our 218 type, and 6 consolidation su-perheated freight locomotives of modern design—these locomotives weighing 192,-000 lbs. on drivers and having a tractive power of 49,500 lbs., have given extreme-ly satisfactory service, both as to their

	1914	1915	1916	1917
Tons one mile .....	314,478,346	292,446,458	326,791,438	267,482,693
Tons per train mile .....	226.91	250.58	277.30	278.33
Tons per loaded car mile .....	14.44	14.05	14.64	15.51
Miles .....	3,242,225	2,919,557	2,970,898	2,720,960
Freight earnings .....	2,981,316.28	2,898,881.44	3,290,654.75	3,214,417.38
Passenger earnings .....	1,072,912.07	1,008,427.42	1,063,403.53	1,069,747.79
Total earnings .....	4,372,765.42	4,260,598.53	4,811,329.64	4,816,577.55
Car miles loaded .....	21,771,265	20,814,804	22,324,264	17,251,131
Car miles empty .....	8,664,276	8,293,951	7,512,920	6,226,981

hauling capacity and as to economical operation. In continuing the work indi-cated last year, 3 more compound con-solidation locomotives of the 400 class have been converted to simple super-heated locomotives with highly satisfac-tory results. Ninety locomotives have re-ceived heavy repairs and 202 light re-pairs. The benefits derived from the improved condition of our motive power have been clearly demonstrated. The past winter is reputed to have been the worst in history and notwithstanding the severe strain on the locomotives during that season, we have been enabled to handle the heaviest business on record this spring without delay.

During the period covered by the re-port 2 new steel mail cars were pur-chased. In St. Albans shops 6 steel under-frame milk cars, 11 box cars and 2 snow ploughs were constructed, 167 freight cars had steel draft equipment applied and metal roofs were placed on 219 cars.

**Operating Results, Etc.**—In Decem-ber, 1917, the U. S. Government took over the operation of the railways and your company has been under govern-ment direction since that time. Although a tentative operating contract has been submitted, nothing definite has been agreed upon. When the time arrives it will be necessary to act, and a resolution will be submitted to this meeting giving the board authority in the premises, and appointing such officer as you may designate to negotiate and execute the con-tract on behalf of this company. Under the terms of the proclamation the Gov-ernment takes over "each and every sys-tem of transportation, and the appur-tenances thereof located wholly or in part within the boundaries of the con-tinental U. S." Whether it is the pur-pose of the government to include the roads owned and operated by this com-pany in Canada is yet to be determined.

During 1917 application was made to the Central Vermont Transportation Co., a subsidiary of your company, for the sale by the transportation company of the steamships Manhattan and Narra-gansett, which were originally built to run between Providence and New York. Negotiations following this application were terminated when on Jan. 1, 1918, the U.S. Shipping Board commandeered the boats for the government. Hearings have been had before the Shipping Board

to determine the compensation therefor, but no conclusion has been reached. Claim was made by the company that it should be allowed the original purchase price, plus the cost to date, amounting for both boats to \$1,638,252.08. It is ex-pected that a definite order will be made in the near future. There was outstand-ing against the boats at the time they were commandeered, a first mortgage ob-ligation of \$450,000.

The report of operation of the com-pany for 1917 shows a deficit of \$154,-729.14 after paying fixed charges. This

is due to increased cost of labor, coal and material. The increase in the items of either wages or coal alone would more than account for the deficit. It will be interesting in this connection to study the subjoined statement showing a com-parison of operating data for 1914, 1915, 1916 and 1917, from which it appears that while the total revenue for the past two years was substantially the same the locomotive miles decreased 250,000 miles; the loaded car miles decreased 5,073,133 miles, and the empty car miles decreased 1,285,939 miles, showing the efficiency of the road has been maintain-ed and increased, and that under normal conditions the property would have shown an exceedingly handsome profit.

## Quebec Central Railway's Annual Report.

The Q.C. Ry.'s report for the year end-ed June 30, 1917, gives the following re-sults.

Revenue ..... \$1,926,403.79  
Operating expenses ..... 1,424,558.62

Net revenue ..... 501,845.17  
Other income ..... 5,500.53

Interest on debenture stock and mort-gage bonds ..... 257,560.94

..... \$249,784.76

Surplus income balance from 1917.. \$87,544.99

Balance net revenue account ..... 249,784.76

..... \$337,329.75

Dividend on share capital ..... 169,080.16

Balance ..... \$168,249.59

Appropriation for additional

equipment, betterments and

improvements to property..\$30,000

Transfers to reserve contin-

gent fund ..... 50,000 80,000.00

..... \$88,249.59

The company's property was leased to the C.P.R., Oct. 2, 1912, for 999 years, at a guaranteed rental based on the in-terest on the outstanding 1st, 2nd and 3rd mortgage bonds, and 4% dividend on the outstanding stock for 5 years from July 1, 1912, and 5% afterwards.

The officers and directors for the cur-rent year are: Grant Hall, Montreal, Pre-sident; I. G. Ogden, Montreal, Vice Pre-sident; J. H. Walsh, Sherbrooke, Que., General Manager; A. D. MacTier, Mont-real; L. A. Carrier, Levis, Que.; T. Lind-ley and C. D. Brassey, London, Eng. H. C. Oswald, Montreal is Secretary.



## The Canadian Engineers' Splendid Work on the Western Front.

The overseas correspondent of Canadian Press, Ltd., in writing from the Canadian forces headquarters on the western front recently said:—"Much of the success of the operations of the Canadian Corps opening on Sept. 27, was due to the splendid work of our engineers. The engineering preparations for the Bourlon Wood operations were undertaken on five days notice, and were exceedingly difficult owing to the nature of the ground. On the front over which the Canadian Corps attacked, the way was barred by the Canal du Nord, 100 ft. wide, with banks up to 15 ft in height, the water in many places being over 8 ft. deep, and with the River Agache, 15 ft. wide and 8 ft. deep, parallel and close to the canal.

"The problem confronting the engineers in preparing for the attack involved the repair of roads demolished by shell fire; the pushing forward of cross country tracks for infantry and horse transport to the front line; the pushing forward of light tramways to the front line to facilitate the delivery of ammunition stores and supplies; the provision of engineer material of all sorts, and the construction of new headquarters for battalions, brigades, divisions, etc., and dugout accommodation and shelters as quickly as they could be improvised. A difficult question was the provision of water supply for the large number of horses, approximately 40,000 assembled in a very congested area.

"The problem was to get the infantry and the guns over the canal in the face of enemy barrage and to provide sufficient facilities in the way of roads, bridges, tramways, etc., which would ensure the supply of ammunition for the guns being sustained and the supply of stores, munitions and rations for the large number of troops engaged. As it was clear that the enemy's barrage would fall naturally on the canal and be retained there, the following were provided for: Seven infantry foot bridges of an unsinkable type; 10 crossings for guns and horse transport, 5 of which had to be developed at once for heavy traffic, even while the continuous stream of guns and ammunition wagons was pouring over them. At least ten times Canadian engineer officers flying at a height of about 500 ft. traversed the length of the canal involved, reconnoitering for the best spots for tank crossings, bridge sites and infantry crossings.

"Great were the preparations. Following were the results: Before 'zero' hour 18 miles of roads had been repaired up to the front line and 7 miles of tramways constructed. On these tramways over 3,000 tons of ammunition a day were being delivered to advanced dumps and gun positions. The huge concentration of horses was provided with the necessary water supply. After 'zero' all crossings were put through successfully, in spite of heavy gun and machine gun fire. The attack kicked off at 5.20 a.m., and the first guns crossed the canal at 8.40 a.m.

"The engineers went over with the infantry to get their footbridges across, and the engineer wagons, with their 6 horse teams, were pushed forward so rapidly that in several cases all the horses were killed by machine gun fire, and the

men got their material down to the bridge sites by man-handling the wagons. In one case a party of Boche machine gunners, who had been overlooked by the mopping up parties, emerged from a concealed tunnel, and attacked the engineer party attempting to bridge the canal. The engineer officer in charge took part of his men and beat off the attack, and at the same time kept the work of construction going without interruption.

"The bridges constructed were of all types: pontoon, trestle, heavy pontoon and heavy steel bridges for all traffic. A remarkable record was made in the erection of two heavy steel bridges of 110 ft. span under heavy fire. The materials were got on the sites at 2 p.m., and the approaches were prepared and the bridges erected and open for heavy work in 12 hours actual labor.

"By 2 p.m. three new pumping installations had been installed on captured ground and sufficient horse troughs to water 5,000 horses an hour. All materials were got forward to the infantry and the positions gained consolidated. About three miles of tramways were constructed and in operation, and over 1,000 wounded were evacuated on returning ammunition trains operated by Canadian Tramways Corps.

"The battle of Bourlon Wood was an engineers' battle. The success of the whole operation depended on the speed with which the necessary crossings of the Canal du Nord were provided, and the way in which they were maintained and improved during the day, so as to enable the guns and infantry to be maintained in the positions which they had reached in their advance.

### Railway Equipment for U.S. Naval Guns on the Western Front.

Press dispatches from France detailing the destruction wrought back of the German lines by huge naval guns operating with the French and United States forces make it possible now to disclose some particulars of these guns and how they were built, which has been a jealously guarded secret.

They were originally intended for the new battle cruisers, but a change in the design of the cruisers left the guns available for other use, and as there was in the navy no immediate need for them afloat, the chief of the Navy Bureau of Ordnance recommended that they be placed on railway mountings for land service with the armies in France. He felt that if the guns could be placed upon railway mountings, that would make them readily mobile like the British and French naval guns of smaller caliber, they would prove a valuable adjunct to the U. S. artillery forces overseas, and he was directed to proceed with the design and construction.

The U. S. naval guns throw a heavier projectile and have a greater muzzle velocity than any previously placed on a mobile shore mounting. From the first it was seen that in order to make the project successful, the railway battery must be made completely mobile, so that it might operate without being based at any one particular spot. For this

reason, it was necessary to provide not only the railway cars mounting the guns, but also locomotives and cars sufficient to accommodate all the operating personnel of the expedition, together with the ammunition, repair shops, cranes, stores and miscellaneous material. The final plans and specifications which were prepared at the Naval Gun Factory, Washington, were completed in less than 30 working days, being ready for submission to the bidders about Jan. 25, 1918.

Large mounts were to be built, capable of taking these big caliber guns, each mount with its accessories to be operated as an independent train. The equipment included locomotives, gun cars, ammunition cars, crane cars, construction, sand, timber, berthing and kitchen, fuel, workshop, and staff radio cars, car for officers, battery headquarters and miscellaneous purpose cars. The locomotives built for this purpose were standard consolidation type with 4 pairs of drivers. The weight of the locomotive alone is approximately 83 tons and the weight of the tender approximately 56 tons. A form of pit foundation was provided to enable the guns to be fired at high angles of elevation. The removal of the gun from over the pit formation and its restoration to complete mobility is but the work of a few minutes. The entire amount is covered with armor plate, 1,600 sq. ft. of plate being required. By shifting the position of the gun mount on the tracks the gun can be brought to bear on any desired target and the proper angle of train obtained.

The car equipment is unusually complete. One car is a complete machine shop, with every facility for repairs, with blacksmith forge and anvil, lathes, shapers, grinders, and drill presses. Ammunition cars are heavily armor plated. The kitchen cars have complete cooking and serving apparatus; the berthing cars have folding bunks for the men, and other cars carry complete sets of spare parts.

Every effort was made to secure rapid construction, work being begun the day the contracts were awarded. The Baldwin Locomotive Co. built the locomotives and the Standard Steel Car Co. the box cars. The huge steel girders were fabricated by the American Bridge Co., some of the plates being so large they could not be produced at its Pencoyd works and had to be manufactured in Pittsburg. Work at all these plants proceeded night and day, and the material and completed mounts and cars were produced in record time. Many of the important parts of the gun mounts were made at the Naval Gun Factory, Washington, which worked under forced draft, and had its part of the work done ahead of schedule, as did the other builders. The first gun, mounted complete, left the Baldwin shops April 25 for the army proving ground at Sandy Hook, where the tests were made in the presence of officers of the Army and Navy and of the allied governments.

These guns are all manned and operated by officers and men of the U. S. Navy. The first party of officers and men for this expeditionary force arrived in France June 9; the first shipment of material left the U. S. on June 20, and the entire organization was completed and ready to move to the battle front in France late in August. This battery was in action at the front for the first time on Sept. 16, and continued in active operation until the armistice.



# Wages of Railway Maintenance of Way Employees.

Following is a copy of Canadian Railway War Board agreement 2, entered into Nov. 8:—

Agreement between the Canadian Railway War Board and the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, in respect to increases in rates of pay and certain conditions of service in conformity with terms of Supplement 8, General Order 27, of the Director General, United States Railroad Administration, for employees in the maintenance of way department.

1. This agreement shall be effective on the following railways:—Canadian Government, Canadian Northern, Canadian Pacific, Dominion Atlantic, Esquimalt & Nanaimo, Fredericton & Grand Lake, Grand Trunk, Grand Trunk Pacific, Halifax & Southwestern, Kettle Valley, New Brunswick Coal & Railway, Quebec Central, and on other railways under the jurisdiction of the Canadian Railway War Board, as defined in article 4 of this agreement.

2. The rates of pay and conditions of service defined herein shall be effective from Sept. 1, 1918.

3. (a) The rates of pay for the various classes of employees in the maintenance of way department on the railways specifically named in article 1 of this agreement shall be as follows:—

Track Department.		
Section foremen	per day	\$4.40
1st class yards	" "	4.30
2nd " "	" "	4.20
3rd " "	" "	4.15
4th " "	" "	4.10
All other section foremen	" "	4.10
Assistant section foremen, 5c per hour in excess of rate paid laborers whom they supervise.	per day	\$4.35-\$5.50
Foremen of extra gangs	" "	a minimum of \$4.10
Ass't foremen of extra gangs	" "	5.10
Snow plow foremen	" hour	.37
Sectionmen in classified yards	" "	.36½
All other sectionmen	" "	.36½
Bridge and Building Department.		
B. & b. foremen	per day	\$5.10
Painter foremen	" "	4.85
Mason, concrete, bricklayer and plasterer foremen	" "	5.10
Pile driver, ditching and hoist engineers	" "	4.70
Carpenters	per hour (minimum)	.53
Painters	" "	.53
Masons	" "	.53
Brick layers	" "	.53
Plasterers	" "	.53
Plumbers	" "	.53
Pipe fitters	" "	.53
Tinsmiths	" "	.53
Blacksmiths	" "	.53
Bridgemen or rough carpenters	" "	.43
Pump repairers	" "	.53
Pumpmen—One pump	per month	92.00
Pumpmen—Two pumps	" "	98.30
Signalmen at interlocked crossings	" "	
13 levers or under	per month	90.00
14 to 23 levers inclusive	" "	94.00
24 levers or over	" "	103.00
Signal maintainers	per hour (minimum)	.53
Signal repairmen	" "	.53
Signalmen or watchmen at highway or railway (not interlocked) crossings	" "	.36½
Track and bridge watchmen	" "	.36½
Bridge tenders (manual operation)	" "	.36½

(b) The rates of pay as specified herein shall, except as otherwise provided, be the maximum rates, and it is agreed that for classes of positions for which existing or immediately preceding schedules provide a range of rates, such range of rates shall be continued in effect with the same differentials below the maximum rates as have previously existed.

(c) In cases in which shop and yard foremen carpenters under existing or immediately preceding schedules receive a rate of pay above or below the rates paid bridge and building foreman, the same differentials shall continue in effect, provided, however, that they shall receive

rates not less than the equivalent of \$115 a month.

(d) In cases in which mechanics and helpers to mechanics in the maintenance of way department were on Jan. 1, 1918, prior to the application of any increase effective that date, receiving less than 40c per hour and 30c per hour, respectively, basic minimum rates of 40c per hour and 30c per hour, respectively, shall be established, and to these basic minimum rates and all rates of 40c per hour and 30c per hour, respectively, and above, 13c per hour shall be added, establishing basic minimum rates of 53c per hour and 43c per hour, respectively.

(e) The rates of pay defined in clause (a) of this article for the various classifications of employees named shall be applied only on the railways named in article 1 and in the territories on such railways where such classifications are specified in existing or immediately preceding schedules.

(f) Classifications of employees specified in existing or immediately preceding schedules on any railway named in article 1 in any territory on such railways, and not named in clause (a) of this article, shall be maintained on such railways in such territory. The rates of pay for such employees shall be increased over the rates of pay in effect Jan. 1, 1918, prior to the

ernment, Canadian Northern, Canadian Pacific, Grand Trunk and Grand Trunk Pacific, the rates for yards of similar size and character on the railways named shall be used.

4. (a) On railways under the jurisdiction of the Canadian Railway War Board, other than those specified in article 1 of this agreement and which participated in the increase in freight rates provided for in order in council 1863 effective Aug. 12, 1918, the rates of pay of maintenance of way department employees shall be increased over the rates of pay in effect Jan. 1, 1918, prior to the application of any increases effective that date, by \$25 a month on monthly rates, 96c a day on daily rates, or 12c per hour or 13c per hour on hourly rates according to classification, provided, however, that all sectionmen shall be paid an hourly rate and receive an increase of 12c per hour on their equivalent earning per hour as at Jan. 1, 1918, irrespective of the basis, i.e., monthly, daily, or hourly, on which they have previously been paid, with a minimum of 28c per hour and a maximum of 40c per hour; and provided further that bridge and building, painter, mason, concrete, bricklayer and plasterer foremen shall receive rates not less than the equivalent of \$115 a month, that section foremen shall receive rates not less than the equivalent of \$100 a month, that pile driver, ditching and hoist engineers shall receive rates not less than the equivalent of \$105 a month, and that mechanics shall receive a minimum of 53c per hour, and helpers to mechanics a minimum of 43c per hour.

(b) Articles 2, 5, 6, 7, 8 and 9 of this agreement shall also apply to the railways covered by this article.

5. Eight consecutive hours, exclusive of the meal period, shall constitute a day's work.

6. (a) Overtime shall be computed for the ninth and tenth hours of continuous service, pro rata on the actual minute basis, and thereafter at the rate of time and one-half; provided, however, that in the event of the Director General, U.S. Railroad Administration, issuing any supplement or interpretation specifying some other basis for the payment of overtime for maintenance of way employees, such other basis shall be effective in the same manner and from the same date as made effective on the U.S. railways, but not prior to Sept. 1, 1918.

(b) When notified or called to work, outside of regular working hours, employees shall be paid a minimum allowance of 3 hours straight time.

(c) In computing overtime rates per hour for monthly and daily rated employees, fractions of a cent, one-half or over, shall be counted at the next cent above, and fractions of a cent less than one-half at the next cent below. For hourly rated employees fractions of a cent, one-quarter to one-half inclusive, and three-quarters or over, shall be counted at the one-half cent and the next cent above respectively, and fractions of a cent between one-half and three-quarters and less than one-quarter shall be counted at the half-cent and the next cent below respectively.

7. The provisions of this agreement shall supersede any provision in existing or immediately preceding schedules which conflict therewith.

8. The increases in rates of pay provided for herein are effective as from

application of any increases effective that date, by \$25 per month on monthly rates, 96c per day on daily rates, or 12c per hour or 13c per hour on hourly rates according to classification.

(g) On railways and in the territories where under existing or immediately preceding schedules it has been the practice to pay the two pump rate to pumpmen on single pumps where two men are employed, on single pump where water is treated, or on single pump and doing coal hoisting, the practice shall be continued.

(h) In applying the rates of pay for section foremen in 1st to 4th class yards on railways other than the Canadian Gov-



Sept. 1, 1918, and are to be paid according to the time served to all maintenance of way department employees who were then in the service, or who have come into the service since and remained therein. The proper ratable amount shall also be paid to those who have been for any reason since Sept. 1, 1918, dismissed from the service, but shall not be paid to those who have left it voluntarily. Employees who have left the service to enter the army or navy shall be entitled to the pro rata increases accruing on their wages up to the time they left.

9. It is agreed that the Canadian Railway War Board and the Central Committee for Canada of the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers shall confer promptly upon notice from either party to the other, regarding the incorporation into this agreement of any amendments or interpretations which may be issued by the Director General U.S. Railroad Administration, to his general order 27 and supplement 8 thereof, affecting employees in the maintenance of way department, as a result of the negotiations now in progress, and also with respect to any question which may arise regarding the interpretation of this agreement.

Maintenance of way employees' committees shall confer with their respective railway managements with respect to any increase in rates of pay due for Aug., 1918, under the application of general order 27 of the Director General, U.S. Railroad Administration.

The agreement was signed on behalf of the Canadian Railway War Board by W. D. Robb, Vice President, G.T.R., for the chairman of the Administrative Committee, and by W. M. Neal, General Secretary. On behalf of the Central Committee for Canada United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, it was signed by Wm. Dorey, Chairman, and W. Jewkes, Secretary.

### Quebec and Saguenay Railway Operations, Etc.

By chap. 22, the Dominion Statutes of 1916, the Minister of Railways was authorized to acquire, under the provisions of the statutes of 1915, chap. 16, the Quebec, Montmorency & Charlevoix Ry., from St. Paul St., Quebec, to St. Joachim, 43.2 miles; also the Quebec & Saguenay Ry. and the Lotbiniere & Megantic Ry., at prices to be fixed by the Court of Exchequer, the total outside value being placed at about \$4,000,000, which parliament voted to make the purchase and to complete the lines. Proceedings were taken in the Court of the Exchequer during 1917 to fix the value of the Q. & S. Ry. and the L. & M. Ry. lines, and a report was presented, certain points being reserved in respect of the Q. & S. Ry. Before the Exchequer Court's report was made, parliament, in 1917, voted \$3,667,745, by way of revote, to pay for the three lines authorized to be purchased. The matters reserved by the Court of Exchequer in respect to the Q. & S. Ry. were discussed prior to the last session of parliament, when an act was passed amending the statute of 1916 in several details and authorizing the taking over of the Q. & S. Ry. We are informed that the details of this purchase have not yet been completed.

The Q. & S. Ry. has been opened for traffic from St. Joachim to St. Paul, and a tri-weekly service has been given over it since August. We are advised that the

Q. & S. Ry. passengers are transferred to the Quebec Ry., Light & Power Co.'s line at St. Joachim and are carried from there into Quebec, 25 miles. Freight service is being worked on a joint tariff basis, the Q.R.L. & P. Co. locomotives hauling trains between Quebec and St. Joachim, and the Q. & S. Ry. locomotives hauling the trains between St. Joachim and St. Paul.

The Quebec, Montmorency & Charlevoix Ry. (which is owned by the Q. Ry., L. & P Co.) and the Lotbiniere & Megantic Ry. are still being operated as independent lines.

### Record Locomotive Construction in the United States.

The United States standard gauge steam locomotive industry, operating under the direction of the War Industries Board, has increased its rate of production approximately 100% in the past three months. In a recent week the output of the three standard gauge companies was 144 locomotives. Since 1910 and up to last August, the highest number ever turned out in a single year was 3,776, which would represent an average weekly output of 72.6 locomotives.

The achievement is particularly noteworthy from the fact that, in bringing about this tremendous jump in production, it has been unnecessary to expend a dollar to increase plant facilities or enlarge the existing works—items of considerable expense in the development of most of the other war industries of the country. Redistribution of orders and concentration by each of the plants on particular types of locomotives has made possible an intensity of effort unprecedented in the industry.

The Pershing locomotive, built on standardized plans designed by the U.S. Military Railways, has not only been made the sole type of steam locomotive in use behind the U.S. lines in France, but, at the instance of the War Industries Board, has been adopted by the British and French Governments as the standard type for their armies on the western front.

Last August the Government, face to face with an immediate and urgent demand for steam locomotives for use in the U.S. and France, was seriously considering the establishment of government plants to meet the emergency. It was proposed that approximately \$25,000,000 should be spent for this purpose. At the suggestion of the War Industries Board the expenditure was held up in favor of the present plan.

Under the arrangement adopted, the construction of all the locomotives of standard gauge for use in France was assigned to the Baldwin Locomotive Works, whereas all orders for the U.S. Railroad Administration were divided between the American Locomotive Co. and the Lima Locomotive Works. These three companies comprise the entire standard gauge steam locomotive industry of the country. By this method of distributing the work, each of the plants has been able to develop extraordinary speed.

Normally the output of the Baldwin works never exceeded 60 locomotives a week. In a recent week it turned out 87 locomotives complete, not to mention 7 gasoline locomotives and 3 electric locomotives, and general repairs on 10 steam locomotives, and the promise is for even better returns. The American Locomotive Works has likewise accomplished ex-

cellent results, for while the number of locomotives is not so great, the tonnage represented in the output is proportionately as large; that is to say, whereas the Pershing locomotive weighs about 83 tons complete, the average weight of the locomotives called for by the U.S. Railroad Administration is approximately 150 tons. Similarly the Lima works have developed to a marked degree in the last three months: and, as in the case of the other two concerns without expansion of plant or plant facilities.

The importance of the results attained in this direction in their relation to the war programme of U.S. generally is indicated by the fact that the U.S. government is spending this year in the construction of these locomotives—both for use in France and on the government-operated roads—approximately \$200,000,000.

### Re-employment of Soldiers and Sailors on U.S. Railways.

The majority of U.S. railways under federal control have already made announcement with respect to the preservation of seniority rights for employees who have entered the service of the army and navy and have indicated that so far as practicable preference in re-employment or reinstatement would be given to soldiers and sailors when mustered out of the service.

1. In order that as nearly as practicable there shall be a uniform treatment of this matter, the following general principles will govern:

(a) In the case of an employee having established seniority rights, so far as practicable, and where the employee is physically qualified, he will be restored to such seniority rights.

(b) In the case of employees who do not have seniority rights under existing practices a consistent effort will be made to provide employment for them when mustered out of military service.

2. Upon railways where the assurances given on this subject have been more specific than the provisions of paragraph 1 hereof, such assurances shall be observed.

St. John's Ambulance Association's Police Shield.—The shield presented by Lord Shaughnessy for first aid competition among police teams of Eastern Canada, was won in the competition for 1918 by the team from the C.P.R. Angus shops, Montreal. The shield was presented to the winning team by Fred Cook, of Ottawa, for the society, Nov. 7, and it will be held by Lord Shaughnessy until another team wins it. The members of the winning team each received a gold pin. The shield was originally presented for competition in 1914, and this is the first occasion on which it has been won by a C.P.R. team.

The Alberta Coal Mines, Limited, has been incorporated under the Alberta Companies Act with authorized capital of \$10,000 and office at Winnipeg, Man., to carry on a general mining business in the province, and in connection therewith to build spur lines and tramways and to connect them with existing railways, and to operate steam or other vessels on any navigable waters of the province. Following are the provisional directors:—B. Humberstone, Clover Bar; H. C. Anderson, Jas. C. Dunn, C. G. Sheldon, and M. Reid, Edmonton, Alta.



## Revised Regulations for Interswitching of Freight Traffic.

The Chief Commissioner, Board of Railway Commissioners, gave the following judgment Oct. 26:—

The board's general order 230 changed the interswitching practice in that it compelled railway companies to give interswitching, instead of merely extending it at certain points as a matter of grace, and also threw open the interswitching service, not only to and from private sidings, but also to team tracks. In thus placing at the convenience and use of competing lines the terminal facilities of the originating carrier, and as a measure of justice to the originating carrier, the order contained the following clause:

"14. Except as hereinafter provided, the tolls herein prescribed shall not apply to deprive the initial carrier of the line haul by a reasonable route of traffic loaded or to be loaded on its railway, including sidings connecting therewith, provided it furnishes at the destination, itself or through its connections or by interswitching, the same delivery and facilities as the competing carrier at no greater charge."

Owing to protests made, the operation of the order has been stayed. The protests that have been made have been from shippers or boards of trade, and have reference entirely to the above paragraph. These protests point out that, as a matter of fact, interswitching in the past has freely been accorded by the railways to private sidings. The protest of the Border Chamber of Commerce of Windsor, Ont., may be quoted as illustrative of the position taken by the eastern shippers who objected to the provision. The protest says, among other things:—

"While our shippers recognize, in general practice, the right of the initial carrier to the line haul on business originating on its line or private sidings therefrom, providing, of course, said carrier can provide the service, still the majority of our members feel that the right to route their traffic should not be taken away from them. While 48 hours time which the board's order provides, in which the initial carrier may place equipment, probably seems reasonable, when you add another 48 hours, or maybe 96 hours, to get equipment switched from another line, same may easily constitute a serious delay. Then again, when you provide by tariff the assurance of the line haul to the initial carrier of all traffic it originates, you take away from that carrier the main incentive for the performance of a service satisfactory to the shipper. We are not aware of any case of a shipper depriving initial carrier of his just proportion of road haul, but feel that the possibility of competition in the routing of traffic should not be interfered with and, therefore, that section 14 of the board's order 230 should be eliminated. We venture the further opinion that the majority of shippers and railways will concur in this request."

The Winnipeg Board of Trade Shippers' Section also protested against the same section, in part as follows:—

"In providing that the railway on which traffic originates is entitled to the line haul, this section believes the board is depriving shippers of a valuable right they have always enjoyed, of routing their cars along the line they desire to use. The enforcement of it will have a radical effect upon the whole service of freight in carlots. It involves the removal of the only competition now remaining to shippers—competition in service. The alternative given to shippers of paying the additional freight to the point of interchange means an additional tax or increase in rates, for which no justification has been advanced."

A similar position has been taken by the Canadian Manufacturers Association. These protests are all made in ease of the position of the large shippers, who have private sidings, and therefore of the movement which, in the great majority of cases, has constituted by far the greater percentage of interswitching operations.

On further consideration it would appear fair that the extension of the interswitching practice to team tracks should not be done at any inconvenience or detriment to industries which in the past have had the service. The board's Chief Traf-

fic Officer has had this question, and the interlocking question of free cartage (which has frequently been referred to as an unjust and unfair discrimination, extended in favor of the larger shippers by certain railways), up with the railway companies and some of the larger shippers. The railway companies do not agree unanimously to an amendment of clause 14, the effect of which would be to restore the status of private sidings to their original position. In view of the fact, however, that the compulsory interswitching will enable the companies to use the tracks the one of the other, the larger systems now agree as follows:—

"In view of the services and tolls herein provided for, schedules authorizing any arrangement or device, such as free or assisted cartage, cartage allowance or the like, intended to equalize the facilities of competing carriers at common points, shall be withdrawn and cancelled within three months from the date of issuance of this order. Provided that if a carrier deem itself entitled to such equalization arrangements in a particular case, it may, within six months from the date of issuance of this order, or within six months following the establishment of interchange facilities at any particular point hereafter, apply to the board for relief."

Notwithstanding the position of some of the railway companies, I would give effect to the protests of the Canadian Manufacturers Association, the Winnipeg Board of Trade, and the Border Chamber of Commerce of Windsor, as above set out, and would strike out paragraph 14 of general order 230, substituting the following therefor:—

"Should a team track shipper expressly order his shipment to be interswitched to another carrier, notwithstanding that the initial carrier upon whose team tracks the car has been loaded can furnish at the destination, itself, or through its connections, or by interswitching, the same delivery and facilities as the said other carrier, at no greater charge, the said initial carrier may, in lieu of the toll prescribed in sec. 6, charge and collect its ordinary published rate to the interchange, which rate shall be a lawful additional charge against the shipment. Provided, however, that this alternative shall not be lawful, and sec. 6 shall apply, if within 48 hours after the shipper has requested it, the said initial carrier fails to place a suitable car reasonably convenient for loading."

### General Order 252.

Under the authority conferred upon it by the Railway Act, the board hereby rescinds general order 230, dated May 17, 1918, the effective date of which was postponed from July 1, 1918, to Aug. 1, 1918, by general order 239, dated June 19, 1918; to Oct. 1, 1918, by general order 243, dated July 25, 1918; and to Nov. 1, 1918, by general order 250, dated Sept. 16, 1918, and doth order and declare as follows:—

1. For the interpretation, application, and operation of this order,—

(a) "Interswitching" means the movement of freight in cars between the unloading or loading tracks of one carrier, hereinafter called the "terminal carrier," and the point of interchange with another carrier by whom, singly or jointly with a further carrier, the said traffic has been carried from its point of shipment or is to be carried to its destination, hereinafter called, singly or jointly, the "line carrier," both the terminal carrier and the line carrier which interchanges with the terminal carrier being subject to the jurisdiction of the board; the said movement being performed with or without the aid of an intermediate carrier whether subject or not subject to the jurisdiction of the board, hereinafter called the "intermediary."

(b) The "interchange" means the junction between the terminal carrier and the line carrier, or between the terminal carrier and the intermediary, nearest to the

point of loading or unloading of the car.

2. This order does not apply,—

(a) To tracks used by the terminal carrier for the transfer of freight between cars and its freight warehouse, or for the purpose of transshipment from car to car, nor to tracks otherwise set apart for its own working purposes, except team tracks;

(b) To joint movements which both begin and end in the same terminal or group of terminals or adjoining switching districts;

(c) To cars which, having been once properly interswitched for unloading, are reconsigned for unloading elsewhere within the same terminal or group of terminals.

3. Subject to the provisions of sec. 14, carriers shall at all times, according to their powers, furnish an interswitching service equal to the service accorded their own traffic at all points where interswitching facilities are, or may hereafter be, provided, under the circumstances and at the tolls herein prescribed;

Provided that no terminal carrier or intermediary shall be obliged hereunder to make any movement exceeding the distances herein specified at the tolls herein prescribed, and that the said distances be irrespective of the location of the interchange or of yard limits or boundaries.

4. The toll of an intermediary subject to the jurisdiction of the board shall not exceed, irrespective of weight, \$3 a car for any distance within and including 3 miles, or \$3.50 a car for any distance exceeding three miles to and including 4 miles.

5. If the traffic is loaded or unloaded upon private sidings connecting with the railway of the terminal carrier, or directly from or into an industry, elevator or yard abutting upon its tracks (commonly known as industrial sidings), or in any public stock yard, the toll of the terminal carrier shall not exceed 1c per 100 lb. for the actual weight thereof, subject to the minimum weight of the line carrier's tariff, for any distance within and including 4 miles from the interchange; except that the terminal carrier shall be entitled to a minimum charge of \$3 a carload of traffic, included in the 7th, 8th and 10th classes of the Canadian Freight Classification, and \$5 a carload of all other traffic.

6. The toll of the terminal carrier upon all traffic other than that referred to in sec. 5, including traffic to or from team tracks, shall not exceed 2c per 100 lb. for the actual weight thereof, subject to the minimum weight of the line carrier's tariff, for any distance within and including 4 miles from the interchange; except that the terminal carrier shall be entitled to a minimum charge of \$6 a car.

7. Not less than the following proportions of the tolls herein prescribed shall be absorbed in the rate of the line carrier and the remainder shall be an addition thereto:—

(a) One-half of the tolls charged by the terminal carrier under sec. 5 as qualified by sec. 9.

(b) Of the tolls prescribed in sec. 6 one-half of the tolls permitted under sec. 5, as qualified by sec. 9, as if the movement were to or from private sidings.

(c) One-half of the herein prescribed or lower tolls of each intermediary, if any, whether subject or not subject to the jurisdiction of the board.



Provided that the line carrier may, unless its tariff rate is lower, charge and collect \$12 per car for its haul between the interchange and the point of shipment or destination when by reason of such absorption its line charges would otherwise be less than that amount.

8. The appropriate tolls hereinafter prescribed shall not be exceeded, for the distances herein specified, in each direction for the movement from and the return to the line carrier of so-called off-line transit traffic, and the line carrier shall be subject to the absorption provisions of sec. 7 only when its through rates are the sum of its published rates to and from the stop-over point.

9. If an extra car, commonly known as an idler, is used solely to take care of an overhang of long articles loaded on an open car, it shall be charged by the terminal carrier not more than two-thirds of the herein prescribed appropriate toll for the minimum weight of the line carrier's tariff, except that the terminal carrier shall be entitled to a minimum charge of \$3 a car. If interposed between 2 cars in the same shipment to protect an overhang from each the idler shall be charged for once only.

10. No charge shall be made for the accessory interswitching of the empty car. If the car is loaded in both directions the interswitching toll shall be charged for each movement.

11. Subject to the provisions of sec. 14, nothing herein contained shall prevent the line carrier from absorbing the entire toll or tolls charged for interswitching competitive traffic, provided that the traffic and movements so treated are clearly defined in its tariffs.

12. Traffic to or from the United States shall be subject to the provisions of this order at the point of shipment or destination in Canada.

13. If an exceptional rate is published to apply to or from the tracks of the carrier line only, the ordinary rate which includes the right of interswitching shall be plainly indicated in the same schedule, and the latter rate shall not exceed the former by more than the appropriate toll herein prescribed for the interswitching service.

14. Should a team track shipper expressly order his shipment to be inter-switched to another carrier, notwithstanding that the initial carrier upon whose team tracks the car has been loaded can furnish at the destination thereof, itself or through its connections or by inter-switching, the same delivery and facilities as the said other carrier at no greater charge, the said initial carrier may, in lieu of the toll prescribed in sec. 6, charge and collect its ordinary published rate to the interchange, which rate shall be a lawful additional charge against the shipment;

Provided, however, that this alternative shall not be lawful, and sec. 6 shall apply, if within 48 hours after the shipper has requested it the said initial carrier fails to place a suitable car reasonably convenient for loading.

15. In view of the services and tolls herein provided for, schedules now in effect authorizing any arrangement or device, such as free or assisted cartage, cartage allowance or the like, intended to equalize the facilities of competing carriers at common points, shall be withdrawn and cancelled within three months from the rate of issuance of this order:

Provided that if a carrier deem itself entitled to any such equalization arrangement in a particular case, it may, within 6 months from the date of issuance of

this order, or within 6 months following the establishment of interchange facilities at any particular point hereafter, apply to the board for relief.

16. The schedules to give effect to this order shall be published and filed to come into force on Jan. 1, 1919.

### Canada's Assistance to Great Britain in Transportation Matters.

Appreciation of the assistance rendered to Great Britain by Canada during the difficult period of transportation last winter has been expressed in a letter received by Sir Robert Borden from the Earl of Crawford, who is in charge of the wheat and flour situation for the allies, under the British Food Ministry. The Earl states that the Jacob Stewart, who represented the British Commission, with headquarters at Winnipeg, has explained how difficult the situation would have been without the co-operation of Sir Henry Drayton, the Chief Railway Commissioner, whose assistance surmounted difficulties which threatened to become insurmountable. He states that the Trade and Commerce Department, Canada Food Board and the Railway War Board, to mention only three of many organizations, likewise did much to promote the strength and unity from which Great Britain derived such marked benefits.

### A Western Tribute to M. H. MacLeod.

M. H. MacLeod, who for nearly 20 years has been very closely identified with the Canadian Northern Ry. in Western Canada, will leave this city on Saturday for Toronto, where he will assume his new post as Vice President of this system of railways. Widespread regret is expressed in business and commercial circles that the prevalence of the influenza prevents the tendering to him of a public dinner as an indication of the very high esteem in which he is held.

It was Mr. MacLeod's privilege to be identified with the C.N.R. at the time of its great expansion, in a period when a new empire was created in Western Canada, and his name will therefore be indissolubly connected with the railway. He joined the service as Chief Engineer in 1900, after spending many years with the C.P.R., at a time when the era of rapid development in this country was just beginning and he became the general manager seven years later. During this period he shared the responsibility for all the important construction and development work on the western lines of the system. Eleven years ago Mr. MacLeod was promoted from the position of Chief Engineer of the system to that of General Manager as well, a position which he has filled with distinction and success.

Mr. MacLeod will be affectionately remembered in this city and in the west generally, as an efficient and competent railway official, who always had time to be courteous and kind. The duty which he had to perform were not exceeded in seriousness by those of any other westerner. The equipment of the railway was never complete, and he was compelled from the beginning to the end to carry on as circumstances might allow. He secured the most cordial co-operation of an efficient staff and exhibited high qualities of judgment and personal industry.

His manner was modest and quiet to a degree, and wherever he went through the west he made friends for the company and alienated none. Among the employees of the company there is probably not one but regrets the departure of the General Manager from this city, and this feeling is shared by thousands of citizens in the four western provinces.

### Steel Rails for Canadian Railways.

In addition to the order given by the Dominion Railways Department to the Dominion Iron & Steel Co., Sydney, N.S., last spring, for 100,000 tons of steel rails for delivery to various Canadian lines, the Department on Nov. 14 gave another order to the Dominion Iron & Steel Co. for 125,000 gross tons, and to the Algoma Steel Corporation, Sault Ste. Marie, Ont., for 75,000 gross tons of 85 lb. section steel rails, for delivery to the various railways. The Algoma Steel Corporation is to commence rolling its order immediately, and the Dominion Iron & Steel Co. will start rolling the new order as soon as the first one has been completed.

We are officially advised that up to Nov. 6, the Dominion Iron & Steel Co., Sydney, N.S., had rolled 97,850 tons of steel rails out of the 100,000 tons first ordered by the Dominion Government, and that 84,140 tons had been shipped to railways as follows:—

	First quality	Second quality
Canadian Copper Co.....	40	.....
Canadian Government Rys...	14,806	938
Canadian Northern Ry.....	18,841	1,136
Canadian Pacific Ry.....	30,282	2,010
Grand Trunk Ry.....	14,455	936
Toronto, Hamilton & Buffalo Ry. ....	663	33
	79,087	5,053

In reference to the no. 2 rails mentioned above, the following provisions in the contract may be mentioned:—"Not over 5% of no. 2 rails may be a part of the tonnage specified in this contract. Rails which by reason of surface or other imperfections are not classed as no. 1 rails will be accepted as no. 2 rails, provided they do not, in the judgment of the inspectors, contain imperfections in such number and of such character as may render them unfit for recognized no. 2 uses. Both ends of all no. 2 rails shall be painted white, except those classed as no. 2, on account of pipe, which shall be painted yellow. The former shall be stamped with 2 prick punch marks, on the ends of head, and also on the web clear of the angle bars. Rails which show pipe at ends shall not be accepted as no. 1 rails, but if they appear perfect when shortened to 27 or 30 ft., they may be accepted as 2 short rails, provided they comply with no. 2 requirements, and such rails shall be painted white at both ends."

It developed during the rolling that there was a greater percentage of no. 2 rails than 5%, due to lack of efficient rail makers, etc., but the railways accepted them.

**Railway Lands Patented.**—Letters patent were issued during October, respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Canadian Northern Ry. ....	160.00
Canadian Northern Western Ry. ....	318.55
Edmonton, Dunvegan & British Columbia Ry. ....	56.33
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. ....	321.00
Total ..	855.88



# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 250, Sept. 16.—Postponing to Nov. 1 effective date of general order 230, May 17, re interswitching of freight traffic.

General order 251, Oct. 4.—Amending general order 244, July 26, re reports of accidents by railway companies.

General order 253, Oct. 29.—Providing minimum weight for crushed stone and other building and paving materials, now shown as marked capacity of car but not less than 60,000 lbs.; also that no greater rate shall be charged for such materials than that to which shipper may be restricted by carrier by reason of any track bearing limitations.

General order 254, Oct. 25.—Requiring railway companies to supply hearters in all cars furnished for receipt of vegetables in carloads, subject to charges provided for in published tariff; also that hearters supplied by shippers where companies are unable to furnish them, be returned, free of charge, to point of shipment.

27782, Oct. 24.—Extending to Dec. 31 time for completing G.T.R. station at Lydden, Sask., as required in order 27506, July 29.

27783, Oct. 28.—Authorizing Canadian Northern Ry. to build highway crossing between Secs. 8 and 17, Tp. 51, Range 11, west 4th meridian, Alta.

27784, Oct. 28.—Authorizing C.P.R. to build extension of passing siding over crossing at grade between Railway St. and Maine Central Rd. at mileage 47.38, Cookshire, Que.

27785, Oct. 28.—Authorizing Town of Welland, Ont., to rebuild bridge over Welland River.

27786, Oct. 28.—Authorizing Niagara, St. Catharines & Toronto Ry. to build siding for National Abrasive Co., Niagara Falls, Ont.

27787, Oct. 28.—Authorizing G.T.R. to build spur and extension to siding for Canada Seed Co., Hagersville, Ont.

27788, Oct. 28.—Authorizing Saskatchewan Highways Department to make highway crossing over C.P.R. in n.e.  $\frac{1}{4}$  Sec. 12, Tp. 9, Range 17, west 3rd meridian.

27789, Oct. 28.—Relieving C.P.R. from providing further protection at crossing of Valois Ave., Valois Station, Que.

27790, Oct. 29.—Authorizing C.P.R. to build extension to siding across Town Line road between London and Lobo Tps., Ont.

27791, Oct. 31.—Authorizing Canadian Northern Ry. to rebuild bridge over creek on the west leg of Y at Brockville, Ont.

27792, Oct. 28.—Authorizing Niagara, St. Catharines & Toronto Ry. to build bridge for Garden City Paper Co. at Merriton, Ont.

27793, Oct. 30.—Authorizing C.P.R. to build bridge for Western Canada Hardware Co., Lethbridge, Alta.

27794, Oct. 31.—Authorizing C.P.R. to build crossing at grade over road allowance between Sec. 18, Tp. 12, Range 28 and Sec. 13, Tp. 12, Range 29, west principal meridian, at mileage 68 Broadview Subdivision, Sask.

27795 to 27797, Oct. 28.—Approving Bell Telephone Co.'s agreements with Victoria Rural Telephone Co., Algoma District, Ont., Oct. 7; Livingstone Rural Telephone Co., Algoma District, Ont., Oct. 10; and Minto Rural Telephone Co., Wellington County, Ont., Sept. 17.

27798, Oct. 29.—Relieving G.T.R. from providing further protection at crossing near Pickering, Ont.

27799, Oct. 30.—Amending order 27676, Sept. 20, authorizing Canadian Northern Ry. to build spur line for Crescent Collieries at mileage 15.36, Bienfait Subdivision.

27800, 27801, Ordering G.T.R. to maintain day and night watchmen at the crossings of Wentworth St. and Victoria Ave., Hamilton, Ont.

27802, Oct. 30.—Ordering G.T.R. to operate trains between Abbotsford, Que., and the International boundary at speed not exceeding 15 miles an hour and to patrol the track between mileage 1 and 2 with day and night watchmen.

27803, Oct. 2.—Approving bylaw of City of St. Thomas, Ont., prohibiting blowing of steam whistles of locomotives.

27804, Oct. 29.—Authorizing Standard Bank of Canada, Calgary, to pay \$2,000 with accrued interest, to Red Deer Valley Coal Operators' Association deposited under requirements of order 22273, dated July 24, 1914.

27805, Oct. 29.—Extending for 60 days from Nov. 1 time within which C.P.R. shall install electric bell as required by order 27113, Sept. 24.

27806, Oct. 30.—Authorizing Calgary Power Co., Seebe, Alta., to make crossing over C.P.R. just east of bridge over Kananaskis River.

27807, Oct. 29.—Recommending to Governor General in council for approval bylaw 20 of Montreal & Southern Counties Ry. adopting as rules and regulations subjects referred to in par. (e) and (f), Sec. 307 of Railway Act.

27808, Oct. 30.—Ordering C.P.R. to pay to Mrs. Fraser, owner of lot immediately west of the Laing Produce & Storage Co.'s property, Brockville, Ont., \$1,250, as compensation for damages resulting from the construction of the spur there.

27809, Oct. 31.—Ordering Edmonton, Dunvegan & British Columbia Ry. to erect shelter at Dapp, Alta., for accommodation of right and passengers and to provide for heating and lighting, on arrival and departure of trains.

27810, Oct. 31.—Dismissing application of Village of Rocky Mountain House, Alta., for Order directing C.P.R. to provide stock yard and other accommodation, for freight and suitable accommodation for passengers, and ordering the C.P.R. to build spur at Lochearn, Alta.

27811, Nov. 2.—Rescinding order 27074, Sept. 23, re spur for E. W. Gillett Co., Toronto, subject to condition that construction and operation authorized be without prejudice to existing or future rights of Anthes Foundry Co., or Canada Metal Co.

27812, Oct. 31.—Extending to Dec. 15 time within which building of stock yard at Ardrossan, Alta., on Grand Trunk Pacific Ry. shall be completed.

27813, Oct. 31.—Recommending to Governor General in Council for sanction Algoma Central & Hudson Bay Ry.'s general train and interlocking rules.

27814, Oct. 31.—Authorizing Saskatchewan Government to build highway crossing over Grand Trunk Pacific Branch Lines Co.'s track on surveyed road east and west through Sec. 20, Tp. 40, Range 16, west 3rd meridian.

27815, Nov. 4.—Approving location and detail plans of proposed G.T.R. station at Middlemiss, Ont.

27816, Nov. 2.—Authorizing C.P.R. to build spur for Saskatchewan Co-Operative Creameries, Ltd., Saskatoon, Sask.

27817, Nov. 4.—Authorizing Canadian Northern Ry. to extend siding across Ottawa St. at Richmond, Ont.

27818, Nov. 4.—Approving plan and specification of work to be done on Tremblay Creek under C.P.R. and Michigan Central Rd.

27819, Nov. 4.—Authorizing C.P.R. to build extension to Biggar's siding at grade over Bell's Road, near Carona, Que.

27820, Amending order 21815, Nov. 20, 1914, re installation of automatic bell by C.P.R. at crossing of Lavolette Ave., Three Rivers, Que.

27821, Nov. 5.—Ordering G.T.R. to provide a 2 ft. culvert opposite dividing line between Lots 4 and 5, Con. 3, Amabel Tp., Ont.

27822, Nov. 5.—Authorizing G.T.R. to build two spurs for Toronto Harbor Commissioners to Canada Steamship Lines' property.

27823, Nov. 5.—Authorizing Canadian Northern Quebec Ry. to build spur for Jos. Cadieux Co., Laval de Montreal, Que.

27824, Nov. 5.—Approving plans and specifications of work on Charles Butler award drain under Michigan Central Rd., Southwood Tp., Ont.

27825, Nov. 5.—Approving grade revision of London & Port Stanley Ry. between stations 57+00 and 79+00; also alterations in bridge over Thames River, London, Ont., and connection of London & Port Stanley Ry. across Phillip St.

27826, Nov. 5.—Authorizing G.T.R. to connect spurs serving Canadian Chicago Bridge & Iron Co., Bridgeburg, Ont., with Michigan Central Rd. spur.

27827, Nov. 4.—Amending order 27490, July 29, by relieving Toronto, Hamilton & Buffalo Ry. from appointing caretaker to keep station at Mount Pleasant, Ont.

27828, Oct. 29.—Relieving C.P.R. from providing further protection at crossing, near Woodstock, Ont.

27829, Oct. 24.—Approving City of Toronto bylaw 7452, July 26, 1915, respecting blowing steam whistles of locomotives, etc.

27830, Nov. 6.—Suspending, pending hearing, Ottawa Electric Ry. tariff C.R.C. 5, published to become effective Nov. 15.

27831, Nov. 4.—Ordering Canadian Northern Ry. to make highway crossing between Secs. 24 and 25, Tp. 38, Range 5, west 3rd meridian, Sask.

27832, Nov. 5.—Authorizing British Columbia Government to build highway crossing over C.P.R. at Pritchard Station.

27833, Nov. 6.—Authorizing Clarkson, Gordon & Dilworth, chartered accountants, Toronto, to examine books, papers and documents of Canadian and Dominion Express Co.'s for ascertaining tolls and expenditures in connection with their service in Toronto tolls zone.

27834, Nov. 6.—Relieving G.T.R. from providing further protection at second crossing north of Holland Landing station, Ont.

27835, Nov. 5.—Authorizing G.T.R. to take certain lands at Glen Robertson for station building; and to enable it to comply with orders 27176 and 27588, May 2 and Aug. 13, respectively.

27836, Nov. 5.—Approving agreement, Oct. 7, between Bell Telephone Co. and Keppell Rural Telephone Co. in Grey County, Ont.

27837, Nov. 7.—Authorizing Saskatchewan Gov-

ernment to build crossing over south end of C.P.R. station grounds and right of way at Loreburn, Sask.

27838, Nov. 8.—Authorizing G.T.R. to build overhead farm crossing bridge on Lot 19, Con. 11, Bayham Tp., Ont.

27839, Nov. 7.—Extending to Dec. 31, 1919, time within which Canadian Northern Ontario Ry. is required to build branch from its Cartierville yard to Cartierville village.

27840, Nov. 8.—Authorizing C.P.R. to divert road allowance on southern boundary of Sec. 27, Tp. 26, Range 25, west 4th meridian, at Swastika, Alta.

27841, Nov. 7.—Suspending, pending hearing, supplementary tariffs of C.P.R., G.T.R. and Canadian Northern Ry., cancelling commodity rates on ferro-silicon from Welland and Thorold, Ont., and Shawinigan Falls, Que.

27842, 27843, Nov. 7-6.—Authorizing Toronto, Hamilton & Buffalo Ry. to take certain lands for additional tracks at Kinnear yard, Ont.

27844, Nov. 8.—Approving revised grade of Mount Royal Tunnel & Terminal Co. from west portal of tunnel at mileage 3.37 to point just west of Lazard Road crossing at mileage 4.16 from Montreal Terminals.

27845, Nov. 8.—Suspending order 27559, Aug. 14, which apportioned cost of transfer track between Canadian Northern Saskatchewan Ry. and C.P.R., until track has been built and in operation for three months.

27846, Nov. 9.—Authorizing Mount Royal Tunnel & Terminal Co. to cross Jacques Cartier Union Ry. at mileage 5.25 from Montreal Terminals.

27847, Nov. 9.—Dismissing application of Esquering Branch of United Farmers of Ontario, for order directing G.T.R. to provide shipping facilities for stock at Stewarttown Station, Ont., and ordering G.T.R. to protect all switching operations on sidings by one of the train crew.

27848, Nov. 12.—Ordering Bell Telephone Co. to furnish certain returns as to operating revenue, expenses, maintenance, etc., its capital charges, valuation of lands, plants, etc., in connection with its application for increased tolls.

27849, Nov. 12.—Authorizing C.P.R. to build spur for Canada Metals Co., Outremont, Que.

27850, Nov. 7.—Authorizing G.T.R. to build spur for Consumers Metal Co., Lachine, Que.

27851, Nov. 13.—Extending to Dec. 15 time within which A. B. Pottinger is directed, under order 27627, Aug. 17, to enquire into and report on cost of building of Hastings St. viaduct over Vancouver, Victoria & Eastern Ry. & Navigation Co.'s track.

27852, Nov. 12.—Approving agreement between Bell Telephone Co. and Noisy River Telephone Co. in Simcoe, Dufferin and Grey Counties, Ont.

27853, Nov. 13.—Authorizing C.P.R. to build spur for Bengo-Canadian Pulp & Paper Co. at mileage 1.27, Wayagamack spur, Cap de la Madeleine Parish, Que.

27854, Nov. 13.—Authorizing G.T.R. to build spur across Duberger St., Montreal, for Crane, Ltd.

27855, Nov. 13.—Extending for one year from Nov. 13 time during which Lake Erie & Northern Ry. is authorized to operate over crossing of Toronto, Hamilton & Buffalo Ry.

27856, Oct. 31.—Approving G.T.R. clearances at railway sidings serving Crushed Stone, Ltd., at Kirkfield, Ont.

27857, Nov. 14.—Authorizing Toronto, Hamilton & Buffalo Ry. to cross at grade unopened road allowance between Lots 6 and 7, in Hamilton, Ont.

27858, Nov. 14.—Authorizing Canadian Northern Ry. to build spur for Imperial Oil Ltd., at Youngstown, Alta.

27859, Nov. 14.—Authorizing C.P.R. to build 4 industrial spurs for Leaside Munitions Co., Leaside, Ont.

27860, Nov. 18.—Authorizing C.P.R. to build at Tenth St., Regina Beach, Sask.

27861, Nov. 16.—Suspending, pending hearing, order re Canadian Northern Ry., C.P.R., and G.T.R. tariffs showing proposed increase in local switching charges to become effective Nov. 18.

27862, Nov. 18.—Authorizing Grand Trunk Pacific Saskatchewan Ry. to build interchange track with C.P.R. in Weyburn, Sask.

27863, Nov. 15.—Ordering that in case of mixed carloads consisting of grain or grain products, as defined in special tariffs, and calf meal, from one shipper to one consignee, and shipped from jobbing points whence specific commodity rates have been, or may be, published, 8th class rates shall apply on the calf meal; the aggregate minimum weight of such mixed carloads to be that of the said special tariffs on grain and grain products.

27864, Nov. 19.—Amending order 27741, Oct. 1, re Quebec, Montreal & Southern Ry. train service.

27865, Nov. 16.—Authorizing G.T.R. to build spur for Electric Iron, Ltd., Lakefield, Ont.

27866, Nov. 18.—Authorizing C.P.R. to remove spur on Gowanlock & McEvoy's property in Melville Tp., Ont.

27867, Nov. 18.—Approving agreement, Nov. 7, between Bell Telephone Co. and Cambray Telephone Co., Victoria county, Ont.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Canadian Pacific Ry.**—Rock ballast is being laid on the Montreal-Toronto line west of Vaudreuil, and it is expected to complete the rock ballasting of the double track this season to mileage 28 on the Winchester sub-division. This will complete this ballasting from Windsor St. Station, Montreal, to near St. Clet, 34 miles. (Nov., pg. 488.)

**The Dominion Atlantic Ry.** station at Bridgetown, N.S., was burned to the ground Nov. 10.

**The Edmonton, Dunvegan & British Columbia Ry.'s** general offices in Edmonton, Alta., a 2½ story frame building, valued at \$10,000, were destroyed by fire recently. Temporary offices have been opened. New plans have been announced for rebuilding.

Residents of the Grouard district recently urged upon the Alberta Government the desirability of building a branch of the E.D. & B.C.R. into Grouard, Alta. The Premier promised the deputation that the government will do all that is possible to secure the early building of the branch line, for which the legislature had already provided a guarantee of bonds. Hon. J. L. Cote informed the deputation that he had taken up with the company the bettering of facilities for handling the Grouard district traffic, and had been assured that the necessary steps would be taken to have increased facilities provided at Ewalda, mileage 227.2 from Edmonton Jct., and 237.2 miles from the Grand Trunk Pacific Ry. terminals in Edmonton. Grouard is situated at the western end of Lesser Slave Lake, and is 7 or 8 miles back from the railway. The deputation pointed out that inward local freight for the 12 months Sept. 1, 1917, to Aug. 31, 1918, amounted to 493 tons, while 1,223 tons had been shipped out. (Nov., pg. 488.)

**Grand Trunk Pacific Ry.**—Work is reported to have been started on the enlargement of the company's locomotive house, machine shops and power house, and the laying out of additional yard tracks at the Edmonton, Alta., terminals. Other extensions, it is reported, will be undertaken in the near future. (Nov., pg. 488.)

**Grand Trunk Ry.**—At a meeting of the Ottawa City Council, Nov. 18, the question of G.T.R. crosstown tracks was discussed, and the board of control was asked to take the matter up with the company and with the Dominion Government. The consideration of motions to have bylaws submitted at the municipal elections in Jan., 1919, for raising \$190,000 for a subway under the tracks at Lyon St., and \$200,000 for a viaduct at the crossing on O'Connor St. was postponed. The present suggestion is that the crosstown lines be removed entirely, as suggested by the Federal Town Planning Commission. (Sept., pg. 390.)

**Pacific Great Eastern Ry.**—A press report stated Nov. 13, that track laying had been completed from the former track end near Clinton, to 59-Mile House, 18 miles, and that work has been started laying from 59-Mile House to a point six miles southerly from Horse Lake summit. This will complete the track laying work for the season. The Northern Construction Co., which has the contract, will carry on the deepening of cuts and other similar work on the uncompleted portions of the grade right of way into Prince George, B.C., during the winter. (Nov., pg. 488.)

**Pacific Great Eastern Ry.**—The British Columbia Government owns and operates this railway, one section of which, from North Vancouver to Whytecliffe, 13 miles, is not yet connected up with Squamish, from which point the line runs inland to Clinton, and is under construction thence to Fort George. It has been proposed that the North Vancouver-Whytecliffe section, which runs through a suburban area, should be electrified. The Premier of British Columbia is reported to have said that the government may undertake the work. There is, he added, enough water power at three points along the principal section of the line to operate the whole line to Fort George by electricity when conditions warrant its being done. We have been officially advised that only the future possibilities of electrification have been discussed, and that no active steps are being taken at present.

The deck of the new bridge at Kitsilano, on the West Vancouver-Whytecliffe section of the line, has been completed, and traffic was reported to have been run over the new bridge Nov. 7. (Nov., pg. 488.)

**St. John & Quebec Ry.**—The New Brunswick Government has decided to ask the Dominion Government to take over the St. J. & Q. Ry., which extends from Centreville to Gagetown, N.B., 121 miles, with an extension southerly, nearly completed, from Gagetown to a junction with the C.P.R. near Washfield, 37.8 miles, and a projected extension northerly from Centreville to Andover, N.B., 12 miles, surveys for which have been made. The construction was financed by the New Brunswick Government, which subsequently took over the company's charter, and the completed part of the line is being operated by the Canadian Government Railways on a percentage basis. The matter was expected to be discussed at Ottawa Nov. 19. (Nov., pg. 488.)

**Timiskaming & Northern Ontario Ry.** The Cochrane, Ont., Board of Trade is reported to have asked the Ontario Government to proceed with the extension of the T. & N.O.R. from Cochrane to James Bay, Hudson Bay.

**The Toronto, Hamilton & Buffalo Ry.** has under consideration the making of extensive alterations and additions to its Forest Ave. freight yards at Hamilton, Ont. The extension, it was reported, Oct. 23, is planned to run to a point above Emerald St., and involves the closing of Ghent St. and the removal of the Aged Women's Home on Wellington St. The City Council's special railway committee met Oct. 25, to discuss the matter, notwithstanding the fact that the formal notice of the company's intention had not been received. The committee considered that it was the company's intention to connect up the Forest Ave. delivery and storage yard with the Kinnear sorting yard at Ottawa St. The committee also considered that the building of the Red Hill cut off, as recommended in the Tye-Cauchon report (see Canadian Railway and Marine World, Sept., 1917, pg. 342) would give the company the accommodation desired, while preserving the city's interests. The committee passed the following resolution:—

"That negotiations be entered upon by the city with the railway companies concerned for the purpose of carrying out of the proposals of the Tye-Cauchon report,

and that the Board of Railway Commissioners be petitioned to co-operate with the city and railway companies during the investigations and negotiations. That the city solicitor be instructed to seek legislation empowering the Board of Railway Commissioners in the case of the City of Hamilton to carry out the provisions of the Tye-Cauchon report along the lines of the bill introduced by Senator George Lynch-Staunton on April 19, 1918, and in accordance with the suggestion of Sir James Lougheed on the introduction of the bill. That the Dominion War Board be petitioned as a measure of war relief to order the construction of the Red Hill cut off, provided by the Tye-Cauchon report, and that the City of Toronto and other municipalities affected by condition of freight congestion in the Hamilton and Niagara district be advised of the situation and asked to assist in forwarding and prosecuting this petition."

The city's works committee also gave some consideration to the matter Nov. 6, and authorized the engagement of N. Cauchon and D. Grubb to prepare a plan for carrying certain streets over the railway to give access to the mountain face park.

The Hamilton City Council received, Nov. 13, a copy of a Board of Railway Commissioners judgment, authorizing the company to proceed with its expropriation of certain properties required for the extension of its Kinnear yard at Hamilton. The council's special railway committee is considering the advisability of appealing against the judgment. (Oct., pg. 438.)

## Railway Rolling Stock Orders and Deliveries.

The Greater Winnipeg Water District has sold a 4-wheel switching locomotive to Peter Meagher, Duluth, Minn.

The Canadian Car & Foundry Co. has received an order from the Dominion Government for repairs to the Prime Minister's private car.

The C.P.R. has received 3 express refrigerator cars, 2 baggage and express cars and 1 wooden single track snow plough, from its Angus shops, Montreal.

The G.T.R., between Oct. 15 and Nov. 15, received 7 Mikado locomotives from the Canadian Locomotive Co., which were ordered by the Dominion Railways Department.

It is reported that experiments are being made in the U.S. as to the feasibility of using concrete in the construction of freight cars. It is stated that a gondola car is being built, for a thorough testing, and if satisfactory, cars of other types for freight service will be built.

Canadian Car & Foundry Co. delivered to Canadian Government Railways, recently, 30 Hart-Otis ballast cars, 50 tons capacity, and 376 steel frame box cars, 40 tons capacity. It has also delivered 49 all wood C.G.R. box cars, which have been repaired at the Montreal and Amherst plants.

The U.S. Government is reported to have recalled orders placed for 2,500 locomotives, 61,000 freight cars, and other minor equipment, intended for war service in Europe, since the signing of the armistice. The report also states that British, U.S. and French Governments have decided to pool their surplus rolling



stock in France, and in future to purchase through a common agency.

Canadian Northern Ry. received the following additions to rolling stock, up to Nov. 15:—10 switching locomotives from Canadian Locomotive Co.; 44 consolidation locomotives from Montreal Locomotive Works; 217 coal cars, 50 tons capacity, from Eastern Car Co.; 279 stock cars, 30 tons capacity, and 1,027 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co.

Canadian Government Railways, up to Nov. 15, received the following additions to rolling stock:—10 Pacific locomotives from Montreal Locomotive Works; 13 Mikado locomotives from Canadian Locomotive Co.; 323 coal cars, 50 tons capacity, from Eastern Car Co.; 396 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co., and 2 narrow gauge locomotives from Canadian Locomotive Co., for Prince Edward Island Ry.

### Railway Finance, Meetings, Etc.

**Canadian Pacific Ry.**—A dividend of 2½% on the common stock for the quarter ended Sept. 30, has been declared, payable Dec. 31, to shareholders of record Nov. 30. This dividend is at the rate of 7% a year from revenue, and 3% a year from special income account.

**Central Vermont Ry.**—The directors for the current year are: H. G. Kelley, Chairman; E. C. Smith, President; W. H. Biggar, Vice President; Frank Scott, Vice President; E. J. Chamberlin, E. A. Chittenden, W. Seward Webb, A. Tuttle, C. P. Smith, S. E. Kilner, H. S. Marston, J. G. Smith, and W. M. Macpherson.

**Grand Trunk Ry.**—Application is being made to the Dominion Parliament for authority to create and issue for the company's general purposes, additional consolidated debenture stock bearing interest at 4%, of an amount the annual interest on which will not exceed £100,000.

**Grand Trunk Ry.**—The G.T.R., which guarantees the Detroit, Grand Haven & Milwaukee Rd. bonds, offered holders of the 6% consolidated mortgage bonds of that company, due Nov. 14 and 15, to extend the time for repayment of the bonds to Nov. 14 and 15, 1920, when repayment will be made at 101% for each bond. Holders who do not accept the extension will be paid off at par.

The Dominion Parliament will be asked next session to authorize the G.T.R. to create and issue additional 4% G.T.R. consolidated debenture stock to an aggregate amount, the annual interest upon which shall not exceed £100,000.

**Guelph Junction Ry.**—The directors on Nov. 22 declared a dividend of 10% on the capital stock, all of which is held by the city of Guelph, Ont. This represents approximately \$17,000, and brings up the total dividends for the year \$57,375, or 33¼% of the city's total investment.

**Kaslo & Slocan Ry.**—After the annual meeting of shareholders, which is called to be held in Montreal, Dec. 27, a special meeting will be held to approve an agreement to lease the line to the C.P.R., and to approve of the issue of bonds for the company's purposes.

**Moncton & Buctouche Ry.**—The special meeting of shareholders called for Oct. 8, and adjourned to Oct. 15, was further adjourned. The meeting was called to consummate the sale of the railway to the Dominion Government, but we are advised it will be some time yet before mat-

ters have been adjusted so that the final transfer can be completed.

**Quebec Southern Ry.**—Quebec South Shore Ry.—The United States Supreme Court refused, Oct. 28, to review the New York Federal Court's decree dismissing a suit brought on behalf of Quebec Southern Ry. stockholders for damages growing out of the consolidation and ultimate financial ruin of that railway and the South Shore Ry. The action was brought by the late Hiram A. Hodge's estate, the amount of damages sought being \$200,000, for alleged breach of contract for the financing and consolidation of the lines.

These two lines were acquired at the judicial sale for the Delaware & Hudson Co., and are now amalgamated and operated under the title of the Quebec, Montreal & Southern Ry.

**Timiskaming & Northern Ontario Railway.**—

	Sept. 1918	Sept. 1917
Passenger receipts ....	\$54,223.19	\$70,005.34
Freight receipts .....	155,866.27	125,695.48
Total receipts .....	\$210,089.46	\$196,700.82

### Freight and Passenger Traffic Notes.

The Kettle Valley Ry. has stopped operating daylight trains 3 and 4, between Penticton and Petain (Hope), B.C.

The C.P.R., on Nov. 3, withdrew the compartment observation cars from trains 51 and 52 between Winnipeg, Man., and Edmonton, Alta.

The Timiskaming & Northern Ontario Ry.'s eastbound traffic, via Cochrane, Ont., in September, was 928 cars, an increase of 5.4% over August. The westbound traffic was 373 cars, an increase of 7.5% over August.

The Canadian Northern Ry. is reported to have opened a tourist and travel bureau at 605 Hastings St. W., Vancouver, to give information and arrange tours throughout America, Europe and Asia, etc. R. Hay is in charge.

The C.P.R. has substituted dining cars for cafe parlor cars on trains 353, 354 and 356 between Montreal and Quebec. These trains also carry two 22-seat parlor cars, one containing a drawing room, and the other a buffet and observation end.

We are officially advised that the Dominion Atlantic Ry. has been operating a tri-weekly service over its North Mountain branch since Aug. 15. The present timetable has been effective since Sept. 29 and shows a train service on Tuesdays, Thursdays and Saturdays.

The Grand Trunk Pacific Ry. began to run its trains into the C.P.R. passenger station and freight terminals in Saskatoon, Sask., Oct. 24. Prior to that date passengers had to make a three mile auto bus transfer from the G.T.P.R. station into the center of Saskatoon.

The through standard sleeping car between St. Paul, Minn., and Vancouver, B.C., and the tourist sleeper between St. Paul and Edmonton, Alta., have been withdrawn, the cars now only being run between St. Paul and Moose Jaw, Sask., at which point through passengers change to and from C.P.R. main line cars.

Railway traffic, particularly in Saskatchewan and Alberta, was rather badly hit during the influenza epidemic, which has now practically worn itself out. Not only were the number of trains reduced on branch lines throughout the provinces, owing to the illness of railway employees,

but under the regulations put in force by the public health departments of the two provinces, large numbers of places were quarantined, and for some time the railway companies refused to sell tickets to these points.

The Edmonton, Dunvegan & British Columbia Ry., with its associated lines—the Alberta & Great Waterways Ry. and the Central Canada Ry.—put in operation from Nov. 6 to Nov. 15, a special rate for carrying cattle and sheep in carload lots to the Peace River Valley and other points.

The Alberta & Great Waterways Ry. put its winter timetable in operation Nov. 3, between Edmonton and Lac la Biche, Alta. A train leaves the Edmonton station at the corner of 121st St. and 107th Ave., at 8.30 a.m., Mondays and Fridays, arriving at Lac la Biche, at 6.30 p.m., returning therefrom at 6.30 a.m., Tuesdays and Saturdays, and arriving in Edmonton at 4.30 p.m. Between Lac la Biche and the end of track near MacMurray, an occasional train service is provided by the contractors.

The Edmonton, Dunvegan & British Columbia Ry., in conjunction with the Central Canada Ry., put on its winter through service to Spirit River and Peace River, Alta., Nov. 3. A train leaves the Edmonton station at 121st St. and 107th Ave. at 3 p.m., Mondays and Thursdays, and arrives there on the return trip at 9.30 p.m., Wednesdays and Saturdays. McLennan, the junction point with the C.C.R., is reached at 6 a.m.; Spirit River, 12.30 p.m.; Grande Prairie, 5.30 p.m., and Peace River, 12.30 p.m., Tuesdays and Fridays. The return train leaves Grande Prairie 6.30 a.m., Spirit River 11.20 p.m., Peace River 8 p.m., Tuesdays and Fridays, and McLennan, 6.30 a.m., Wednesdays and Saturdays.

### "No Strike" Order Cancelled.

The Dominion order in council prohibiting railway and other lockouts and strikes for the duration of the war was published in full in Canadian Railway and Marine World for November. On Nov. 14, the following statement was issued by the Labor Department:—

"On the recommendation of the Minister of Labor, the government yesterday revoked the 'no-strike' order-in-council, passed on Oct. 11, 1918. The immediate necessity of the original order was caused by a threatened strike, staged for Thanksgiving Day, by some 5,000 labor men. The order was not regarded by the Government as placing any disability upon the great majority of labor organizations who had accepted the government's war labor policy, as announced by order in council in July last, and were submitting all their grievances to the tribunals designated which were being operated with perfect success. The 'no-strike' order was issued only for the purpose of maintaining industrial peace during the continuance of the war, and is cancelled because it has served its purpose and is no longer necessary."

**Maritime Coal & Ry. Co.**—The Nova Scotia Government, on Nov. 6, approved, after amendment, the M.C. & R. Co.'s bylaw providing for increased freight rates, such rates to become effective on the same date as the company puts into effect the McAdoo scale of wages, and makes it applicable to all the employees, the new tariff to remain in force for the duration of the war and until further ordered.



## Canadian Transportation Men, Engineers, Etc. in the War.

**Demobilization of Railway Troops.**—The first step in regard to demobilization and the placing of soldiers back in civilian employment is reported to have been taken by the Militia Department. An order has been sent to every military district requesting the authorities to furnish information at once as to the number of men now attached to railway battalions

high tribute to the railway workers at the front. He said that if ever heroes deserved to be sung of it was the railway men. The latter were equal in heroism to any other body who served in the war. They built their lines right up to the front. They disdained danger. The engineers did things in the way of construction, which for speed and daring had

acceptance of hardship—all this was very fine, indeed.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, to July 31, had contributed \$92,749.41 to the Red Cross Society and the Canadian Patriotic Association.

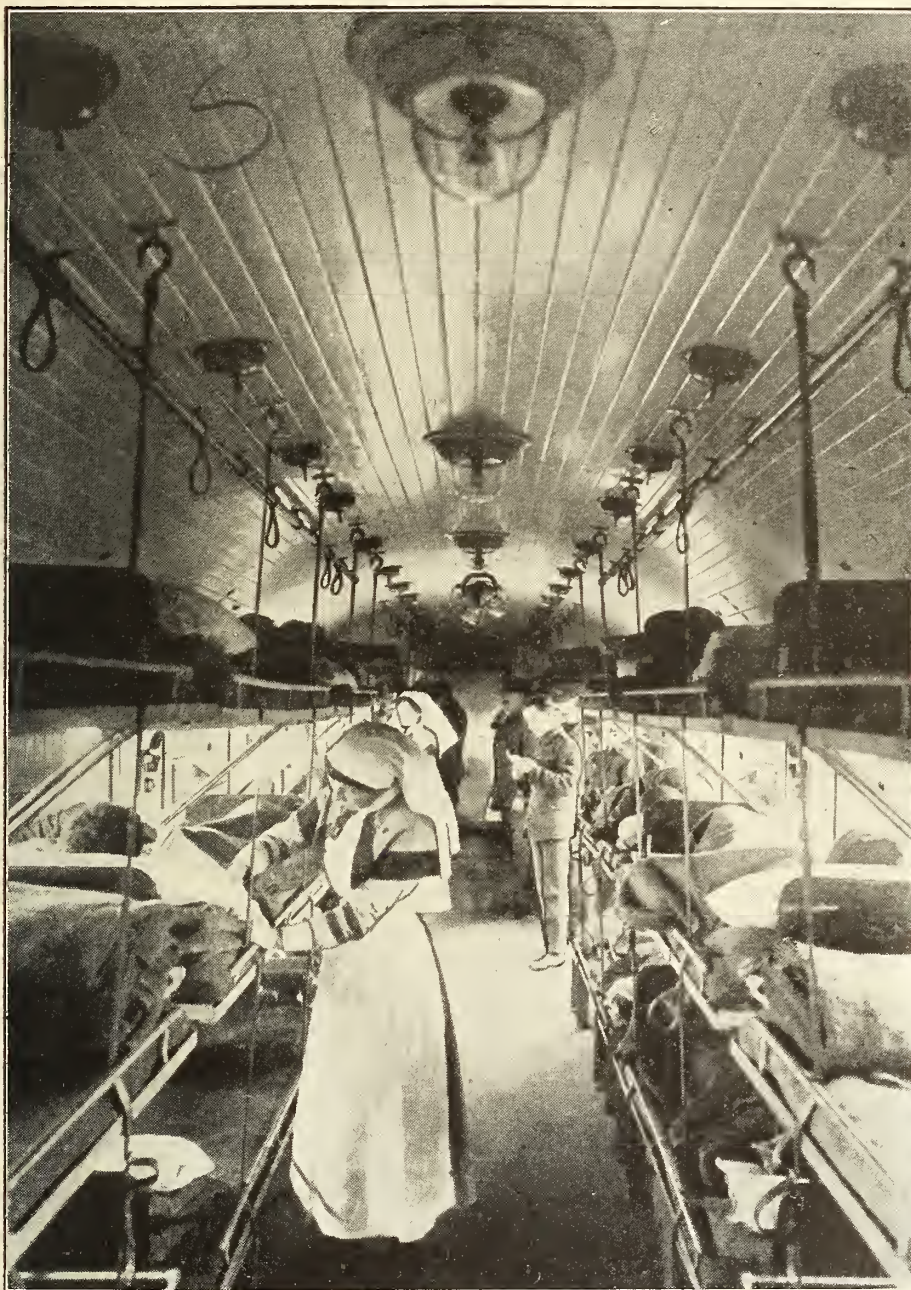
### PERSONAL NOTES.

Sergt. L. Creighton, reported admitted to the General Hospital, Boulogne, France, Oct. 12, with gunshot wound in the knee, and K. Creighton, reported wounded, Oct. 10, are sons of H. C. Creighton, Superintendent, Canadian Express Co., St. John, N.B.

Lieut. J. S. Flanagan, recently reported killed in action in France, entered C.P.R. service in the Passenger Department, London, Eng., in 1912. He enlisted in Dec., 1914, and was given a commission in the 3rd County of London Regiment, Nov., 1915.

Private R. C. Morland, King's Liverpool Regiment, recently killed in action at Hendecourt, France, was 26 years old. He entered C.P.R. service in Liverpool, Eng., Apr. 15, 1907, and enlisted Feb. 8, 1916. He was mentioned in dispatches three times, and awarded the Military Medal.

Brigadier-General J. W. Stewart, D.S.O., formerly of Foley Bros., Welch & Stewart, railway contractors, Vancouver, B.C., who, it was announced recently, had been appointed to control the railway operations in France, has an appreciative friend in A. B. Cook, who has also been associated with railway building in Canada and elsewhere. While not accurate in all detail, the following statement indicates the manner of the man, whose work has received considerable praise from the authorities:—"Let me tell you of the case of Jack Stewart of Canada. He came out from the old country 30 years ago and worked for \$1 a day driving a team on a Canadian railroad. He got on in the world and in time amassed a fortune. The war broke out and Stewart enlisted as a private. He got to France and when he saw the engineers of the French and British armies at work, it gave him the itch. There was too much red tape. It took a month to have a thing started let alone completed. To build a little bridge a bunch of European engineers would take weeks. Stewart asked leave to take a hand in some of the transport work. In time he gained this privilege and when a bit of a bridge was to be built, three weeks was the time given some British engineers. 'I'll do it in two days with 1,000 Canadians,' volunteered Stewart. They gave him his way and he built the bridge in a day and a half. He built the systems of light railways up to the front line. Before he went in, the Englishmen hauled wagons and guns by hand or by horses in the way their fathers did it. Stewart networked the front lines with light railways. He went to the hills of Canada and gathered together 5,000 rough-neck railway men, bridgemen, axemen and mule skinnors, and they gave him full charge of the building of railways for all the allied armies. The allied lines never went ahead a hundred yards without being followed by a band of steel over which Stewart made it possible to keep the front line supplied constantly with men, guns and food. This was what baffled the Germans more than anything else. They couldn't understand it and never will understand it. The people of



Interior of a ward on a British ambulance train in France.  
British official photograph. Crown copyright reserved. Photograph loaned by C.P.R.

who have actual railway experience. The military authorities understand this order to mean that the railway troops will be demobilized first. The method adopted to reduce the strength of units locally will be to board all men and discharge those in the lower categories. In discharging the men of low categories, preference will be shown towards the married men and the older men.

**The Railway Troops Service.**—Rev. Dr. Beatty, of the Canadian chaplain service, preaching in Montreal recently, paid a

never been equalled. In many cases, the engineers in charge undertook, at the request of the fighting command, duties which it could not be supposed would ever be carried out—that is, the laying down of strategic railways on the instant, as it were. There would be a sudden need for this railway; and the engineers would do the impossible, and finish the job on time. The network of railways, right up to the lines, was something wonderful, and the endurance, the cheerfulness of the men, their initiative, their



America can thank God that before the United States went in Jack Stewart of Canada got his way at the front. He was the connecting link in bringing to bear on offensive and defensive works of warfare the system of doing things originated in the western states and in western Canada. There is nothing that a railway construction man will not tackle and there is little in the building line that he cannot do. And the best part of the story is that you never hear about Stewart in the papers. He is never decorated or knighted or any of the rest of it. He is a brigadier general in the Canadian army. But he is a silent worker."

Lieut. W. A. Stewart, who has been awarded the Military Cross recently, is son of W. A. Stewart, formerly Superintendent, Ontario-St. Lawrence canals. He enlisted with the 59th Battalion, Kingston, Ont., and was wounded in August.

Lieut. John Hatherly Way, eldest son



Lieutenant J. H. Way.

of Capt. J. B. Way, of Sault Ste. Marie, Ont., who was killed in action, east of Arras, France, Aug. 27, was born in the Nipissing District, Apr. 17, 1889, educated in the public schools and collegiate institute at Sault Ste. Marie, Ont., entered the service of the Imperial Bank, and was located at Rosthern, Sask., on the outbreak of war. He attended the School of Infantry at Toronto, holding a commission in the 51st Regiment, Sault Ste. Marie Rifles, and was appointed one of the officers of the 119th Battalion at its formation, taking an active part in the recruiting of that unit in the Algoma District. He proceeded to Camp Niagara in May, 1916, and overseas in July, 1916. On the break up of the unit in England he was posted to the 58th Battalion in France and was engaged with that unit during the heavy operations before Amiens, and east of Arras, where he was killed by machine gun fire, deeply regretted by his brother officers and the men of his unit, by whom he was highly esteemed. His father, Capt. J. B. Way, Freight and Passenger Agent, C.P.R., Sault Ste. Marie, went on duty with the Sault Ste. Marie Military Guard

shortly after war broke out, and on Mar. 15, 1915, obtained leave of absence from the C.P.R. for military service, proceeding to Camp Niagara, Ont., as Paymaster of the Machine Gun Corps, remaining there until November, 1918, when he accompanied the corps to Exhibition Camp, Toronto.

### Valuation of Materials, Etc., for Dominion Taxation Purposes.

R. W. Breadner, Commissioner of Taxation, Finance Department, Ottawa, in a paper read before the Dominion Association of Chartered Accountants recently, said:—"Another question of vital importance to those engaged in business at present is that of inventories. Owing to the very high prices now prevailing, and the practical certainty of a drop when normal conditions return, the department has ruled that inventories of merchandise shall be taken at cost, or at market values if less than cost. It is no business of the department if a company sets aside a reserve against the contingency of a

### Flagging Protection on Double Tracks.

The Board of Railway Commissioners passed general order 255, Nov. 20, as follows:—"Re the question of more adequate flagging protection on double tracks and the proposed amendment to rule D35 of General Train and Interlocking Rules, as outlined in circular 163, Apr. 9, 1918, and submitted for consideration to the railway companies. Upon reading the replies filed by and on behalf of the railway companies, and the written submissions and representations made to the board on behalf of the Brotherhood of Locomotive Engineers; and upon the report and recommendation of the board's Chief Operating Officer, it is ordered that General Train and Interlocking Rules, approved by order 7563, July 12, 1909, be amended by striking out the first paragraph of double track rule 35 and substituting therefor the following:—

"D35. A yellow flag or yellow light placed beside the track on the same side as the engineer of an approaching train,



Rapid Railway Construction on British Western Front in France. British official photograph. Crown copyright reserved. Photograph loaned by C.P.R.

future fall in prices, but whether any part or the whole of that reserve will be allowed as an expense can only be determined after scrutiny of the returns for assessment purposes, and consideration of the conditions that have arisen after the setting aside of that reserve. The department cannot settle that question in advance."

The Canadian Northern Ry. and the Grand Trunk Pacific Ry.—Recent press reports in the western provinces stated that the management of these two lines had arranged a close co-operation throughout the west, whereby each will use those parts of the other's tracks and terminals where such use can be more economically made in giving public service than in using its own facilities. We were officially advised Nov. 13, that the only arrangement of the kind the C.N.R. has in contemplation is running rights over the G.T.P.R. from Regina to Moose Jaw, Sask., the G.T.P.R. to use the C.N.R. terminals in Moose Jaw. Reference to this matter will be found under Canadian Northern Ry. Construction on another page. No other arrangements, we are advised, have been made; in fact, the Moose Jaw agreement will not be signed until some minor differences between the companies are adjusted.

or, where the practice is for trains to run to the left, a yellow flag or yellow light placed on the left side of the track, as well as on the same side (between tracks) as the engineer of an approaching train, so that the engineer of the approaching train shall have a clear view of said signal for a distance of at least 1,200 ft.—indicates that the track 3,000 ft. distant is in condition for a speed of but 6 miles an hour, unless otherwise instructed, and the speed of the train will be controlled accordingly. A green flag or a green light placed beside the track on the same side as the engineer of an approaching train, or on the left side of the track, if so operated, at a point beyond the slow track, indicates that full speed may be resumed."

Railway Lands Patented.—Letters patent were issued during October, respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Canadian Northern Ry. ....	160.00
Canadian Northern Western Ry. ....	318.55
Edmonton, Dunvegan & British Columbia Ry. ....	56.33
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. ....	321.00
Total . . . . .	855.88



## Mainly About Railway People Throughout Canada.

**G. M. Hickey**, station master, C.P.R. station, Calgary, Alta., died there, Nov. 1, aged 25.

**W. R. Flynn**, of the special service department, Canadian Northern Ry., died at Port Arthur, Ont., Nov. 7, aged 29, from influenza.

**John Maughan**, who died at Toronto, Nov. 28, was father of W. Maughan, Assistant General Passenger Agent, Eastern Lines, C.P.R., Montreal.

**Sir George Bury**, who retired recently from the Vice Presidency of the C.P.R., was born Mar. 6, 1866, and not in 1886, as stated in our last issue.

**Charles A. Lutz** has been appointed Treasurer, United States Railroad Administration, vice L. G. Scott, Comptroller, Wabash Ry., acting Treasurer, resigned.

**L. C. Clarke**, engineer and contractor, North Bay, Ont., who died recently, aged 38, was for some time engaged on contract work on the C.P.R. Lake Superior Division.

**Frederick Hamilton Baker**, only surviving son of W. R. Baker, C.V.O., ex Secretary, Canadian Pacific Ry., Montreal, died at Edmonton, Alta., Nov. 2, aged 28.

**James Barbour**, Claims and Right of Way Agent, Canadian Northern Ry., Toronto, who died there, Oct. 17, left an estate of \$32,725, his widow being sole beneficiary and executor.

**D. C. Coleman**, Vice President, Western Lines, C.P.R., made his first trip of inspection since his recent appointment, from Winnipeg to Victoria, B.C., during the latter part of October and early part of November.

**Grant Hall**, Vice President, C.P.R., was entertained to luncheon, Nov. 16, by the company's Winnipeg staff, on finally leaving there for Montreal after several years residence, latterly as Vice President and General Manager, Western Lines, C.P.R.

**O. H. Kerr**, Travelling Auditor, C.P.R., who died at Revelstoke, B.C., Nov. 5, aged 30, entered C.P.R. service in Aug., 1902, as office boy, and was promoted to clerk in Sept., 1903, and to Assistant Travelling Auditor, Dec. 1, 1912. He was appointed Travelling Auditor July 1, 1913.

**W. A. Mather**, General Superintendent, Saskatchewan District, C.P.R., Moose Jaw, of whom some biographical data were given in our last issue, was incorrectly referred to as General Superintendent, Manitoba District, C.P.R., Winnipeg. His correct title was given in the list of transportation appointments in the same issue.

**C. A. Hayes**, General Manager, Eastern Lines, Canadian Government Railways, was presented with a chest of silver by the staff at Moncton, N.B., Nov. 20, on leaving there for a western trip, prior to taking up his appointment as Vice President in charge of traffic, Canadian Northern Ry. System and Canadian Government Rys., Toronto.

**Capt. P. W. Freeman**, reported wounded in the leg near the knee recently, is son of P. A. Freeman, Chief Engineer, Nova Scotia Tramways Co., Halifax, N.S. This was his third time wounded, and in addition he was gassed once. His brother, Lieut. H. G. Freeman, returned to Nova Scotia recently and was discharged owing to influenza. On his recovery he applied

to be sent overseas again, but peace has supervened.

**James Powell**, chief draftsman, Motive Power Department, G.T.R., Montreal, has



*3/2/19*  
**A. E. Warren**,  
General Manager, Western Lines, Canadian Northern Ry. System—Canadian Government Railways.



**Geo. Hodge**,  
Assistant to Vice President, Eastern Lines, C.P.R.

retired, and has been appointed instructor in mechanical drawing, for the re-education of returned soldiers, at the Montreal Technical School, under Canadian Government (Civil Service) Hospital Commission. He had been in G.T.R. service for

36 years, and since 1899, as chief draftsman of the Motive Power Department. He has also been Secretary of the Canadian Railway Club for about 12 years.

**A. P. Barnhill, K.C.**, who has been appointed a director of the Canadian Northern Ry. Co., was born at St. John, N.B., May 27, 1863, and was admitted as a barrister in 1889, and a K.C. in 1905. He practises in St. John, and was President, St. John Barristers Society in 1908-09. He is associated with several industrial and financial undertakings, and was a member of the International Commission created in 1908, to consider treaty rights and the joint use of the St. John River.

**Thomas Cantley**, who has been appointed a director of the Canadian Northern Ry. Co., was born at New Glasgow, N.S., in 1854, and commenced his business life as a telegraph operator. He entered business on his own account as T. Cantley & Co., in 1878, and entered Nova Scotia Steel & Coal Co.'s service in 1885, and was appointed Assistant Manager in 1889; General Manager, 1901, and was subsequently also Vice President, and President of the company, and latterly, Chairman of the board of directors.

**Patrick M. Cotter**, Freight and Passenger Agent, Quebec Central Ry., Quebec, Que., died there Nov. 26, aged 65. He was born at Quebec, Que., and at 15 years old entered transportation service in the North Shore Ry. office, and was later transferred to Ottawa, the company having been absorbed into the C.P.R. He subsequently returned to Quebec and entered Quebec & Lake St. John Ry. service, eventually becoming station agent, and in 1903 transferred to Quebec Central Ry. service. He was a director of the Magdalen River Ry. Co.

**William J. Robider**, whose appointment as General Master Car Builder, C.P.R., Montreal, was announced in our last issue, was born at Savannah, Ga., Feb. 15, 1869, and entered railway service in Oct., 1884, since when he has been, to Oct., 1905, apprentice, assistant foreman, Car Department, and foreman, Passenger Car Department, Central of Georgia Ry., Savannah, Ga.; Oct., 1905, to Oct. 15, 1918, Master Car Builder, same road, and since the operation of U.S. railways by the U.S. Railroad Administration, alternative member of the Committee on Standards and Inspection.

**Robert Phipps Ormsby**, who has been appointed Secretary, Canadian Northern Ry. Co., Toronto, was born at Arklow, Ireland, June 26, 1869, and was educated at Reading and Ipswich Grammar Schools, and Cambridge University, England. He was for a short time in C.P.R. service at Vancouver, B.C., and later with the Great Northern Ry. at St. Paul, Minn. He entered Canadian Northern Ry. service in 1902, as secretary to the Chief Solicitor, and in 1910 was appointed Assistant Secretary of the company, which position he held until his recent appointment as Secretary.

**Emery C. P. Cushing**, who has been appointed Assistant Purchasing Agent, C.P.R., Winnipeg, was born at Ottawa, Ont., Nov. 13, 1886, and entered C.P.R. service Dec. 1, 1902, since when he has been, to Mar. 15, 1907, clerk and stenographer, Passenger Department, Ottawa; Mar. 15, 1907, to Aug. 1, 1908, clerk and stenographer, General Passenger Department, Montreal; Aug. 1, 1908, to Aug. 1, 1912, clerk and stenographer, President's office, Montreal; Aug. 1, 1912, to May 1, 1918,



chief clerk and secretary to the President (Lord Shaughnessy), Montreal; May 1 to Sept. 30, Assistant to General Purchasing Agent, Montreal.

**J. D. McDonald**, who has been appointed Assistant General Passenger Agent, Eastern Regional District, U.S. Railroad Administration, Chicago, Ill., was born at Toronto, Aug. 27, 1855, and entered Grand Trunk Ry. service in 1868, since when he has been, to 1870, messenger, Toronto; 1870 to 1875, assistant ticket agent, Toronto; 1875 to 1896, ticket agent, Buffalo, N.Y.; 1896 to May, 1902, City Passenger and Ticket Agent, Buffalo, N.Y.; May, 1902, to Mar. 1, 1911, District Passenger Agent, Toronto; Mar. 1, 1911, to Oct., 1918, Assistant General Passenger Agent, Chicago, Ill.

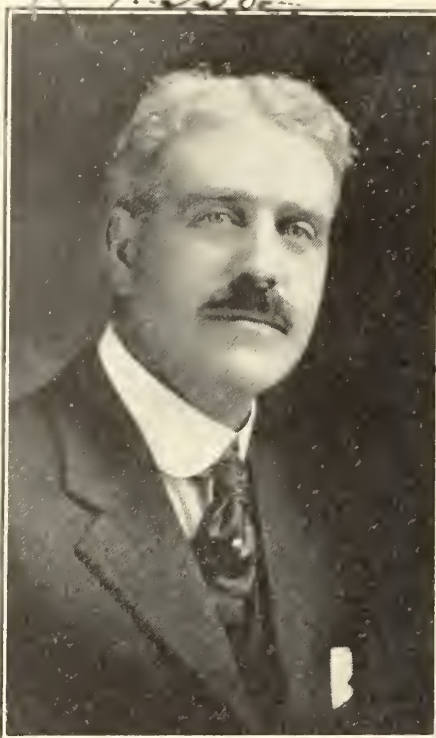
**Sir Hormisdas Laporte**, who has been appointed a director of the Canadian Northern Ry. Co., was born at Lachine, Que., Nov. 7, 1850, and was educated at Sault au Recollet, and McGill University. He entered business life in the retail grocery trade and passed to the wholesale trade in 1881. He was one of the founders of the Montreal Chamber of Commerce, and was a president of that body. He is President of the Saraguay Electric Co., was at one time one of the harbor commissioners for Montreal, and was Mayor of the city 1904 to 1906, and is associated with several industrial and charitable organizations.

**Hon. Gideon D. Robertson**, who was appointed Minister of Labor in the Dominion Government, Nov. 7, was born at Welland, Ont., Aug. 26, 1874. He was, from June, 1892, to Aug., 1896, telegraph operator, G.T.R., London Division; Aug., 1896, to Sept., 1901, telegraph operator, C.P.R., Eastern Division; Sept., 1901, to Apr., 1908, agent and yardmaster, C.P.R., Atlantic Division; Apr., 1908, to Feb. 1914, General Chairman, Order of Railroad Telegraphers on the C.P.R., and Feb., 1914, to Jan. 1, 1918, Canadian Vice President, Order of Railroad Telegraphers. He was appointed a senator, Jan. 31, 1917, and a government minister without portfolio, Oct. 23, 1917.

**Charles Percy**, who died at Westmount, Quebec, Nov. 30, aged 74, was formerly Treasurer, G.T.R., and retired from active service in 1900. He commenced his railway service in the railway clearing house in London, Eng., and was subsequently secretary of an association regulating the railway traffic between England and Scotland. In 1875 he was selected as Treasurer for the Great Western Ry. of Canada, and afterwards became associated with the Midland Ry., both of which are now parts of the G.T.R. system. He was later, Secretary-Treasurer, Chicago & Grand Trunk Ry. Co., and was appointed Assistant to the General Manager, G.T.R. at Montreal, in 1886, and Treasurer of the company in 1894.

**T. A. Wilson**, whose appointment as Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., was announced in our last issue, entered railway service in Jan., 1885, since when he has been, to July, 1892, successively, call boy, Stratford, Ont.; operator and brakeman, G.T.R.; July, 1892, to Oct., 1900, agent and operator at various points. Lake Superior Division, C.P.R.; Oct., 1900, to Oct., 1912, General Yardmaster, C.P.R., Ottawa, Ont.; Oct., 1912, to June, 1916, Assistant Superintendent, District 3, Lake Superior Division, C.P.R., Schreiber, Ont.; June, 1916, to Oct. 16, 1918, Assistant Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont.

**A. E. Warren**, who has been appointed General Manager, Western Lines, Canadian Northern Railway System, Canadian Government Railways, Winnipeg, was born at Taunton, Eng., June 9, 1874, entered railway service in 1889, and served



G. L. Courtney,  
General Manager, Pacific & Great Eastern Ry.



C. E. Stockdill,  
Assistant to Vice President, Western Lines, C.P.R.

in various capacities in Car Service Department, Superintendent's, General Superintendent's and Manager's offices, and station and yard service, C.P.R., until July, 1901, when he resigned to enter mercantile business. He entered Canadian Northern Ry. service in Aug., 1902, and has served as station agent, chief

clerk to General Manager, Superintendent, General Superintendent and Assistant to General Manager, Western Lines. From Jan. 1 to Aug. 1, 1918, he was loaned to the Dominion Government and acted as Chief Operating Officer, Department of Railways and Canals, Ottawa.

**Lord Shaughnessy**, Chairman, C.P.R. Co., left Montreal, Nov. 23, for a trip to England. While there he will meet his son, Capt. W. J. Shaughnessy, who has spent considerable time in France, and may possibly visit France, where his other son, Capt. A. T. Shaughnessy, who was killed in the earlier stages of the war, is buried. A Montreal daily paper states that when Lord Shaughnessy is in London, he will "take his seat for the first time in the House of Lords." Our contemporary is a little behind the times, as Lord Shaughnessy took his seat in the House of Lords, Nov. 23, 1916.

**George L. Courtney**, whose appointment as General Manager, Pacific Great Eastern Ry., Vancouver, B.C., was announced in a recent issue, was born at Chatham, Ont., Oct. 7, 1868, and entered transportation service in 1884, since when he has been, to 1886, clerk, G.T.R., Chatham, Ont.; 1887 to 1889, clerk, G.T.R., Hamilton, Ont.; 1889 to 1890, clerk, C.P.R., Vancouver, B.C.; 1890 to 1895, Traffic and Passenger Agent and Contracting Freight Agent, C.P.R., Victoria, B.C.; 1896 to 1900, Agent, C.P.R., Victoria, B.C.; 1900 to 1906, Traffic Manager, Esquimalt & Nanaimo Ry., Victoria, B.C.; 1906 to 1908, District Freight and Passenger Agent, C.P.R., and Esquimalt & Nanaimo Ry., Victoria, B.C.; 1908 to 1915, in private business; 1916 to June, 1918, Agent, Canadian Pacific Ocean Services, Ltd., Hong Kong, China.

**George Hodge**, whose appointment as Assistant to Vice President, Eastern Lines, C.P.R., Montreal, was announced in our last issue, was born there, Oct. 2, 1874, and entered C.P.R. service Mar. 24, 1890, since when he has been, to Aug., 1890, junior clerk, Passenger Department; Aug., 1890, to Apr., 1892, clerk, Vice President's office; Apr., 1892, to June, 1896, secretary to Vice President; June, 1896, to Jan., 1907, chief clerk to Vice President; Jan., 1907, to July, 1908, Superintendent, Montreal Terminals; July, 1908, to Feb., 1911, Superintendent, District 3, Eastern Division, all at Montreal; Feb., 1911, to Mar., 1912, Superintendent, District 2, Ontario Division, London, Ont.; Mar., 1912, to May, 1915, General Superintendent, Eastern Division, Montreal; May, 1915, to Oct., 1918, Assistant to General Manager, Eastern Lines, Montreal.

**B. J. Farr**, whose appointment as Superintendent of Motive Power and Car Department, Grand Trunk Western Lines Rd., Detroit, Mich., was announced in our last issue, was born at Elenburg, N.Y., Sept. 8, 1876, and entered railway service in 1893, since when he has been, to 1898, machinist apprentice, Central Vermont Ry., St. Albans, Vt.; 1898 to 1900, Erecting Shop Foreman, same road, St. Albans, Vt.; 1900 to 1905, General Foreman, same road, St. Albans, Vt.; 1905 to 1906, General Foreman, Motive Power and Car Department, Delaware & Hudson Co., Schenectady, N.Y.; 1906 to 1908, Master Mechanic, Motive Power and Car Department, United Fruit Co., Port Limon, Costa Rica; 1908 to 1914, Engineering Department, Panama Canal, Gatun and Cristobel, Panama; 1914 to 1916, General Foreman, G.T.R., Battle Creek, Mich.; 1916 to Oct., 1918, Master Mechanic, G.T.R., Battle Creek, Mich.



**Charles Chardon Labrie**, whose appointment as Purchasing Agent, Canadian Northern Ry., Vancouver, B.C., was announced in our last issue, was born at Quebec, Que., Sept. 8, 1882, and entered transportation service, May 7, 1905, since when he has been, to June, 1906, material agent, James Bay Ry., Mackenzie, Mann & Co., Ltd., Toronto; June, 1906, to July, 1907, clerk, Chief Engineer's office, same company, Toronto; July, 1907, to Sept., 1909, assistant construction accountant, same company, Toronto; Sept., 1909, to July, 1910, construction accountant, same company, Toronto; July, 1910, to Dec., 1912, construction accountant, Canadian Northern Eastern Ry., Stewart, B.C.; Dec., 1912, to Mar., 1918, Managing Accountant and Purchasing Agent, Mount Royal Tunnel & Terminal Co., Mackenzie, Mann & Co., Montreal; Mar. to Oct. 31, 1918, Auditor, Canadian Northern Pacific Ry., Vancouver, B.C.

**James Joseph Walker**, formerly Mechanical Accountant, Intercolonial and Prince Edward Island Rys., who died Oct. 28, was born at Halifax, N.S., Mar. 6, 1854. He entered Government railways services Sept. 3, 1869, since when he was, to Nov. 1, 1869, station master, Bedford, N.S.; Nov. 1, 1869, to Nov. 1, 1871, operator, Halifax, N.S.; Nov. 1, 1871, to Dec. 1, 1872, clerk, Halifax, N.S.; Dec. 1, 1872, to Nov. 1, 1873, operator and baggage master, St. John, N.B.; Nov. 1 to Dec. 1, 1873, brakeman, Halifax, N.S.; Dec. 1, 1873, to July 1, 1874, clerk, Moncton, N.B.; July 1, 1874, to Feb. 1, 1875, operator and baggage master, Halifax, N.S.; Feb. 1, 1875, to Aug. 1, 1898, clerk, Moncton, N.B.; Aug. 1, 1898, to Jan. 1, 1904, chief clerk, Moncton, N.B.; Jan. 1, 1904, to Sept. 1, 1916, when he was granted a pension by the Intercolonial and Prince Edward Island Railways Employees' Provident Fund.

**P. Carleton Perry**, whose appointment as Assistant Resident Engineer, Grand Trunk Pacific Ry., Regina, Sask., was announced in our last issue, was born at Fort William, Ont., July 27, 1889, and entered railway service, May 6, 1906, since when he has been, to Nov., 1909, axeman, chainman, rodman and inspector, G.T.P.R., Fort William, Ont.; Dec., 1909, to Mar., 1910, rodman, Northern Pyrites Co., Superior Jct., Ont.; Apr. to Nov., 1910, inspector, G.T.P.R., Fort William, Ont.; Dec., 1910, to Nov., 1911, level man and topographer, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont.; Jan. to Mar., 1912, draftsman, G.T.P.R., Fort William, Ont.; Apr. to Aug., 1912, instrument man, G.T.P.R., Fort William, Ont.; Aug., 1912, to Sept., 1914, draftsman, G.T.P.R., Fort William, Ont.; Apr. to June, 1915, rodman, G.T.P.R., Fort William, Ont.; June, 1915, to July, 1916, rodman, G.T.P.R., Edmonton, Alta.; July, 1916, to Sept., 1918, instrument man, G.T.P.R., Edmonton, Alta.

**Robert Arnott Sewell**, whose appointment as Assistant Superintendent, Montreal Terminals Division, Quebec District, C.P.R., Montreal, was announced in our last issue, was born at Brampton, Ont., Sept. 2, 1880. He entered transportation service with the Canadian Express Co., as clerk at Brampton, Ont., in Jan., 1895, and remained in that service until May, 1898, when he entered C.P.R. service, since when he has been, to Dec., 1898, assistant agent, Cheltenham, Ont.; Dec., 1898, to Apr., 1899, operator at various points on the Eastern Division; Apr., 1899, to Aug., 1903, operator; relieving agent and dispatcher at various points on the Ontario Division; Aug., 1903, to Jan.,

1912, agent and dispatcher at various points on the Western Lines; July, 1914, to Dec., 1916, agent, Oshawa, Ont.; Dec., 1916, to Nov., 1917, Chief Dispatcher, Toronto; Nov., 1917, to Oct., 1918, Inspector of Transportation, Eastern Lines, and for a short time, acting Superintendent, Tren-ton Division, Ontario District.

**William C. Paul**, who has been appointed Trainmaster, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., was born at Coldstream, Ont., Dec. 22, 1889, and entered railway service Feb. 1, 1907, since when he has been, to Sept., 1908, car checker, Algoma Central & Hudson Bay Ry., Tagona, Ont.; Sept., 1908, to May, 1910, clerk, General Superintendent's office, same road, Sault Ste. Marie, Ont.; May, 1910, to Feb., 1911, accountant, same road, Sault Ste. Marie; Feb., 1911, to Oct., 1914, chief clerk, Superintendent's office, same road, Sault Ste. Marie; Oct., 1914, to May, 1916, chief clerk, General Superintendent's office, same road, and Algoma Eastern Ry., Sault Ste. Marie; May to Dec., 1916, chief clerk, General



W. J. Robider.  
General Master Car Builder, Canadian Pacific Ry.

Manager's office, A.C. & H.B.R., Sault Ste. Marie; Dec., 1916, to Jan. 15, 1917, chief clerk, Chief Engineer and General Superintendent's office, same road, Sault Ste. Marie; Jan. 15, 1917, to Nov. 18, 1918, Assistant Trainmaster, same road, Steelton, Ont.

**Chester P. Siems**, head of the Siems-Carey Railway & Canal Co., died at his home in New York, N.Y., Oct. 23, aged 33. He was born at St. Paul, Minn., and graduated from Yale in 1907, after which he entered the engineering department of the Spokane, Portland & Seattle Ry. In 1908 he joined his father in forming the firm of Siems & Co., for carrying out large construction programmes for the Great Northern and the Northern Pacific Ry. In 1911 the firm was converted into the Siems-Carey Co., and Mr. Siems was elected president. In Feb., 1912, the Marsh-Siems-Carey-Smith Co. and the Siems-Carey, Ltd., both construction companies, were launched, and carried out contracts for the Chicago,

Milwaukee & St. Paul, Grand Trunk, and the Canadian Pacific Rys. Mr. Siems in 1916 established the Siems-Carey Railway & Canal Co. It had a contract for 2,000 miles of railway construction in China, against which protest was made by the Japanese Government and it was postponed.

**Robert Walton**, appointed recently Division Master Mechanic, Farnham Division, Quebec District, C.P.R., Farnham, Que., was born at Peterborough, Ont., Oct. 16, 1880, and entered C.P.R. service, Nov. 9, 1895, since when he has been, to Mar. 10, 1896, lighting switch lamps, Havelock, Ont.; Mar. 10, 1896, to Sept. 13, 1897, clerk and checker, Havelock, Ont.; Sept. 13, 1897, to Sept. 17, 1898, wiper, Havelock, Ont.; Sept. 17, 1898, to Aug. 11, 1899, fireman, Havelock, Ont.; Aug. 11, 1899, to Sept. 2, 1900, fireman, Toronto; Sept. 2 to Nov. 2, 1900, fireman, Havelock, Ont.; Nov. 2, 1900, to Feb. 21, 1905, fireman and night foreman, Havelock, Ont.; Feb. 21, 1905, to Oct. 2, 1907, locomotive man, Havelock, Ont.; Oct. 2, 1907, to Mar. 21, 1908, locomotive man, Toronto; Mar. 21, 1908, to May 16, 1912, locomotive man, Havelock, Ont.; May 16, 1912, to June 3, 1916, locomotive man, Toronto; June 3, 1916, to July 1, 1918, Road Foreman of Locomotives, Toronto; July 1 to Sept. 18, 1918, relieving Division Master Mechanic, Ontario District, Toronto.

**R. Armstrong**, who has been appointed Superintendent, Brandon Division, Manitoba District, C.P.R., Brandon, Man., was born at Kingston, Ont., Jan. 27, 1865, and entered railway service July 4, 1886, since when he has been, to June 1, 1894, consecutively, operator and agent at Calabogie, Ont.; agent at Lavant, Ont.; ticket and billing clerk at Kingston, Ont., and agent at Renfrew, Ont., for Kingston & Pembroke Ry. After two years in private business, he was from June 9 to 30, 1896, operator on the C.P.R. at Weyburn, Sask.; for four years, operator and agent, Mountain Section, Pacific Division, C.P.R.; two years relieving agent and dispatcher, Kootenay Section; four years yard agent, Vancouver; one year agent, Vancouver wharf; and to June 1, 1908, agent, same road, Vancouver; June 1, 1908, to Dec. 31, 1909, General Agent, same road, Fort William, Ont.; Dec. 31, 1909, to July, 1912, Superintendent, Superintendent of Terminals, same road, Fort William, Ont.; July, 1912, to May, 1913, Superintendent, District 3, Saskatchewan Division, same road, Saskatoon, Sask.; May, 1913, to Oct. 14, 1918, Superintendent, Souris Division, Manitoba District, Souris, Man.

**William A. Cowan**, General Superintendent, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., died there, Nov. 17, from influenza. He was born at Galt, Ont., Jan. 22, 1877, and entered railway service July 23, 1899, as bridge carpenter, C.P.R., London, Ont., where he remained until Sept. 25, 1901. He graduated from the School of Practical Science, Toronto, Apr. 30, 1904, and from May 1, 1904, to Feb. 1, 1905, was transit man, C.P.R., London and Toronto; Feb. 1 to Oct. 15, 1905, Assistant Engineer of Terminals, C.P.R., Toronto; Apr. 15, 1905, to Feb. 14, 1908, Resident Engineer, District 3, Ontario Division, C.P.R., Toronto; Feb. 19, 1908, to Nov. 1, 1909, Resident Engineer, District 2, Ontario Division, C.P.R., London, Ont.; Nov. 1, 1909, to Oct. 1, 1911, Resident Engineer, District 1, Eastern Division, C.P.R., Farnham, Que.; Oct. 1, 1911, to Nov. 1, 1912, Assistant Engineer, C.P.R., Montreal; Nov. 1, 1912, to Jan. 9, 1914, Superintendent



ent, District 1, Atlantic Division, C.P.R., Brownville Jct., Me.; Jan. 10 to Mar. 15, 1914, Engineer of Construction, Halifax Ocean Terminals, Intercolonial Ry., Halifax, N.S.; Mar. 15, 1914, to May 1, 1915, Resident Engineer, District 2, Intercolonial Ry., Truro, N.S.; May 1, 1915, to June, 1917, Division Engineer, Transcontinental Division, Canadian Government Railways, Cochrane, Ont.; Feb. 1 to Apr. 1, acting Assistant General Superintendent of that division, and from June, 1917, to the time of his death, General Superintendent. The funeral took place at Quebec, Que.

**William J. Pickrell**, whose appointment as Master Mechanic, New Brunswick District, C.P.R., St. John, N.B., was announced in a recent issue, was born at London, Ont., Sept. 15, 1880, and entered C.P.R. service Jan. 3, 1900, since when he has been, to July 30, 1901, wiper, Toronto; July, 1901, to Oct. 31, 1904, fireman, Toronto; Nov. 1, 1904, to Aug. 3, 1906, travelling fireman, Toronto; Aug. 4, 1906, to Aug. 14, 1908, Assistant Road Foreman of Locomotives, Toronto; Apr. 15, 1908, to May 9, 1910, locomotive man, Toronto; May 10 to June 30, 1910, rule examiner, Toronto; July 1 to Oct. 14, 1910, locomotive man, Toronto; Apr. 9 to May 16, 1912, acting District Master Mechanic, District 3, Ontario Division, Toronto; May 17 to Oct. 31, 1912, acting District Master Mechanic, District 1, Ontario Division, Toronto; Nov. 1 to Dec. 1, 1912, District Master Mechanic, District 3, Ontario Division, Toronto; Dec. 2 to Dec. 8, 1912, locomotive man, Toronto; Dec. 9, 1912, to July 23, 1913, District Master Mechanic, District 3, Ontario Division, Toronto; July 29 to Aug. 17, 1913, Assistant Superintendent, District 3, Ontario Division, Toronto; Aug. 18 to Oct. 31, 1913, District Master Mechanic, District 3, Ontario Division, Toronto; Nov. 1, 1913, to Apr. 23, 1915, Assistant Superintendent, District 2, Atlantic Division, Woodstock, N.B.; Apr. 24, 1915, to Sept. 18, 1916, Master Mechanic, Ontario District, Toronto; Sept. 19, 1916, to Sept. 19, 1918, Assistant Superintendent, Farnham Division, Quebec District, Farnham, Que.

**Samuel J. Hungerford**, who has been appointed Assistant Vice President, Canadian Northern Ry. System, Canadian Government Railways, Toronto, was born near Bedford, Que., July 16, 1872, and entered railway service in May, 1886, since when he has been, to Feb., 1891, machinist apprentice, South Eastern Ry., and C.P.R., Farnham, Que.; May, 1891, to Aug., 1894, machinist, at various points in Quebec, Ontario and Vermont; Sept., 1894, to Aug., 1897, charge man, C.P.R., Windsor St., Montreal; Aug., 1897, to Apr., 1900, Assistant Foreman, C.P.R., Farnham, Que.; Apr., 1900, to Feb., 1901, Locomotive Foreman, C.P.R., Megantic, Que.; Feb. to Sept., 1901, General Foreman, C.P.R.; Feb., 1903, Locomotive Foreman, C.P.R., Cranbrook, B.C.; Feb., 1903, to Jan., 1904, Master Mechanic, C.P.R., Western Division, C.P.R., Calgary, Alta.; Jan., 1904, to Dec., 1907, Superintendent, Locomotive Shops, C.P.R., Winnipeg; Jan. 1908, to Feb., 1910, Superintendent of Shops, C.P.R., Winnipeg; Mar., 1910, to Apr., 1915, Superintendent of Rolling Stock, Canadian Northern Ry., Winnipeg; May, 1915, to Nov. 1, 1917, Superintendent of Rolling Stock, C.N.R., Toronto; Nov. 1, 1917, to Dec. 1, 1918, General Manager, Eastern Lines, C.N.R., Toronto.

**F. P. Brady**, who has been appointed General Manager, Eastern Lines, Canadian Northern Ry. System, Canadian Gov-

ernment Railways, Montreal, was born at Haverhill, N.H., June 22, 1853, and entered railway service 1869 as station baggagemaster Passumpsic Ry., since when he has been consecutively: 1873 to 1880, train dispatcher Northern Rd., at Concord, N.H.; 1880 to 1888, Chief Train Dispatcher Southeastern Ry., at Richford, Vt.; 1888 to 1889, Trainmaster C.P.R.; 1889 to 1898, Assistant Superintendent same road; 1898 to May, 1901, Superintendent same road at Smiths Falls, Ont.; May, 1901, to Sept., 1902, Superintendent districts 10 and 11, same road, at Toronto; Sept., 1902, to May, 1903, Superintendent district 19 same road at Fort William, Ont.; June 1, 1903, to Feb., 1904, Assistant General Superintendent Central Division, Winnipeg, Man.; Feb., 1904, to Sept. 16, 1908, General Superintendent Lake Superior Division, C.P.R., North Bay, Ont.; May 1, 1908, to June, 1909, Member of the Canadian Government Railways Board of Management; June, 1909, to June, 1913, also General Superintendent, Canadian Government Railways, Moncton, N.B.; June, 1913, on the abolition of the Canadian Government Railways Managing Board, to May, 1915, General Superintendent, Canadian Government Railways, Moncton, N.B.; May, 1915, to June 1, 1917, General Superintendent, Canadian Government Railways, Cochrane, Ont.; June 1, 1917, to Dec. 1, 1918, General Manager, Western Lines, Canadian Government Railways, Winnipeg, Man.

**Charles A. Hayes**, who has been appointed Vice President, Traffic, Canadian Northern Ry. System, Canadian Government Railways, Toronto, was born at West Springfield, Mass., Mar. 10, 1865, and entered railway service in 1882, since when he has been, to 1884, clerk, Freight Auditor's office, Connecticut River Rd., now Boston & Maine Rd.; 1884 to Oct., 1887, similar position, Boston & Lowell Ry., Boston, Mass.; Oct., 1887, to Nov., 1890, clerk, General Freight Agent's office, Boston & Lowell Ry., and its successor, Boston & Maine Rd.; Nov., 1890, to June, 1892, General Freight and Passenger Agent, Central New England & Western Ry., Poughkeepsie, N.Y.; June to Oct., 1892, Division Freight Agent, Philadelphia & Reading Rd., while it had control of the C.N.E. & W.R., Hartford, Conn.; Oct., 1892, to June, 1896, New England Agent, National Despatch Line, Boston, Mass.; June, 1896, to July, 1899, New England Agent and acting General Manager, National Despatch Line, Boston, Mass.; July, 1899, to May, 1903, Manager, National Despatch-Great Eastern Line, Buffalo, N.Y.; May, 1903, to Apr., 1908, Assistant General Freight Agent, G.T.R., Chicago, Ill.; Apr., 1908, to Oct. 16, 1911, General Freight Agent, G.T.R., Montreal; Oct. 16, 1911, to June, 1913, Freight Traffic Manager, G.T.R., Montreal; June, 1913, to June 1, 1917, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B.; June 1, 1917, to Dec. 1, 1918, General Manager, Eastern Lines, Canadian Government Railways, Moncton, N.B.

**Timiskaming & Northern Ontario Ry. Wages.**—The Minister of Labor has appointed a board of conciliation and investigation to deal with the claims of the T. & N.O.R. clerks, station baggage men and freight handlers. R. H. Parmenter of Toronto represents the railway, J. G. O'Donoghue, Toronto, represents the men and Judge Denton, of Toronto, is Chairman.

## Canadian Northern Railway Construction, Betterments, Etc.

**Eastern Lines.**—Reports are current that extensive betterments are to be carried out on the company's eastern lines, and particularly on the line from Toronto via Parry Sound to the junction with the transcontinental line near Sudbury.

**Ottawa-Toronto Line.**—We are officially advised that a contract has been let to W. Leacey, Brockville, Ont., for the construction of 2 concrete abutments to replace wooden cribs under I beam span, under Y track at Brockville.

We are officially advised that a contract has been let to the Dominion Construction Co., Toronto, for putting in concrete abutments for a deck plate girder span over a creek and the C.P.R. spur to ballast pit, at mileage 12.9, on the Trenton subdivision near Malvern, Ont. The bridge is at present carried on pile foundations.

**Leaside Terminals.**—It is reported that the terminal yards and buildings at Leaside, Toronto, have been so far completed that it is expected to begin occupying them within a few weeks. Everything, however, is said to depend upon the arrival of rails for laying the tracks.

**Western Branch Line Betterments.**—A press report states that during the construction season, now practically closed, considerable betterment work has been done on many of the western branch lines. The policy of removing wooden bridges has been continued, and on the main line a number of old bridges have been taken out and replaced by permanent steel structures on concrete abutments.

**Moose Jaw, Union Station.**—Grading was started Oct. 25 for the tracks to the new union station at the Crescent, Moose Jaw, Sask. The new station will be jointly used by the C.N.R. and the Grand Trunk Pacific Ry. Representatives of the company, interviewing the city council Nov. 4 on some matters connected with the work, are reported to have stated that it was hoped to have the rails laid by the end of the year, or early in Jan., 1919. A temporary station will be provided and trains will be run into it as soon as track-laying is finished.

**Extension into Kamloops.**—We are officially advised that it is expected to complete, in the near future, a piece of line from 300 ft. from a junction with the line on the north bank of the South Thompson River into the town of Kamloops, B.C., where a station will be built. The bridge across the river has already been built. This piece of line will form part of the projected branch line to Vernon, etc.

**False Creek Terminals.**—At the request of D. B. Hanna, President, the City Engineer of Vancouver has forwarded to Toronto a complete set of his plans for the development of the False Creek terminal sites and a copy of his report on harbor development. The plans show the proposed disposal of a 21 acre area of the reclaimed False Creek, through which it is proposed to have a 50 ft. channel. Provision is being made for interswitching tracks with all the railways entering the city. (Nov., pg. 485.)

**The Canadian Council of Agriculture**, at a meeting at Winnipeg recently, passed a resolution favoring, among other things, public ownership and control of railway, water and aerial transportation; telephone, telegraph and express systems, all projects in the development of natural power and of the coal mining industry.



# The Consolidation of the Canadian Northern and the Canadian Government Railways' Management.

Sir Robert Borden, in speaking at the Toronto Exhibition directors' luncheon on Sept. 9, as reported in Canadian Railway and Marine World for October, said, among other things: "The total railway mileage owned by Canada is very large, comprising nearly 14,000 miles, and reaching from the Atlantic to the Pacific. All the lines included in this mileage should be operated as one system, and under one management. This system should not be administered by a department of the government, but it should be connected as soon as practicable with steamship lines on both the Atlantic and the Pacific, and last, but not least, its operation should be kept absolutely free from party political interference. For these reasons, and for this purpose, the Canadian Northern Ry. System's board will be reconstituted in the immediate future." To carry out the policy indicated by the Prime Minister, an order in council was passed Nov. 20, transferring the operation and management of the Canadian Government lines, including the Intercolonial Ry. and its recently acquired branch lines, the Prince Edward Island Ry., and the National Transcontinental Ry. to the Canadian Northern Ry. directors. The order is as follows:—

"Whereas the Minister of Railways and Canals represents that under the provisions of the Department of Railways and Canals Act, Revised Statutes of Canada, chap. 35, the management, charge and direction of all government railways is vested in the minister, and by the Government Railways Act, chap. 36, Revised Statutes of Canada, sec. 49, the Governor in Council is authorized to make such regulations as he deems necessary for, inter alia, the management of all or any of the government railways: and whereas the minister further represents that, with a view to attaining a maximum of economy and efficiency in the operation of the Canadian Government Railways and of the Canadian Northern Ry. System, it is desirable that there should be a board of management of the Canadian Government Railways, consisting of the persons who comprise the board of directors of the Canadian Northern Ry. Co.

"Therefore, the Governor General, by and with the advice and consent of the King's Privy Council for Canada, is pleased to order that the order in council of June 5, 1917, P.C. 1529, whereby C. A. Hayes was appointed General Manager of Eastern Lines, and F. P. Brady was appointed General Manager of Western Lines, Canadian Government Railways, shall be, and the same is, hereby rescinded; and the Governor General in council is further pleased to order and declare that the persons from time to time comprising the board of directors of the Canadian Northern Ry. Co., shall be, and they are hereby appointed, a board of management of the Canadian Government Railways, and are hereby given the powers vested in the General Manager under the general regulations of the Canadian Government Railways, adopted by order in council of Jan. 22, 1914, P.C. 184."

The mileage of the co-ordinated lines as at June 30, 1917, was as follows:

Canadian Government Railways.	Miles.
Intercolonial .....	1,510.40
Elgin & Havelock .....	27.00
International of N.B. ....	111.30
Moncton & Buctouche .....	34.00
New Brunswick & P.E.I. ....	36.05
St. John & Quebec .....	119.87

St. Martins .....	30.00
Salisbury & Albert .....	45.00
York & Carleton .....	10.50

Prince Edward Island .....	1,924.12
National Transcontinental .....	2,003.03

	4,204.93
Canadian Northern System .....	9,405.44
	13,610.37

**Additional Directors.**—In view of the extensive mileage in the Maritime Provinces and Quebec of the lines which have been consolidated, the government has recognized the importance of giving those provinces substantial representation on the directorate, and for this purpose the Canadian Northern Ry. directors have elected the following additional directors, viz.: Thos. Cantley, New Glasgow, N.S.; A. P. Barnhill, K.C., St. John, N.B.; and Sir Hormisdas Laporte, Montreal.

**Officials, appointments, jurisdiction, etc.**—As a result of the co-ordination of the various lines and for the purpose of effectually consolidating the management, the jurisdictions of the principal C.N.R. officials have been extended over the C.G.R. also, viz.: D. B. Hanna, President; A. J. Mitchell, Vice President, Finance and Accounts; R. C. Vaughan, Assistant to President; Z. A. Lash, Senior Counsel; Gerard Ruel, Counsel. M. H. MacLeod, Vice President, Operation, Maintenance and Construction; S. J. Hungerford, Assistant Vice President; E. Langham, General Purchasing Agent, and J. P. Driscoll, General Superintendent Car Service.

C. A. Hayes, heretofore General Manager, Eastern Lines, C.G.R., Moncton, N.B., has been appointed Vice President in charge of traffic, C.N.R. and C.G.R., at Toronto.

For operating purposes the C.N.R. and C.G.R. lines have been merged and divided into Eastern Lines and Western Lines, respectively; the Eastern Lines comprising all C.N.R. lines east of Port Arthur, Ont., and all C.G.R. lines east of O'Brien, Que.; the Western Lines comprising all C.N.R. lines, Port Arthur and west thereof, and C.G.R. lines west of O'Brien, Que. F. P. Brady, heretofore General Manager, Western Lines, C.G.R., Winnipeg, has been appointed General Manager, Eastern Lines, C.N.R. and C.G.R., at Montreal; and W. A. Kingsland, formerly General Superintendent, Quebec Lines, C.N.R., has been appointed Assistant General Manager, Eastern Lines, C.N.R. and C.G.R., at Montreal. A. E. Warren, General Manager, Western Lines, C.N.R., Winnipeg, has had his jurisdiction extended to include C.G.R. lines west of O'Brien, Que. Louis Lavoie, heretofore Purchasing Agent, Canadian Government Rys., Railways and Canals Department, Ottawa, has been transferred to Toronto as Assistant General Purchasing Agent, C.N.R. and C.G.R.

The accounting and auditing departments for Eastern and Western Lines, C.N.R., located heretofore at Toronto and Winnipeg respectively, are being consolidated in Toronto. C. E. Friend, heretofore General Auditor, C.N.R., Winnipeg, has been transferred to Toronto as Comptroller, C.N.R.; and J. D. Morton, heretofore Assistant Comptroller, C.N.R., Toronto, has been appointed General Auditor, C.N.R., there. Several other officials and their staffs will be transferred from Winnipeg to Toronto on Jan. 1, particulars of which and other appointments are

given in "Transportation Appointments Throughout Canada" on another page of this issue.

The C.N.R. management has secured the old Imperial Hotel property on Adelaide St. East, Toronto, for traffic department and divisional operating offices.

The circulars announcing appointments of officials having jurisdiction over both the C.N.R. and C.G.R. are headed "Canadian Northern Railway—Canadian Government Railways," and the general officers' letter headings, etc., are printed in the same way. It is said that it is the government's intention to name the whole co-ordinated system Canadian National Railways, and that the necessary legislation will be introduced at the Dominion Parliament's next session.

**Inspection of Canadian Government Rys.**—D. B. Hanna, President, left Toronto, Nov. 26, for a trip over the C.G.R. in Quebec, the Maritime Provinces and Eastern Ontario, accompanied by most of the other directors, viz.: A. J. Mitchell, Vice President; Major Graham A. Bell, C.M.G., acting Deputy Minister of Railways and Canals; Robt. Hobson, Hamilton, Ont., and R. T. Riley, Winnipeg. Other directors joined them en route, viz.: A. P. Barnhill, K.C., of St. John, N.B., at Ottawa; Sir Hormisdas Laporte, at Montreal, and Thos. Cantley, of New Glasgow, N.S., further down the line. The party also comprised M. H. MacLeod, Vice President, Operation, Maintenance and Construction; and R. P. Ormsby, Secretary, C.N.R. S. J. Hungerford, Assistant Vice President, accompanied the party to Quebec, and F. P. Brady, General Manager, Eastern Lines, joined them at Montreal. Division and other local officials joined the party en route travelling through their respective jurisdictions.

From Toronto they went to Ottawa by C.N.R., thence to Montreal by C.G.R., and from there over the I.R.C., the Quebec Bridge and the N.T.R. to Quebec. The further itinerary planned included, from Levis via I.R.C. to Moncton, N.B., where two days would be spent, and then on to Sydney, Prince Edward Island, Halifax and St. John, returning via Quebec and over the National Transcontinental, to Cochrane, Ont., and from there to Toronto to the intention being to reach Toronto early in the second week of December.

The principal objects of the directors' trip are to consider the question of betterments, new construction, additional rolling stock, etc., as well as a possible reorganization of the C.G.R. staff. It is probable that after Mr. Hanna's return to Toronto a number of changes in the C.G. R. staff at Moncton, etc., will be announced.

**St. Malo Shops, Que.**—The Mayor of Quebec, on Nov. 13, telegraphed the Minister of Railways, asking that the National Transcontinental Ry. shops at St. Malo, Que., be put into operation at once, in accordance with the agreement with the city, in order to provide against unemployment caused by the closing of munition plants. The Minister of Railways replied, stating that the operation of the Canadian Government Railways had been placed under the Canadian Northern Ry. directors, and advised the mayor to communicate with the President, D. B. Hanna. This is a good beginning, and it is to be hoped that a similar policy will be adhered to.



## Suspension of Car Demurrage Rules on Account of Influenza Epidemic.

The Chief Railway Commissioner, Sir Henry Drayton, gave the following judgment Oct. 25:—A letter has been received by the board from the James Shearer Co., Montreal, as follows: "At our yards in Montreal we are practically tied up on account of the epidemic of Spanish influenza, and we find that the Eagle Lumber Co. at St. Jerome, to which we are shipping material to be dressed for us, is in the same predicament and in all probability cars will be under demurrage before we can even start to unload them. As this is a matter entirely beyond our control, we would ask if it is not possible to make special arrangements to have the demurrage charges withheld until the epidemic subsides. We trust you will be able to do something to relieve us, otherwise we shall be heavily penalized by the railways, due to the unavoidable illness of our employees."

The car demurrage rules do not cover a case of this character. While the rules arrived at were largely the result of negotiation and agreement between shippers and companies, a condition such as the present was never contemplated. There is no doubt as to the effect of the present epidemic. The railways themselves are unable to handle freight concurrently. A large number of cars set out for movement cannot be moved, simply because so many of the railway men are suffering from influenza that it is impossible for the railways to move them. This fact is well known and has been recognized by the shipping public.

Precisely the same conditions apply to the employees of industrial and other plants. As I see it, it would be absolutely unfair and improper to penalize shippers who cannot accept cars owing to the ravages worked by the epidemic on their employees. The matter is one absolutely beyond their control. Demurrage ought not to be charged under such conditions; and in my opinion the railways ought to be advised that demurrage ought not to be charged, and that if necessary the appropriate amending order will be made as of this date.

On Nov. 25, the Chief Commissioner gave the following judgment:—On Oct. 25 a judgment was issued providing that demurrage should not be charged where shippers were unable to accept cars owing to the ravages worked by the epidemic among their employees. This judgment was followed up by a memorandum dated Nov. 14, which was communicated to the different parties in interest by a letter from the board's Secretary, as follows: "I am directed by the board to write that

considerable misapprehension appears to exist as to the meaning of the direction given by the board on Oct. 25 last dealing with charges for demurrage during the influenza epidemic. The effect of the board's memorandum is not to abolish car demurrage tolls during the period of the epidemic. Relief, however, is extended to such consignees and consignors who were unable to load or unload cars concurrently owing to the illness of their employees. The general duty to unload promptly, where such unloading can be accomplished, still remains, but during the prevalence of the epidemic the railway companies may and must, where demurrage otherwise would be charged, relieve firms of demurrage payments to the extent that such firms have been unable to make prompt loading or unloading as a result of influenza among their employees. As a result it is the duty of the companies to consider each case on its merits, and apply the appropriate relief. As a further result, all railway companies which exercise the payment of demurrage on the grounds of influenza existing among the employees of consignees or consignors are justified in such action, having regard to all the prohibitions of discrimination."

The Car Service Bureau and those applying for relief under the judgment of Oct. 25 do not seem as yet to have arrived at any proper procedure in carrying out the board's directions, as a number of specific complaints have been received. There ought to be no difficulty in giving effect to the board's directions. The situation is perfectly plain. In the first instance, consignors and consignees who make delay either in loading or unloading cars, are subject to the penalties provided under the existing rules; but consignors and consignees who have been unable to load or unload as the result of the influenza among their employees are to be excused from the operation of the rules. Prima facie, a defaulting consignee or consignor is liable, and the onus of proof is on any consignee or consignor to show such a state of affairs existing as the result of the epidemic, and under which, with due diligence, it was impossible for the delay to have been prevented.

Applicants for relief under the board's order, so that the question can properly be disposed of not only as between the railways and the merchants, but as between merchants themselves, and so that all may be treated on a like basis and without discrimination, should file with the Car Service Bureau, or with the immediate railway company interested, evidence in writing, either by affidavit or

declaration, giving the following particulars: The number of men employed immediately previous to the epidemic. The number of men employed during the continuance of the epidemic and at the time the default in question took place. Any special or auxiliary efforts made to release the cars during such period, such as taking men when possible from other branches of the firm's activities, or securing them from outside sources, such as the services of outside carters when available, or showing that no men were available in other branches of the applicant's business. What action, if any, was taken to stop further shipments to the plant until the epidemic had ceased. If no action was so taken to show whether, in the course of trade, and having regard to the dates of shipments, any such action was possible.

Some of the complaints that have been received show that at least in part the applications are based upon the so called bunching of cars. The rules already provide for this, and apart from any specific direction, merchants are entitled to relief when cars are bunched, or in other words, when cars are being forwarded at the one time in greater numbers than as ordered and unloading facilities permit.

On the receipt of this material the matter ought to be promptly dealt with by the Car Service Bureau, or by the railway company interested, as the case may be, and under the circumstances the preliminary payment of the demurrage claim ought not to be insisted upon. It is, of course, open to the bureau or to the railway company interested to challenge the statements made and to ask in doubtful cases for further proof; but I confidently expect that the bureau and the railways will adjust, without the necessity of any board hearings, the great majority of cases which will arise.

The Car Service Bureau submits that when it is found that delays are in fact chargeable to the inability of employees of consignors or consignees owing to influenza, to load or unload, the higher tariff now in force ought to be reduced to the lower tariff of \$1 a day. There is no room for the distinction that the Car Service Bureau desires to make. When delays are unavoidable, owing to the ravages of the epidemic, it is not a question of the scale of charges; it is a question as to whether or not demurrage should or should not be charged, and the board has ruled that it ought not to be charged. No charge, therefore, of any character is to be made for unavoidable defaults attributable to the foregoing reasons.

## Traffic Orders by Board of Railway Commissioners.

### Interswitching of Freight Traffic.

General order 252. See page 538 of this issue, "Revised regulations for interswitching, etc., of freight traffic."

### Minimum Weight for Crushed Stone.

General order 253. Oct. 29. Re complaint of Canadian Manufacturers' Association against increased carload minimum weight for crushed stone published by Grand Trunk, Canadian Pacific, and Canadian Northern Railways, effective October 1, 1918. Upon hearing the complaint at Toronto, Oct. 17, and its appearing that certain carriers have published and filed schedules increasing certain car-

load minimum weights to conform to Canadian Railway War Board's circular 75, dated Aug. 5, it is ordered that the said schedules be amended as follows, viz.: To provide that the minimum weight for crushed stone and other building and paving materials, now shown as the marked capacity of the car, but not less than 60,000 lb., be the marked capacity of the car, but not exceeding the actual weight when cars are fully loaded, subject to the said minimum of 60,000 lb. To provide that no greater weight shall be charged for the said materials than that to which the shipper may be restricted by the carrier by reason of any track

bearing limitations. That the amendments to give effect to this order come into force not later than Nov. 18, 1918.

### Stoves for Fruit Shipments.

General order 254. Oct. 25. Re complaints of Dominion Brokers, Ltd., Calgary, Alta.; Plunkett & Savage, Calgary; Armstrong Growers' Association, Armstrong, B.C., and the Okanagan United Growers, Ltd., Vernon, B.C., against requirement of Canadian Pacific Ry. that, owing to the shortage of refrigerator cars and heaters, shippers of vegetables in British Columbia furnish stoves or other method of heating lined box cars, equipped with floor racks, in substitution



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TORONTO, CANADA, DECEMBER, 1918.

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for heated refrigerator cars. Upon hear-  
ing the matter at Vancouver, June 6; Cal-  
gary, Alta., June 10, and Edmonton, Alta.,  
June 11, 1918, and upon reading the fur-  
ther submissions filed, it is ordered that  
the C.P.R., according to its powers and  
as required by shippers, supply heaters  
in all cars furnished for the receipt of  
vegetables in carloads, subject to the  
charges provided for in its published and  
filed tariff for cars so supplied and furn-  
ished; and it is also ordered that heaters  
supplied by shippers when the said rail-  
way company is unable to comply with  
the provisions of this order be returned  
by the said railway company, and by  
other railway companies subject to the  
board's jurisdiction, in cases of joint  
movements, free of charge to the point of  
shipment of the said vegetables; and it is  
further ordered that schedules giving  
effect to this order be forthwith published  
and filed so as to give one day's notice to  
the board.

### Transfer Track at Yorkton.

27845. Nov. 8. Re order 25724, Dec.  
15, 1916, authorizing Canadian Northern  
Saskatchewan Ry. (Wroxtton Westerly  
Branch) to construct a transfer track be-  
tween its railway and the C.P.R., in the  
n. w. ¼ of sec. 36, and the n. e. ¼ of sec.  
35, Tsp. 25, R. 4, west of second meridian,  
at Yorkton, Sask.; and re order 27559,  
Aug. 14, 1918, apportioning the cost of  
the said transfer track; and re application  
of Canadian Northern Saskatchewan Ry.  
for an order suspending order 27559, Aug.  
14, 1918, apportioning the cost of the  
transfer track. Upon reading what is  
filed in support of the application, and  
on behalf of the C.P.R., and upon the re-  
port and recommendation of the board's  
Chief Traffic Officer, it is ordered that  
order 27559, apportioning the cost of the  
transfer track, be suspended until such  
track has been constructed and in opera-  
tion for three months, at which time the  
matter may be dealt with again upon the  
basis of the actual results of the opera-  
tion.

### Local Switching Charges.

278661. Re application of Toronto  
Board of Trade, Canadian Explosives,  
Ltd., Montreal, and Canadian Manufac-  
turers' Association for an order disallow-  
ing the increased tariffs of local switching  
charges of the Grand Trunk, Canadian  
Pacific, and Canadian Northern Railways,  
filed to become effective Nov. 18, 1918.  
Upon reading what is filed in support of  
the application and the report and recom-  
mendation of the board's Chief Traffic  
Officer, it is ordered that the application  
be dismissed, and that the following  
tariffs showing the proposed increases in  
local switching charges to become effec-  
tive Nov. 18, be suspended pending hear-  
ing and order of the board: Canadian  
Northern, C.R.C. E. 1151; Canadian Pac-  
ific, C.R.C. E. 3588; Grand Trunk, C.R.C.  
E. 4055.

### Freight Rates on Calf Meal.

27863. No. 15. Re application of the  
W. A. Jenkins Manufacturing Co., Lon-  
don, Ont., for application of special mile-  
age grain products tariff rates on ship-  
ments of calf meal. Upon hearing the  
matter at Toronto, June 24, the applicant  
company, the Canadian Freight Associa-  
tion, and the C.P.R. being represented at  
the hearing, and what was alleged; and  
upon reading the further submissions  
filed and the report and recommendation  
of the board's Chief Traffic Officer, it is  
ordered that in the case of mixed car-  
loads consisting of grain or grain pro-  
ducts, as defined in the special tariffs ap-  
pertaining thereto, and calf meal, from

one shipper to one consignee, and shipped  
from jobbing or redistributing centers  
other than the point or points of manu-  
facture of the calf meal whence specific  
commodity rates have been, or may be,  
published, the 8th class rates shall apply  
on the calf meal; the aggregate minimum  
weight of such mixed carloads to be that  
of the said special tariffs on grain and  
grain products; and it is further ordered  
that the said application, except as above  
provided, be dismissed.

### Heater Charges for Bananas.

27886. Nov. 25. Re application of  
C.P.R., under sec. 29 of the Railway Act,  
for an order rescinding order 27461, July  
22, 1918, made upon the complaint of  
Plunkett & Savage, against a heater  
charge of \$22.50 a car from Minneapolis,  
Minn., to Calgary, via the Minneapolis,  
St. Paul & Sault Ste. Marie and Canadian  
Pacific Railways, on five carloads of  
bananas ex New Orleans, declaring that  
the said heater charge was wrongfully  
made and authorizing the applicant com-  
pany to repay to the complainants the  
excess amount charged and collected by  
it on the said shipments. Upon reading  
what is filed in support of the application  
and upon the report of the board's Chief  
Traffic Officer, it is ordered that the appli-  
cation be dismissed, and that the said  
order 27461 be suspended pending hear-  
ing and further order of the board.

27887. Nov. 25. Re application of  
C.P.R., under sec. 29 of the Railway Act,  
for an order rescinding order 27458, July  
22, made on the complaint of the Vipond  
Fruit Co., Winnipeg, against a heater  
charge of \$15.00 a car on bananas from  
Minneapolis, Minn., to Winnipeg, declar-  
ing that the said heater charge was  
wrongfully made and authorizing the ap-  
plicant company to refund the said  
amount to the complainant company.  
Upon reading what is filed in support of  
the application and upon the report of the  
board's Chief Traffic Officer, it is ordered  
that the application be dismissed, and  
that the said order 27458 be suspended,  
pending hearing and further order of the  
board.

### Trackmen's Eyesight and Hearing.—

The Board of Railway Commissioners has  
issued the following circular:—"The  
board has given careful consideration to  
the employment by railways of trackmen  
suffering disability from defective hear-  
ing and eyesight, and to accidents result-  
ing therefrom, and while realizing the  
desirability, owing to the present short-  
age of unskilled labor, of hampering the  
railways as little as possible in their  
selection of this class of labor, it is of  
the opinion that where a trackman is em-  
ployed, the foreman engaging him might  
reasonably satisfy himself that the can-  
didate for employment suffers no such  
serious physical disability with respect to  
hearing and eyesight as will render him  
specially liable to accident, or increase  
the hazard of the employment for which  
he is engaged; and the co-operation, as  
far as possible, of the railways is there-  
fore asked in furtherance of this protec-  
tion."

Eastern Canadian Passenger Associa-  
tion.—Owing to the resignation of the  
chairman, A. L. Miller, formerly General  
Agent, New York Central Rd., at Mont-  
real, on his appointment to a similar po-  
sition at Albany, N.Y., A. J. Parr, G.F. &  
P.A., Timiskaming & Northern Ontario  
Ry., presided at the association's last two  
meetings. The election of a chairman to  
succeed Mr. Miller will be made at the  
January meeting.



## The Canadian Railway War Board's Work.

**Canadian Railway Board of Adjustment No. 1.**—Owing to ill health, U. E. Gillen, Vice President, G.T.R., Transportation and Maintenance, has resigned the adjustment board's chairmanship and has been succeeded by S. N. Berry, Vice President, Order of Railway Conductors; Geo. Hodge, Assistant to Vice President, Eastern Lines, C.P.R., being elected Vice Chairman. The other members of the board are:

Railway representatives, A. D. MacTier, Vice President, Eastern Lines, C.P.R.; W. D. Robb, Vice President, Mechanical Department, and acting Vice President, Transportation and Maintenance, G.T.R.; S. J. Hungerford, Assistant Vice President, Canadian Northern and Canadian Government Rys.; A. J. Hills, Assistant to President, Canadian Northern and Canadian Government Rys.

Railway employes' organizations' representatives: Ash Kennedy, A.G.C.E., Brotherhood of Locomotive Engineers; G. K. Wark, Vice President, Brotherhood of Locomotive Firemen and Enginemen; S. N. Berry, Vice President, Order of Railway Conductors; Jas. Murdock, Vice President, Brotherhood of Railroad Trainmen; J. M. Mein, Deputy President, Order of Railway Telegraphers; Wm. Dorey, Vice President, International Brotherhood of Maintenance of Way Employees.

**Committee on Transportation-Demobilization.**—As a result of several conferences at Ottawa between the board's executive and representatives of the Dominion Government, to arrange for handling troops and civilians returning from overseas, it has been decided to place the details of arranging the traffic, which will be quite heavy, in the hands of a subcommittee of the board, composed of railway passenger traffic department officers, who have given particular attention to the handling of troops since Canada entered the war. The officers appointed are: Walter Maughan, A.G.P.A., Canadian Pacific, Montreal, chairman; H. H. Melanson, P.T.M., Canadian Government Railways, Moncton, N.B.; and C. W. Johnston, A.G.P.A., Grand Trunk, Montreal. This committee will see to the provision of the necessary equipment, the routing of traffic via lines which may be in a position to handle it best at the time, and other matters connected with the management of the traffic. The committee, which has its headquarters in Montreal, will work in close conjunction with Col. Clarke, Director of Supplies and Transport, Militia Department, Ottawa, who will act in an advisory capacity to the committee.

**Freight Shed Hours.**—Referring to circular 83 and the board's telegram of Oct. 10, concerning change in opening and closing hours of freight sheds. The effective date of this arrangement has been further postponed until Jan. 1, 1919, in order to provide time for further enquiries, the necessity of which has developed.

**Notice of Changes in Handling Traffic.**—It has come to the board's notice that occasionally changes are made by railways in their arrangements for the handling of traffic and that the public is unnecessarily inconvenienced through such changes being made effective before reasonable notice is given. There would seem to be no reason, except where immediate action is necessary, as in the case of embargo restrictions at times, for not giving the public notice of contemplated

changes which directly affect the shippers' forwarding arrangements, etc., and it is directed, therefore, that until further advised, member lines give the public not less than 10 days notice prior to the effective date of such changes.

**Ontario Operating Committee.**—The board has appointed a committee to supervise and regulate the movement of traffic in Ontario, so as to avoid congestions. In order that the greatest degree of satisfaction possible may be given to the public, its members will seek the co-operation of boards of trade and others. The members of the committee are: J. Balkwill, Superintendent, Canada Division, Michigan Central, St. Thomas; C. G. Bowker, General Superintendent, Ontario Lines, G.T.R., Toronto; D. Crombie, General Superintendent, Ontario Division, Canadian Northern, Toronto; W. R. Davidson, General Superintendent, Eastern Lines, G.T.R., Montreal; H. T. Malcolmson, General Superintendent, T.H. & B. Ry., Hamilton, and Allan Purvis, General Superintendent, Ontario District, C.P.R., Toronto. The committee, which will have its headquarters at Toronto Union Station, will hold its first meeting there Dec. 4.

### Appointments to Board of Railway Commissioners.

The terms for which D'Arcy Scott was appointed Assistant Chief Railway Commissioner for Canada and for which S. J. McLean was appointed as one of the commissioners' having expired, the Dominion Government has re-appointed Mr. McLean as a commissioner, and has appointed J. G. Rutherford, of Calgary, Alta., as another commissioner. No one has been designated as Assistant Chief Commissioner.

Simon James McLean was born in Quebec, June 14, 1871, and was educated at private and public schools there, and at Cumberland, Ont., and later, at the Ottawa Collegiate Institute, and from 1890 to 1894 was a student in the Department of Political Science in the University of Toronto. Among the academic positions held by him at various times, are 1894-5, MacKenzie Fellow, University of Toronto; 1895-6, University Fellow in Economics, Columbian University, New York; 1896-7, University Fellow in Economics, Chicago University; 1897-1902, Professor of Economics, and Sociology, University of Arkansas; 1902-06, Associate Professor of Economics, Leland-Stanford Jr. University, California; 1906-08, Associate Professor of Political Economy, University of Toronto. He is a B.A. and LL.B. of Toronto University; M.A. of Columbia University, and Ph.D. of Chicago University. While in California he was elected to the chairmanship of the transportation section of the Commonwealth Club of San Francisco. He has been a prolific writer on transportation subjects, having contributed largely to technical periodicals, reviews, etc. From 1898 to 1901 he acted in an advisory capacity to the Department of Railways and Canals, and prepared a special report which was subsequently published by that department. In 1901 he was appointed special commissioner on railway rate grievances for Canada, and conducted investigations throughout the Dominion. The findings of this investigation were embodied in a report which recommended that a railway

commission be organized for Canada, with power over rates and classification, and that it should have transferred to it the functions hitherto exercised by the Railway Committee of the Privy Council. These recommendations were adopted by the government, and embodied in the Railway Act of 1903. From 1904 to 1905 he was expert agent of the U.S. Census Bureau, and of the Interstate Commerce Commission, and conducted investigations to determine the valuation of railway property in the Western States, and in 1908 he acted as chairman of conciliation boards to investigate disputes in two mining cases. He was first appointed to the Board of Railway Commissioners for Canada, Sept. 17, 1908, for 10 years.

John Gunion Rutherford, C.M.G., who has been appointed a member of the Board of Railway Commissioners for Canada, was born at Mountain Bank, Peeblesshire, Scotland, Dec. 25, 1857, and educated at Glasgow High School, Ontario Agricultural College, Guelph, and Ontario Veterinary College, Toronto, graduating as veterinary surgeon, with gold medal, in 1879. He practised in Canada, the United States and Mexico for several years, settling in Portage la Prairie, Man., in 1884, and acted as veterinary officer to the Northwest Field Force in the rebellion in 1885, for which he holds the medal and clasp. From 1887 to 1892 he was Veterinary Inspector for Manitoba, and from 1890 to 1894, associate Editor, *Nor' West Farmer*. In 1892 he was elected to the Manitoba Legislature as member for Lakeside, and represented the constituency to 1896; 1896 to 1900, editor, *Manitoba Liberal*; 1897 to 1900, member of the House of Commons for Macdonald, Man. He was appointed Chief Veterinary Inspector for Canada in 1902, and his title was changed in 1904 to Veterinary Director General. In 1906 he was also appointed Live Stock Commissioner for Canada, and in 1908 was elected an honorary associate of the Royal College of Veterinary Surgeons, and, as a delegate, attended the International Institute of Agriculture, Rome, Italy; International Congress of Tuberculosis, Washington, D.C., and was elected President of the American Veterinary Medical Association. In 1909 he acted as chairman of the international committee on bovine tuberculosis, and was President of the C. S. Association for 1909-10. He was made a Companion of the Order of St. Michael and St. George in 1910, resigned the position of Live Stock Commissioner in July, 1911, and that of Veterinary Director General in Aug., 1912, when he was appointed Superintendent of Animal Husbandry, Department of Natural Resources, C.P.R., Calgary, Alta., which position he held until his present appointment.

Gilbert Murray, whose appointment as Resident Engineer, Grand Trunk Pacific Ry., Melville, Sask., was announced in our last issue, was born at Boston, Mass., in March, 1883, and from 1899 to 1901, was rodman and instrument man for Hyde & Sherry, Boston, Mass.; 1902 to 1904, Inspecting Engineer of the water system, Sydney, N.S.; 1904 to 1912, leveler, draftsman, transit man and Resident Engineer on location and construction of main line and branches in Alberta and British Columbia, Grand Trunk Pacific Ry.; 1913 to 1917, location and reconnaissance engineer, Edmonton, Dunvegan & British Columbia Ry., Edmonton, Alta.; 1917 to Sept. 1, 1918, instrument man, Grand Trunk Pacific Ry., Regina, Sask.



# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Algoma Central & Hudson Bay Ry.—S. WORTH** has been appointed Superintendent in charge of operations, with supervision over train, yard and station service, reporting to the General Superintendent. Office, Sault Ste. Marie, Ont.

**W. C. PAUL**, heretofore Assistant Trainmaster, Steelton, Ont., has been appointed Trainmaster, reporting to the Superintendent. Office, Sault Ste. Marie, Ont.

**A. P. WILSON**, heretofore Local Freight Agent, C.P.R., Lethbridge, Alta., has been appointed Joint Agent, A.C. & H.B.R. and Canadian Government Rys., Hearst, Ont.

**Canadian Government Rys.—See Canadian Northern Ry.**

**Canadian Northern Ry. System—Canadian Government Rys.**—The Dominion Government has placed the management of the Canadian Government Railways under a board of management, consisting of the C.N.R. directors, of which D. B. HANNA is President. For the present the lines will be operated under the joint names given above, but it is said that legislation will be introduced, at the Dominion Parliament's next session, to change the designation to Canadian National Railways.

**R. C. VAUGHAN**, Assistant to President, C.N.R., has had his jurisdiction extended to include the C.G.R. Office, Toronto.

**Z. A. LASH, K.C.**, Senior Counsel, C.N.R., Toronto, has had his jurisdiction extended over the C.G.R. Office, Toronto.

**F. H. PHIPPEN, K.C.**, General Counsel, C.N.R., having resigned, **GERARD RUEL**, heretofore General Solicitor, C.N.R., succeeds him as Counsel, with jurisdiction over C.N.R. and C.G.R. lines. Office, Toronto.

**M. H. MACLEOD**, Vice President, C.N.R., in charge of operation, maintenance and construction, has had his jurisdiction extended to include all C.N.R. and C.G.R. lines. Office, Toronto.

**S. J. HUNGERFORD**, heretofore General Manager, Eastern Lines, C.N.R., has been appointed Assistant Vice President, with jurisdiction over all C.N.R. and C.G.R. lines. Office, Toronto.

**C. A. HAYES**, heretofore General Manager, Eastern Lines, C.G.R., Moncton, N.B., has been appointed Vice President, in charge of traffic, with jurisdiction over all C.N.R. and C.G.R. lines. Office, Toronto.

**GEO. H. SHAW**, General Traffic Manager, C.N.R., Toronto, is reported to have resigned.

**A. J. HILLS**, heretofore Assistant to the Executive, C.N.R., has been appointed Assistant to the President, with jurisdiction over all C.N.R. and C.G.R. lines. He will continue to act as special representative of the executive in connection with adjustment of wages and working conditions. In addition to performing such other duties as may be assigned to him, he will exercise supervision over the Resources Department. Office, Toronto.

**E. LANGHAM**, heretofore General Purchasing Agent, C.N.R., has had his jurisdiction extended to include all C.G.R. lines. Office, Toronto.

**LOUIS LAVOIE**, heretofore Purchasing Agent, C.G.R., Railways Department,

Ottawa, has been appointed Assistant General Purchasing Agent, C.N.R. and C.G.R. Office, Toronto.

**C. E. FRIEND**, heretofore General Auditor, Winnipeg, has been appointed Comptroller. Office, Toronto.



C. A. Hayes,  
Vice President, Traffic, Canadian Northern Ry.  
System and Canadian Government Rys.



Samuel J. Hungerford,  
Assistant Vice President, Canadian Northern Ry.  
System, Canadian Government Rys.

**J. D. MORTON**, heretofore Assistant Comptroller, has been appointed General Auditor. Office, Toronto.

**R. S. GOSSETT**, Auditor of Disbursements, C.N.R., Toronto, is continued in that position. Office, Toronto.

**T. W. RALPH**, heretofore chief clerk, Auditor of Disbursements' office, C.N.R., Toronto, has been appointed Assistant Auditor of Disbursements, C.N.R. Office, Toronto.

**H. G. FOREMAN**, Chief Accountant, C.N.R., Toronto, is continued in that position. Office, Toronto.

**W. F. ANDERSON**, heretofore Auditor Freight and Passenger Receipts, Western Lines, C.N.R., Winnipeg, has been appointed Auditor of Freight Receipts, C.N.R. Office, Toronto, from Jan. 1, 1919.

**E. A. KENDREE**, heretofore chief clerk, Auditor Freight and Passenger Receipts' office, freight branch, Western Lines, C.N.R., Winnipeg, has been appointed Assistant Auditor of Freight Receipts, C.N.R. Office, Toronto, from Jan. 1, 1919.

**H. G. HANNA**, heretofore Auditor, Ontario and Quebec Lines, C.N.R., Toronto, has been appointed Auditor of Passenger Receipts, C.N.R. Office, Toronto.

**F. J. GASCOIGNE**, heretofore chief clerk, Auditor of Freight and Passenger Receipts' office, passenger branch, Western Lines, C.N.R., Winnipeg, has been appointed Assistant Auditor of Passenger Receipts, C.N.R. Office, Toronto, from Jan. 1, 1919.

**A. C. EGAN**, heretofore Auditor of Agencies, Western Lines, C.N.R., Winnipeg, has been appointed Auditor of Agencies, C.N.R. Office, Toronto, from Jan. 1, 1919.

**W. L. BROWN**, heretofore chief clerk, Auditor Ontario and Quebec Lines' office, C.N.R., Toronto, has been appointed Assistant Auditor of Agencies, C.N.R. Office, Toronto.

**H. F. PARKER**, heretofore Freight Overcharge Adjuster, Western Lines, C.N.R., Winnipeg, has been appointed Auditor of Freight Overcharges, C.N.R. Office, Toronto, from Jan. 1, 1919.

The accounting and auditing departments' offices will be located at 68 and 74 King St. East, Toronto.

**J. P. DRISCOLL**, heretofore Superintendent of Car Service, Western Lines, C.N.R., Winnipeg, has been appointed General Superintendent of Car Service, C.N.R. and C.G.R. Office, Toronto.

**E. CRAWFORD**, heretofore Superintendent of Car Service, Eastern Lines, C.N.R., Toronto, has been appointed Superintendent of Car Service, Western Lines, C.N.R. and C.G.R. Office, Winnipeg.

**W. W. SLOAN**, heretofore Special Agent, C.N.R., Toronto, has resigned.

**F. P. BRADY**, heretofore General Manager, Western Lines, C.G.R., Winnipeg, has been appointed General Manager, C.N.R. lines east of Port Arthur, Ont., and all C.G.R. lines east of O'Brien, Que. Office, Montreal.

**W. A. KINGSLAND**, heretofore General Superintendent, Quebec Lines, C.N.R., has been appointed Assistant General Manager, Eastern Lines, C.N.R. and C.G.R. Office, Montreal.

**A. E. WARREN**, General Manager, Western Lines, C.N.R., has had his jurisdiction extended to include all C.G.R. lines west of O'Brien, Que. Office, Winnipeg.

**G. N. PALMER**, heretofore chief clerk to Auditor of Disbursements, C.G.R., has been appointed Auditor of Disbursements, C.G.R., vice C. F. Burns, deceased. Office, Moncton, N.B.

**G. ROSEBUSH**, heretofore Roadmaster, Trenton and Picton Subdivisions, C.N.R., Toronto, has been appointed



Roadmaster, Tweed and Brockville Subdivisions, C.N.R., vice C. Martin, transferred. Office, Yarker, Ont.

W. M. JACKLIN, heretofore Superintendent of Track, Ontario Division, C.N.R., Toronto, has been appointed Roadmaster, Trenton and Picton Subdivisions, C.N.R., including Trenton yard, vice G. Rosebush, transferred. Office, Toronto.

A. H. CAVANAGH, heretofore Trainmaster, C.N.R., Capreol, Ont., has been appointed Assistant Superintendent, C.N.R., there.

J. DUGUID has been appointed Locomotive Foreman, C.N.R., Capreol, Ont.

A. P. WILSON, heretofore Local Freight Agent, C.P.R., Lethbridge, Alta., has been appointed Joint Agent, C.G.R. and Algoma Central and Hudson Bay Ry., Hearst, Ont.

J. B. KELLY has been appointed Inspector, Sleeping and Dining Car Department and News Service, Western Lines, C.N.R., vice W. C. Potts, resigned. Office, Winnipeg.

F. BRADLEY, heretofore Equipment Inspector, has been appointed Platform Inspector, Sleeping and Dining Car Department and News Service, Western Lines, C.N.R., vice E. H. Drew, resigned. Office, Winnipeg.

A. E. McALLAN has been appointed Equipment Inspector, Sleeping and Dining Car Department and News Service, Western Lines, C.N.R., vice F. Bradley, promoted. Office, Winnipeg.

W. B. STEEVES, heretofore Assistant Master Mechanic, C.N.R., Saskatoon, Sask., has been appointed Locomotive Foreman, C.N.R., there, vice A. Mallinson, transferred.

A. MALLINSON, heretofore Locomotive Foreman, C.N.R., Saskatoon, Sask., has been appointed Locomotive Foreman, Calgary, Alta., vice F. Clark, who has left the service.

Canadian Pacific Ry.—GRANT HALL, Vice President, has been elected a director and member of the executive committee, vice Sir George Bury, resigned. Office, Montreal.

O. PEPIN has been appointed Chief Dispatcher, Farnham, Que., vice A. E. Gough, deceased.

R. WALTON, heretofore relieving Master Mechanic, Ontario District, Toronto, has been appointed Division Master Mechanic, Farnham Division, Quebec District, vice W. Wells, transferred. Office, Farnham, Que.

W. A. BLACK has been appointed Locomotive Foreman, Farnham, Que., vice D. W. Watson, transferred.

D. W. WATSON, heretofore Locomotive Foreman, Farnham, Que., has been appointed Locomotive Foreman, Sortin, Montreal.

T. H. HAMILTON, heretofore Assistant Superintendent, Trenton Division, Ontario District, Trenton, Ont., has been appointed Assistant Superintendent, Smiths Falls Division, Quebec District, vice J. A. Cook, resigned. Office, Smiths Falls, Ont.

C. CONNORS, heretofore Division Master Mechanic, Bruce Division, Ontario District, Toronto, has been appointed Road Foreman of Locomotives, Havelock, Ont.

J. A. TOBIN, heretofore Assistant Superintendent, Bruce Division, Ontario District, Toronto, has been appointed Assistant Superintendent, Trenton Division, Ontario District, vice T. H. Hamilton, transferred. Office, Trenton, Ont.

H. C. TAYLOR has been appointed Car Service Agent, Ontario District, vice G. T. Coleman, transferred. Office, Toronto.

A. A. SMITH has been appointed Trainmaster, Ignace, Ont., vice J. L. Jamieson, promoted.

J. L. JAMIESON, heretofore Trainmaster, Ignace, Ont., has been appointed Superintendent, Kenora Division, Manitoba District, vice J. M. MacArthur. Office, Kenora, Ont.

E. C. P. CUSHING, formerly Secretary to the President (Lord Shaughnessy), and latterly Assistant to the General Purchasing Agent at Montreal, has been appointed Assistant Purchasing Agent at Winnipeg, not Purchasing Agent, as stated in our last issue. F. E. GAUTIER is still Purchasing Agent at Winnipeg. The mistake was not ours, but was caused by incorrect information sent us from Montreal.

R. ARMSTRONG, heretofore Superintendent, Souris Division, Manitoba District, Souris, Man., has been appointed Superintendent, Brandon Division, Manitoba District, vice C. S. Maharg, whose appointment as Superintendent, Cran-



Frank P. Brady,  
General Manager, Eastern Lines, Canadian Northern Ry. System, Canadian Government Rys.

brook Division, British Columbia District, was announced in our last issue. Office, Brandon, Man.

A. C. HARSHAW, heretofore Superintendent, Cranbrook Division, British Columbia District, Cranbrook, B.C., has been appointed Superintendent, Souris Division, Manitoba District, vice R. Armstrong, transferred. Office, Souris, Man.

A. S. McDONALD, formerly Locomotive Foreman, Regina, Sask., who was mentioned in our last issue, as having been transferred, has been superannuated.

A. T. SHORTT having resumed his duties as Superintendent of Shops, Ogden, Alta., W. H. WORTMAN has returned to his position as Division Master Mechanic, Cranbrook, B.C.

W. H. WORTMAN, Division Master Mechanic, Cranbrook Division, British Columbia District, Cranbrook, having returned after leave of absence, J. W. JACKSON has resumed his position as Locomotive Foreman, Kamloops, B.C.

RICHARD MARPOLE'S title of General Executive Assistant has been changed to Executive Agent. Office, Vancouver.

N. J. KER, C.E., Townsite Agent and Engineer, Vancouver, has also been appointed Assistant Executive Agent in British Columbia. Office, Vancouver.

J. M. MacARTHUR, heretofore Superintendent, Kenora Division, Manitoba District, Kenora, Ont., has been appointed Superintendent, Medicine Hat Division, Alberta District, vice C. A. Cotterell, whose appointment as Assistant General Superintendent, British Columbia District, Vancouver, was announced in our last issue.

Canadian Pacific Ocean Services, Ltd.—Major H. MAITLAND KERSEY, D.S.O., London, Eng., has resigned the position of Managing Director.

C. E. BENJAMIN, General Passenger Agent, Trans-Pacific Lines, Montreal, is reported to have been appointed Passenger Traffic Manager in full charge of the services both on the Atlantic and Pacific Oceans. Office, Montreal.

Grand Trunk Ry.—W. A. BOOTH, heretofore assistant chief draftsman, Motive Power Department, has been appointed chief draftsman, Motive Power Department, Montreal, vice Jas. Powell.

W. J. HYMAN, heretofore assistant chief draftsman, Car Department, Montreal, has been appointed chief draftsman, Car Department, there.

W. A. WAUGH has been appointed foreman, iron machine shop, Montreal, vice W. A. Pitt.

T. MORTON has been appointed foreman, passenger car shop, Montreal, vice J. Brooks.

H. H. HAMILL, heretofore Commercial Agent, Detroit, Mich., has been appointed General Agent, Freight Department, Lines in Canada. Office, Detroit, Mich.

E. F. FLINN has been appointed General Western Freight Agent, Lines in Canada. Office, Chicago, Ill.

Grand Trunk Pacific Ry.—F. HOLLAND, heretofore foreman boilermaker, Melville, Sask., has been appointed Travelling Boiler Inspector, Transcona, Man.

R. MARSHALL has been appointed foreman boilermaker, Melville, Sask., vice F. Holland, promoted.

H. SAUNDERS has been appointed Car Foreman, Biggar, Sask., vice T. E. Annesly, transferred.

W. E. BELL has been appointed acting Division Superintendent of Telegraphs, Lines in Alberta and British Columbia, with jurisdiction over all matters pertaining to construction and maintenance of telegraph and telephone lines and operation of railway and commercial telegraphs, vice W. J. Rooney, on leave of absence. Office, Edmonton, Alta.

E. WARNING has been appointed Roadmaster, Edmonton to Obed, Districts 7 and 8, vice O. H. Anderson, transferred. Office, Edson, Alta.

O. H. ANDERSON, heretofore Roadmaster, Edmonton to Obed, Districts 7 and 8, has been appointed Roadmaster, Alberta Coal and Mountain Branches. Office, Edson, Alta.

J. A. M. BROWN has been appointed Roadmaster, McBride, B.C., vice J. Carlson, transferred.

J. CARLSON, heretofore Roadmaster, McBride, B.C., has been appointed Roadmaster, Endako, B.C.

C. E. JENNEY, General Agent, Passenger Department, G.T.P.R., Vancouver, B.C., has had his jurisdiction extended to cover the G.T.P. Coast Steamship Co. in British Columbia, south of Rivers Inlet,



Vancouver Island, the States of Idaho, Oregon and Washington, and Utah as far south as Ogden and Salt Lake City, and the portion of Montana west of and including Shelby Jct. to Helena and Butte.

T. E. ANNESLY, heretofore Car Foreman, Biggar, Sask., has been appointed Car Foreman, Prince Rupert, B.C., vice F. E. Dymond, who has left the service.

Michigan Central Rd.—J. M. CAMPBELL has been appointed Assistant Division Engineer, St. Thomas, Ont., vice W. J. Shaw, promoted.

Pere Marquette Ry.—P. M. BOYLE, Trainmaster, Detroit, Mich., is reported to have been appointed Trainmaster, Canadian Division, St. Thomas, Ont.

United States Railroad Administration, Eastern Region, comprising Pere Marquette Ry., Ann Arbor Rd., Detroit & Toledo Shore Line Rd., Port Huron Union Depot Rd., Lake Michigan Car Ferry Association, Grand Trunk Western Lines Rd., Detroit & Mackinac Rd., Detroit, Bay City & Western Rd., Port Huron Southern Rd., and Port Huron & Detroit Rd. The following appointments have been made: Assistant General Passenger Agents, J. D. McDonald, Chicago, Ill.; John Dunphy, Detroit, Mich.; General Baggage Agent, A. E. Plumer, Detroit, Mich.; Division Passenger Agents, O. L. Kinney, Chicago, Ill.; J. W. Kearns, Detroit, Mich.; N. De Young, Grand Rapids, Mich.; F. A. Young, Saginaw, Mich.; J. K. Cooper, Toledo, Ohio; R. W. Youngs, London, Ont.; Travelling Passenger Agent, G. W. Norman, Detroit, Mich.

### Edward Fitzgerald's New Appointment.

Edward Fitzgerald, formerly Assistant General Purchasing Agent, C.P.R., Montreal, and since early in the war Purchasing Agent, and subsequently Assistant to the Chairman, Imperial Munitions Board, Ottawa, has been appointed Vice Chairman of the Hudson's Bay Co.'s Canadian Advisory Board, with office at Winnipeg. Sir Augustus Nanton, of Winnipeg, who is one of the C.P.R. directors, and Vice President of the Winnipeg Electric Ry. is chairman of the H.B.C. Canadian Advisory Board, among the other members being G. W. Allan, K.C., M.P., and G. F. Galt, Winnipeg.

As Mr. Fitzgerald will devote his whole time to H.B.C. affairs, it is safe to assume that he will be its chief active executive officer in Canada, with jurisdiction over its vast fur and other trading, ocean and inland navigation and its large land interests. Mr. Fitzgerald left Ottawa for London, Eng., towards the end of November, to consult with the H.B.C. directors, expecting to return to Ottawa in January to clear up some Imperial Munitions Board work and take up his new duties in Winnipeg in February.

He was born at Ottawa, Ont., Nov. 9, 1874, and educated at the Model School there. He entered C.P.R. service in July, 1892, as junior clerk in the Purchasing Department, and was from Oct., 1898, to May, 1905, Commissary Agent; May, 1905, to Mar., 1910, Assistant to Purchasing Agent; Mar., 1910, to May, 1915, Assistant General Purchasing Agent. In May, 1915, he was assigned to the British Government as officer in charge of the War Office Purchasing Agency in Canada, and in Dec., 1915, was appointed Purchasing Agent, Imperial Munitions Board. and June, 1916, Assistant to the Chairman, I.M.B. He was made a Commander of the Order of the British Empire in Jan., 1918.

## Steel Rails and Rolling Stock Orders and Railway Betterments and Extensions Now to Proceed.

Ottawa press dispatch, Nov. 12.—Action is being taken promptly by the Dominion Government along the lines set forth recently by the Finance Minister to keep the wheels of industry turning in Canada during the period of transition from war to peace conditions, and to absorb labor which will be released by the cessation of production of munitions of war. Already orders have been placed for 200,000 gross tons of 85-lb. steel rails, which will be used in the making of required betterments and extensions on Canadian railways. The Dominion Iron & Steel Co., of Sydney, N.S., has been given an order for 125,000 gross tons, and the Algoma Steel Corporation, Sault Ste. Marie, an order for 75,000 tons. The rolling of these



E. C. P. Cushing,  
Assistant Purchasing Agent, C.P.R., Winnipeg.

rails is to begin very shortly, and deliveries are to be made at the rate of about 20,000 tons a month by each company. The price to be paid is to be determined later and is to be based on the cost of production. These orders will be followed by orders to various companies for accessories, angle bars, bolts, spikes, and tie plates to the extent of 65,000 tons. Their production will give employment to a considerable number of workmen, and the laying of the rails next spring will also call for many laborers. It is stated that these orders will be succeeded by others which will keep the rail mills engaged for a year or more.

At the conclusion of a conference today (Nov. 12) between Hon. A. K. Maclean and other members of the Dominion Government's Reconstruction and Development Committee and representatives of the Canadian Government Railways, Canadian Northern, Canadian Pacific and Grand Trunk, it was announced that big orders for rolling stock for the Canadian Northern and Canadian Government Railways will be placed shortly by the government with the several car building

companies of the country, and will keep them busy for a year to come. At present the Canadian Government Railways and the Canadian Northern are much below their requirements of rolling stock. The Grand Trunk will also require some cars. The Canadian Pacific is engaged upon a car building programme which will keep its shops busy at least nine months. When materials become available in larger quantities the company will, it is said, have additional work for its plant. At present car building plants, with one exception, are all engaged upon orders which will not be completed before the end of the year.

With respect to betterments and extensions over Canadian railways, it is pointed out that the Canadian Northern has certain uncompleted sections to be put into condition for operation. There are also certain projected lines, construction of which may be undertaken if economic conditions warrant. The railways are now suffering from a shortage of labor. They are in a position to employ a considerable number of workers. Next spring they will require more men for betterments and maintenance of way, and a still larger number if new construction is undertaken. Hence those who attended the conference separated with a feeling of optimism.

Ottawa press dispatch, Nov. 27.—Presidents of the big Canadian railway companies are in conference with the government today, respecting their plans for after war developments. There was a general discussion on the question of extension and equipment. It is the intention of all the companies to go ahead with their construction programme on such lines as are considered necessary. All the roads will do more or less replacement work and also proceed with numerous branch feeders, especially in the west, that have been suspended since the war began. They also intend to place heavy orders for equipment in locomotives, freight and passenger cars. Their programme will absorb a great deal of the floating labor of the country.

### Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co.'s operators have been placed on the same wage basis as C.P.R. telegraphers, increases to date from Sept. 1, by an award of the Canadian Railway War Board's committee.

The Western Union and Postal Telegraph services are consolidated, from Dec. 1, under U.S. Government control. It is announced that the U.S. Postmaster General has fixed the compensation to be paid annually, but the amount has not been made public. The Postal Telegraph Co. asked for \$3,800,000 a year and interest, but the Post Office Department is reported to have stated that as the company had been unable to furnish any approximate valuation of its property, an award had been made on the best information available, on the same principles used in making the award for the Western Union agreement. No physical consolidation of the two companies is contemplated. The Postal Telegraph Co. states that it will fight the award in the U.S. Court of Claims.



# Electric Railway Department

## Increases in Electric Railway Freight and Passenger Rates.

**British Columbia Electric Ry.**—The Board of Railway Commissioners passed order 27868, Nov. 19, as follows:—Re application of British Columbia Electric Ry. for permission to increase commutation fares for carriage of passengers between points on Vancouver, Fraser Valley and Southern Railway: Upon hearing the application at Ottawa, Aug. 27, in the presence of counsel for the company and the Municipality of Burnaby, and upon reading the further written submissions filed, it is ordered that the company be authorized to charge the increased commutation fares as published in its tariff C.R.C. 7 filed with the board, and that the said tariff become effective Dec. 1.

Judgment was delivered in Vancouver recently by Justice Macdonald in the action brought by the City of Vancouver against the British Columbia Electric Ry., for an alleged breach of the 1901 agreement in collecting a fare in excess of 5c. The city council in July passed a bylaw authorizing the company to charge a fare of 6c, which the mayor refused to sign. The company nevertheless proceeded to put the bylaw in force. Other factors were brought into the conflict, and on the bylaw being put to a vote of the rate-payers it was defeated. The hearing of arguments was concluded Oct. 29 and judgment was reserved. A Vancouver paper gives the following summary of the judgment:—

Referring to the refusal of the mayor to sign the bylaw, the judge says: "It was the duty of the mayor, under sec. 226 of the Vancouver Incorporation Act, as head of the council to sign such bylaw." He follows this statement with a quotation from the act covering the provision, and adds: "There is no power of veto vested in the mayor, nor can he, as it were, reconsider a bylaw, once it has passed the council."

In referring to the contention that while it might have been the mayor's duty, as a ministerial act, to sign the bylaw, he should not be called upon to do so, in view of the fact that the vote of the electors took place subsequently, which resulted in a decision adverse to the bylaw, the judge says that this fact does not affect the company's legal position in the slightest, if the bylaw were properly passed at the council meeting of July 8.

"In other words," he says, "if such bylaw became effectual so as to support the amending agreement and induced the company to incur a liability the council could not subsequently reconsider or virtually repeal such bylaw through the assistance of an adverse vote of the electors."

Continuing, the judgment points out that the agreement of 1901, in which the street car rates were fixed, contains a provision to the effect that if these are found inadequate, the company may apply to the council for a revision, and it could, if it saw fit, agree to an adjustment. It was contended that this discretionary power was taken away from the council by later amendments, but the judge did not hold with that contention, and quoted voluminous authorities in support of his position.

"In my opinion it was not necessary," he states, "then, nor since, through subsequent legislation, for the city council to submit a bylaw authorizing an agreement with respect to fares, chargeable by the company, to the city electors entitled to vote on money bylaws, for their approval."

The minutes of the council, the judge says, show clearly that the bylaw was given its several readings and passed and signed by the clerk, and that it was doubtless taken for granted by all parties that the procedure bylaw would be complied with. "The company, acting on this reasonable presumption, proceeds to carry out on its part the intention of all parties, that it should agree to pay the increased wages asked by its employees. From the sequence of events, resulting in the apparent passage of the bylaw, I have no reason to doubt that the council was, at the time, acting in good faith. Even apart from the dangers of a threatened sympathetic strike, the council was doubtless very anxious that the then existing disruption of business should speedily terminate."

"Even although the council was acting within its powers in passing the bylaw authorizing the passing of the agreement, and intended it to be effective, can their intention be destroyed by the action of the mayor in withholding his signature?" the judge asks. In reply to this, he states that no authority was submitted to him which, in his opinion, supported an affirmative reply to the question.

As to the power of the council to reconsider such a bylaw, the judgment states that "over a month after it had been passed it could not be reconsidered," and concludes with the statement that if he is right in that conclusion, the mayor has no discretion, but owes a public duty which should be performed by his signing both the bylaw and the agreement and thus render them fully effective, and the company as a party interested has a right to call for the execution of this ministerial act on the part of the mayor. "A time can be limited by the formal order for judgment, within which the mayor should sign the bylaw and agreement."

**Fort William Municipal Ry.**—The Fort William Utilities Committee and the Port Arthur Utilities Commission, sitting jointly, recently decided that for the present there will be no change in the operation or administration of the lines, and that full consideration will be given to the question of fares early in 1920.

The Montreal Tramways Co.'s new franchise gives the Montreal Tramways Commission power to fix rates for school children and apprentices lower than the regular tariff, for use on week days only, between certain specified hours. In the new schedule of fares fixed by the Quebec Public Utilities Commission provision was made for the issue of school children's tickets, but nothing was said about tickets for apprentices. The Montreal Tramways Commission directed, Oct. 10, that children's tickets should be useable by apprentices between 6 a.m. and 7 p.m. The commission administering the city's affairs passed a resolution, Oct. 23, setting out that in its opinion the Montreal Tramways Commission has not the right to

amend the contract between the city and the M.T. Co. as it did, and such a precedent would allow the Tramways Commission in future to modify the contract on other points, without the city's consent. The resolution was rescinded subsequently, and the matter was discussed by the city commissioners Oct. 31, when a resolution was passed asking the Tramways Commission to provide that school children's tickets should be made available for use between 7 a.m. and 7 p.m., instead of between 8 a.m. and 6 p.m. as at present, and that these tickets be made available for use by apprentices between 6 and 8 a.m., and between 5 and 7 p.m.

**Moose Jaw Electric Ry.**—The Moose Jaw, Sask., City Council passed a resolution recently outlining concessions which the city might make to the company to secure better service, and the repair of the South Hill bridge. At a meeting of the city council, Nov. 4, a letter was read from A. H. Dion, General Superintendent, M.J.E. Ry., which said, in part:—"The resolution was submitted to the directors, who instruct me to state that the proposed relief is unsatisfactory and quite inadequate. It appeared that your resolution was passed under a misapprehension as to the conditions. The directors were unanimous in the decision that they could not go on with the operation of the railway under existing conditions, as that would only mean the piling up of constantly increasing losses to the company. The company has borne the burden as cheerfully as possible, always hoping for better conditions, but now the load is too heavy, and the future offers no encouragement. The interests of the shareholders would be served by immediately ceasing the operation of the railway." The letter concluded by stating that a memorial was being prepared by the company for submission to the council at an early date.

The Moose Jaw Board of Trade passed a resolution recently favoring the appointment of a commission to investigate the company's affairs. In the course of the discussion it was suggested that the city council would be justified in offering financial support to the company, in addition to granting a new franchise. (Nov., pg. 505.)

**The Ottawa Electric Ry.** on Oct. 26 filed with the Board of Railway Commissioners the following special passenger tariff, to become effective Nov. 18:—

Zone 1: Within the municipal limits of the City of Ottawa, and beyond to the Experimental Farm, and to Cloverdale Ave. on the Rockcliffe line. Zone 2: West of zone 1, and including McKellar. Zone 3: East of Cloverdale Ave. to and including Rockcliffe Rifle Range. Zone 4: West of McKellar, to and including Britannia-on-the-Bay.

Cash fares, between 6 a.m. and 12 midnight:—

	Adults	Children under 10
Within zone 1, 2, 3 or 4.....	5 cents	3 cents
Between zone 1 and zone 2 or 3	10 "	6 "
Between zone 1 and zone 4...	15 "	9 "
Between zone 2 and zone 3...	15 "	9 "
Between zone 2 and zone 4...	10 "	6 "
Between zone 3 and zone 4...	20 "	12 "

Between 12 midnight and 5.30 a.m., double the above fares.

Special tickets—Between zone 1 and



zone 2 or 3, 3 tickets 25c; between zone 1 and zone 4, 2 tickets 25c.

Workmen's tickets—Good only within zone 1 from first morning trip until 7.30 a.m., and between 5 and 6.30 p.m.:—33 tickets \$1, 8 tickets 25c.

School children, under 14—Good only between 7 and 9.30 a.m., 11.30 a.m. and 1.30 p.m., and 3.30 and 5 p.m.:—40 tickets \$1. One ticket for each zone travelled.

Sunday—7 tickets 25c. One ticket for each zone travelled.

Objections to the tariff having been made by Westboro' Village and Nepean Township, the matter was heard by the Board of Railway Commissioners at Ottawa Nov. 18, when, after argument, the hearing was adjourned for two weeks, the tariff being suspended in the meantime.

**Pictou County Electric Ry.**—The Nova Scotia Board of Commissioners of Public Utilities has issued an order authorizing the company to charge increased fares on its electric railway, and increased rates for electric power, heat and light, from Dec. 1. The first four parts of the order deal with rates for light, heat and power, and the last paragraph deals with fares on the electric railway, as follows:—Cash fare 7c, in each zone. Strips of 8 tickets, 50c; one ticket good for a single fare in each zone. Strips of 10 tickets, 50c; one ticket good for a single fare in each zone on week days only until 8 a.m., and between 5 and 6.30 p.m.

**Port Arthur Civic Ry.**—See Fort William Municipal Ry.

**Regina Municipal Ry.**—Receipts for the 10 months ended Oct. 31, \$194,169.30; passengers carried, 4,164,156, against \$193,740.75 and 4,129,143 for the corresponding 10 months of 1917. The monthly figures for the current year are reported as follows:—

	Passengers carried.	Passenger receipts.
January .....	521,269	\$21,606.70
February .....	448,551	19,433.05
March .....	453,592	21,008.80
April .....	379,641	18,020.70
May .....	401,984	19,182.65
June .....	406,332	19,881.75
July .....	488,742	23,626.20
August .....	443,122	21,461.00
September .....	323,920	15,613.85
October .....	297,003	14,334.60

Commenting on these figures, a local paper says: "The increase to a straight 5c fare is responsible for an increase in revenue of \$20,000 on the 10 months...., the average increase per month is actually higher, as the increased fare was not put into effect until February.... Due to the influenza epidemic, the traffic for October fell off 114,121 passengers, a decrease of 27.76% compared with the passenger traffic for Oct., 1917. In October the total passenger revenue was \$14,334.60, compared with \$17,288.75 in Oct., 1917, a decrease of \$2,954.15, or 17.09%."

**Sherbrooke Ry. & Power Co.**—A press report states that the company applied to the Sherbrooke, Que., City Council Nov. 5 for authority to charge increased fares, and giving notice that in the event of the application being refused it would have to discontinue the electric car service after Nov. 30. An alternative proposition was made that the city acquire the railway at a price to be fixed by arbitration.

**The Winnipeg Electric Ry.**'s application of Oct. 18 to the city council for authority to charge increased fares was published in full in Canadian Railway and Marine World for November. The necessity for applying for relief had been evident for some time, and the public had been educated to this point by advertising, and by the company's bulletin, which is dis-

tributed on the cars every fortnight. The application for relief, however, was hastened by the award of the board of conciliation which investigated demands for increased wages from motormen and conductors, and granted increases representing an addition to the company's pay roll of \$362,000 annually. The company's application to the city council asked for a 6c fare, and 7 children's tickets for 25c, all other fares to be abolished. The council debated the application for three days and the friendly spirit which pervaded the discussion was very marked. The company's General Manager, A. W. McLimont, attended all the sessions and discussed the company's difficulties very frankly. Practically each member of the council admitted the company had established a prima facie case for increased revenue, and expressed the opinion that immediate assistance must be given. Upon the advice of the City Solicitor, however, a motion, which was favorably spoken to, granting a temporary increase of fares, was not put, but another motion was passed, the intent of which, it was explained, would compel the company to immediately apply to the Manitoba Public Utilities Commission for relief, and a committee of five members of the council, together with the City Solicitor, was appointed to appear with the company's representatives before the commissioner and support the application for an interim order as outlined above, pending investigation of the application for permanent relief. The commissioner expressed pleasure at the fact that the city and the company had got together and had agreed as to the nature of the order, which he promulgated forthwith, authorizing the following fares temporarily, effective Nov. 1:—

Cash fare .....	5c
Tickets (white), good at all times.....	5 for 25c
Tickets (red), good from 6 to 8 a.m., 5 to 6.30 p.m., week days, all day Sundays, and at all times for soldiers in uniform .....	6 for 25c
Tickets (green), for children under 16 years of age—good at all times.....	7 for 25c

The old rates prior to Nov. 1 were:—  
Six unlimited tickets for 25c.  
Eight workmen's tickets for 25c.  
Ten children's tickets for 25c.

In announcing the new fares, Traffic Superintendent Knox notified conductors as follows:—"All of the above tickets will be designated by a heavy black irregular saw-tooth impression across the face of the ticket. Until Sunday, Nov. 3, at midnight, outstanding tickets will be accepted for passage on our cars; after that time they will not be good for transportation. Passengers offering old tickets after above date should be requested to purchase new tickets and to present the old tickets for redemption at one of the company's offices. If passengers insist on using the old tickets you may permit them to do so, but 1c must be deposited by the passenger in fare box with the old ticket. This applies to all classes of old tickets."

A complete investigation of the company's affairs is now in progress before the Public Utilities Commission, in order to decide on what fares shall be authorized for the future.

The Winnipeg Board of Trade, which has some 2,000 members, has voted in favor of the company being allowed to increase its fares. The vote was taken by mail, owing to the influenza ban prohibiting meetings in the city. Some time ago the board's executive considered it a matter of policy to declare itself on the company's application for an increase, and in a questionnaire asked the opinions of the members. The result of the vote

was, 645 for an increase and 49 against. The city newspapers have supported the company's application.

## Dismantling of London and Lake Erie Ry. and Transportation Co's Line.

Failing in attempts to dispose of its electric railway from London to Port Stanley, Ont., as a going concern, either as a whole or in part, at prices fixed by the company, the line is being scrapped. It was finally closed for traffic Oct. 15, and the work of scrapping it was put in hand at once, the removal of the rails being commenced Oct. 21. The rails and other material, rolling stock, etc., are to be sold as early as possible.

The final offer for the purchase of the line was made by the City of London, Sept. 28, the price named being \$300,000. The company, E. B. Woods, President, is reported to have informed the mayor that more than that sum could be realized by scrapping the line. In connection with the scrapping of the line, a proposition came before the London Board of Control, Oct. 18, for the purchase of the bridge across the Thames, south of the city, in order that it might be turned into a general traffic bridge for the benefit of that section of the city. It was subsequently reported that the bridge would be suitable only for pedestrian traffic, and that its remodelling for vehicular traffic would make it nearly as expensive as the construction of a new bridge at Richmond St.

The city of London's interest in the line centered in the section from London to Lambeth, which it was thought at one time might be acquired. As the line is now being taken up, a proposition for establishing a bus line between the two points—one vehicle to carry passengers and another to carry freight—was endorsed by residents of Lambeth, Nov. 6. It is proposed to operate motor busses with a return fare of 25c.

Among the company's liabilities is a considerable sum due to the city of St. Thomas for taxes, rental, etc. The company's tracks connect with those of the St. Thomas St. Ry., which is owned by the city, and run over them for a short distance. \$2,400 was reported to have been paid over Nov. 6, leaving about \$5,000 due the city, which it demanded should be paid at once, or the track connection would be cut. G. B. Woods, President, had an interview with the city authorities Nov. 6, when he asked that the company's cars, with the rails and other materials, be allowed to run over the city's tracks to the steam railway yards for shipment. The city authorities refused to agree to the request, and it is reported that the connection was severed the same day.

**Winnipeg and Zone Fares.**—In addressing the Winnipeg City Council recently, A. W. McLimont, General Manager, Winnipeg Electric Ry., said:—"The company has no objection to putting into effect the zone system if the people want it. It is immaterial to us what system we have in operation so long as it will yield us sufficient revenue. My own opinion, however, is that the zone system would not be permitted by the people of Winnipeg. It would create a hardship for many of the poorer people living in the suburbs, and I do not think it will be at all popular. But we are willing to try it if you say so."



## Hull Electric Co's Snow Sweeper and Locomotive.

The Hull Electric Co. has added to its equipment a combined snow sweeper and locomotive, built by the Ottawa Car Manufacturing Co., with the following dimensions:—

Length over all as sweeper.....	39 ft. 0 in.
Length over all as locomotive .....	24 ft. 0 in.
Width over all .....	8 ft. 8 in.
Width of cab outside .....	8 ft. 1 in.
Length of cab outside .....	12 ft. 4 in.
Distance between bolster centers.....	12 ft. 6 in.

The underframe is of steel construction, built as one unit. Side sills are 10 in. channel reinforced with a 14 x ½ in. plate. All center and cross sills are of 10 in. channel. The underframe is tied together with lateral bracing, and large gussets and corner plate. At the ends of the underframe there is a specially constructed frame, which carry the brooms and are made removable when used as a locomotive.

The cab is of wood construction with 16 steel panels, 4 windows on each side and 3 at each end. A sliding window on each side is provided for look out, and there

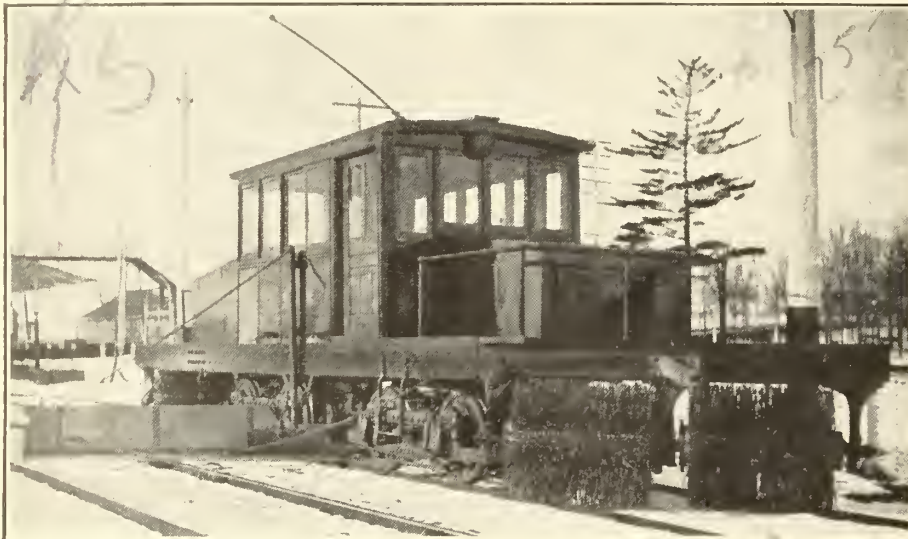
broom drive shaft, air compressor, motor resistance, air tanks, etc. This housing is made of sheet steel in 2 sections, so that it can be made shorter when the car is used as a locomotive.

The brooms are driven by a Westinghouse 101-B motor. The trucks are equipped with Westinghouse 101-B motors, 4 motors, double end equipment, with Westinghouse 402 controllers. The sweeper is equipped with Ohio Brass Co. pneumatic sanders. The lights are in one circuit of 5 lights, arranged at center of cab. The air brakes are Westinghouse, type S.M.E.; the trucks wheelbase is 4¼ ft.

The body is painted antique brown with gold numbers.

## Answers to Questions on Electric Railway Topics.

The following answers to questions sent to the American Electric Railway Association's question box, have been supplied by R. M. Reade, Superintendent, Quebec Ry., Light, Heat & Power Co., Quebec, Que.:—



Combined Snow Sweeper and Locomotive, Hull Electric Co.

is a large sliding door on one side. The roof is of the turtle back type, supported on steel carlines. The interior of body is finished in ash, natural finish.

The special machine is designed so that the motorman can operate all the apparatus used for lowering and raising the brooms, also the plough, without leaving his controller. The brooms and plough are lowered and raised by a chain device wound on to a cast iron drum, worked by a worm and gear on a 1 13/16 inch c.r. shaft, connected by miter gears to the winding machine shaft inside of cab operated by motorman.

The brooms are mounted on a heavy shaft and supported by 3 heavy malleable iron pedestals with bronze bearings. They are driven by heavy chain and sprocket drive, from main driving shaft, which is directly connected to the motors by gear and pinion drive, having the same gear ratio as the truck motors. The broom drive shaft is of cold rolled steel and supported by 2 heavy cast iron pedestals with babbitted bearings. A heavy sprocket is fitted and keyed on one end of shaft, from which power is transmitted to the broom shaft sprocket.

Motor housing is provided at each end, to enclose broom driving motors for

Route Accounting Methods. — What method should be pursued in allocating expenses and earnings, as between different lines and routes of the same system?

We have always allocated expenses on a mileage basis of the different lines and routes. We have a car hour basis, but it is not so satisfactory. Earnings for each line or route are kept separate.

Track Maintenance Economies. — In view of the necessity of economizing in the use of both labor and materials, what economies in track maintenance can be put into effect with the least inconvenience to the public and the least permanent injury to the company's property?

Due chiefly to the high cost, besides prices and delivery on rails not guaranteed by factories, we have been using for the past two or three years, a welding motor generator set. It has played a very important part in our railway track repairs, and by this means we are obtaining renewed life in the track on many parts of the system. After metal has been welded, the finished work is ground off to a smooth surface by means of the Atlas rail grinder. Built up welds are being made at cupped joints, at chipped intersecting flangeways and at other badly worn parts. In fact, many pieces of

track have been restored which otherwise would have required renewal at the time repair was made. Even if the percentage of unsuccessful repairs is large, the cost of them is so small that as a whole the work undoubtedly figures as an economy. All this work is being done at night between 12 midnight and 5 a.m., when cars have stopped running.

Concrete vs. Wooden Ties.—Taking into consideration the difficulty of securing, and the increased cost of, wooden ties, what is your opinion as to the desirability of substituting concrete ties therefor?

So far, we have had no difficulty in getting suitable ties, costing us 75c each. We have had no experience with concrete ties.

Movable Snow Breaker.—What is a good and cheap type of movable snow breaker for use on an interurban line, where they can be placed in the fields, only after the crop has been harvested, and must be removed in the spring?

We have used with good success rough wooden fences 12 ft. by 8 ft. high as a snow break. They are inexpensive, and easily put together by any track gang. Material required: 3 rough scantlings 3 x 4 in. x 8 ft., 8 rough boards 4 x 1 in. x 12 ft., 3 short scantlings 3 x 4 in. x 4½ ft., 3 machine bolts 7 x ½ in. To make—the three long scantlings are laid parallel on the ground 6 ft. apart, and 7 of the rough boards are nailed at right angles to the scantlings, leaving 6 in. between each board; the 3 short scantlings are bolted to the center of the long scantlings acting as hinges; the 8 board is now nailed to the 3 short scantlings about a foot from the ends of same, enabling the fences to be folded and easily carried, when not in use.

Repairs in Asphalt Pavement.—What is the best method of temporarily patching holes in asphalt pavement between tracks? Can asphalt block or concrete be used for this purpose with good results?

All our pavement between tracks is either scoria, asphalt blocks or macadam. We have had no experience with asphalt pavement between tracks. I see no reason why asphalt blocks could not be used for patching asphalt between tracks.

Women as Conductors.—Can women conductors be effectively used in the smaller cities, say those having populations between 20,000 and 50,000? If not, why?

No experience. I see no reason whatever why women conductors could not make good in the smaller, as well as the larger, cities.

Emergency Motormen.—Will companies whose lines serve munitions plants or other centers of war or government activities, give their experience in the employment of employees of those plants in the operation of cars for single trips to the plants in the morning and away from the plants at night? Am informed that this method of making up the shortage in labor has proved successful in a number of instances.

Before the Ross rifle factory closed down 18 months ago, situated on the upper town, we ran single trip cars from the lower level of the city (two miles from the factory) in the morning, to the factory, and from the factory in the evening. The employees of the factory living on the lower level soon got to know of this convenience, patronizing these cars well, due to our announcing the fact in the press that they would be carried without transferring morning and evening.



**Sale of Tickets.**—Do you consider the sale of tickets—not at reduced rates, in connection with 6c, 7c or 8c fare, to be essential to the convenience of either the public or the company? What are the relative advantages or disadvantages?

Yes. An essential convenience to the public, because it enables them to always have the exact fare ready, while the company has the benefit of the credit thus obtained in its unredeemed ticket account.

**Traffic Right of Way.**—Do the traffic laws or ordinances of your state or city, give the right of way to vehicles or street

cars, proceeding in any particular direction, or upon any particular street? Do you not consider that some such provision of law would be desirable?

Our traffic law, 23-a, clause 12, reads: "All vehicles going east and west have the right of way over those vehicles going north and south." I consider that a general law should be in force making all tramway streets, main streets, giving the traffic on these main streets the right of way over all traffic coming along intersecting streets. This would cut down all classes of accidents to a minimum.

## The American Electric Railway Association's Action on the Electric Railway Industry's Condition.

A New York press dispatch of Nov. 4, which was widely published in both the United States and Canada, stated that the American Electric Railway Association, at a meeting attended by some 1,000 delegates, representing electric railway interests in all parts of America, had adopted a resolution recommending public ownership of all city and interurban electric railways. This was not correct. At the meeting referred to, which was held Nov. 1, J. D. Mortimer, President, Milwaukee Electric Railway & Light Co., moved a resolution reciting the industry's present condition, and its inability to continue service without substantial relief being afforded it, and recommending member companies to afford every facility to cities and municipalities for acquiring existing transportation facilities. On a further motion by Mr. Mortimer, the resolution was referred to the association's executive committee, for such action as it might see fit to take.

The following resolution was adopted unanimously at the same meeting:—"The whole structure of the franchise relationship between electric railways and the various communities has broken down under the strain of the war. The rapid increase in the cost of all material, the extraordinary demands of labor made necessary by the rise in the cost of living, the alarming decrease in the purchasing power of the nickel, have brought the electric railways of this country face to face with bankruptcy. Practically every other industry except public utilities, whose rates are regulated by law, has been able readily to adjust its methods of doing business to meet the war demands, and the radical increases in the cost of operations and of manufacture have been promptly reflected in the selling price, and so passed on to the consumer. In all other departments of our commercial and industrial life, where the economic laws of supply and demand have been unhampered and allowed free play, the inevitable increase in the cost of production has been taken care of in the perfectly normal way of increased cost to the consumer. It is only in those industries where the public has attempted to fix a just and fair price for service rendered, and where the artificial standard has been substituted for the natural one, that we find this complete breakdown under war conditions. Industry generally was never so prosperous, notwithstanding the increase in the cost of labor and material. The public utilities, and especially the electric railways, present practically the only exception to this rule of prosperity. They, on the contrary, are steadily being destroyed by the war.

"A tabulation of 388 electric railways, representing over 63% of the electric

mileage of the United States, shows a falling off in income of 82% for the first six months of 1918, compared with the corresponding period of last year. Many of the companies are facing an actual operating deficit, in spite of the increase in gross receipts. The scale of wages established by the National War Labor Board in cases already decided, when applied to the industry generally, will add over \$100,000,000 to its already greatly increased operating expenses. As a consequence of the rapidly mounting costs of operation and the steadily declining net income, the financial standing of the electric railways has been seriously affected, and it is no longer possible to attract new capital for the efficient operation of the properties in the interest of the public.

"These facts lead inevitably to the conclusion that the present relationship between the companies and the public, as evidenced by existing franchises with fixed rates of fare, is economically unsound; that the present system of regulating fares by franchises or commissions is admittedly not sufficiently responsive to violent and radical changes in operating conditions. Under the present system, before the company can justify an increase of its fare, it must first show that for a longer or shorter period it has suffered loss under the existing fare, which loss cannot be compensated for by the new rate. In any other business, the prudent manager is able to provide against increases in cost by promptly advancing his selling price. The electric railway must stagger along under the 5c fare for months until its credit is destroyed, its service impaired, its equipment deteriorated, and it has become obvious to the community that it is on the brink of destruction, before its case has been sufficiently made out to justify an increase in its rate.

"The declaration of war found the electric railways thoroughly unprepared for the problems thrust upon them. Without in any way lessening our efforts to win the war by supplying this essential service to the public, it would seem to be the part of wisdom for us to take up for serious consideration the problems of peace. Of all the problems of re-adjustment which this nation will have to meet and solve after the war, none will be more serious or more difficult than that of the electric railway industry. In the light of our experience, as emphasized by war conditions, it is manifest that to insure the efficient operation of the electric railways of the country after the war, there must be a recasting of the entire basis of the relationship existing between the electric railways and the communities they serve. In many cases, electric railway franchises, which had come to be

considered as valuable assets, in the light of recent experience have been proved to be liabilities. Already there is a growing recognition of this fact in different parts of the country, as evidenced by the operation at cost plans adopted recently in Boston, Chicago, and Cincinnati. In the past, the sole interest of the community has been thought to be in the service rendered, but with a broader conception of the underlying problems involved, there is a growing tendency to recognize a community of interest in the problems of profit and loss, as having a direct and immediate bearing upon the rate of fare.

"Now, therefore, be it resolved by the American Electric Railway Association: That it is the deliberate judgment of this association, that, in the light of the experience of the industry during the war, the entire subject of the relationship between electric railway companies and the public should have, now and during the reconstruction period following the war, the most earnest consideration of the representatives of both the public and the companies; that among other things, a radical revision of electric railway local franchises should be made, if the industry is to continue to render efficient service to the public, and that a committee be appointed by the President of the association, whose duty it shall be to make a study of reconstruction problems, particularly those relating to local franchises, and report their recommendations at an early date."

**Commercial Development of Quebec.**—R. M. Reade, Superintendent, City and Quebec County Division, Quebec Ry., Light & Power Co., wrote a local paper recently on this subject, advocating the formation of a foreign trade committee of the Quebec Board of Trade, for the purpose of increasing the import and export trade of the port. Mr. Reade points out how the great ports of Europe and in other parts of the world have been built up by the extension of foreign trade. With the number of railways centering on Quebec, and the opening of the Quebec Bridge, Mr. Reade considers it time for Quebec people to awake to the realization of their opportunities and to take advantage of the natural and other advantages of the port, and of the great trade opportunities that will be within reach of those who seek for them on the coming of peace.

**Toronto Ry. Wage Conciliation Board.**—On the application of the Toronto Street Railway Employees Union, a board of conciliation is to enquire into the men's demand for a revision of the wage scale, to bring the rate of pay to 43c an hour for the first 3 months, 46c for the next 9 months, and 48c for the second year. The company opposed the application for a board on the ground that a wage agreement was already in force, and had a considerable time to run, but has now nominated F. H. Phippen, K.C., ex-General Counsel, Canadian Northern Ry., to represent it on the board. H. W. Harper will represent the men, and County Judge Barron, of Stratford, Ont., will be chairman.

The New Brunswick Power Co. has applied to the New Brunswick Public Utilities Commission for authority to abandon its street car service along Rodney wharf, St. John, and to remove the trestle. The St. John City Council has made application for an order directing the continuation of the service. The commission decided to hear both applications together at an early date.



## Mainly About Electric Railway People.

Wilson Phillips, formerly Superintendent, Winnipeg Electric Ry., has removed to Toronto.

E. Patterson has been appointed Roadmaster, Montreal & Southern Counties Ry., vice W. H. Maxwell, resigned.

City Commissioner Thornton, Regina, Sask., who acted as Chairman of the City Committee in charge of the Victory Loan, was reported to be suffering from influenza recently.

Herbert C. Howard, who was appointed Publicity Agent, Winnipeg Electric Ry., in February, and who resigned in May, on joining the Vancouver Daily Sun's staff, has returned to W.E.R. service as Publicity Agent, vice F. H. Williams, resigned.

J. B. Leitch, heretofore chief clerk to General Superintendent, Winnipeg Electric Ry., Winnipeg, has been appointed Assistant to General Superintendent. He has been in the company's service for 9 years, 6 of which were spent as chief investigator in the accident and claims department.

## Electric Railway Notes.

The Calgary Municipal Ry. put in operation Nov. 6, an augmented service during the rush hours.

A motion to commit R. J. Fleming, General Manager, Toronto Ry., to jail, for contempt of court, in not conforming to the court's order to supply the city with certain information as to the company's equipment, was dismissed at Toronto, Nov. 6, after a conference between the parties, when it was arranged that additional information be supplied.

The Hamilton & Dundas Ry. service is being checked by the Dundas, Ont., Town Council, on account of complaints of inadequate service. The council proposes, in the event of the complaints being found to be reasonable, to apply to the Ontario Railway and Municipal Board for an order setting out the number of cars which should be operated for the convenience of passengers at certain hours.

In consequence of the influenza epidemic, the operation of electric railways throughout Canada was considerably interfered with from the middle of October to the end of November. In Saskatchewan and Alberta, in particular, the service appears to have suffered most, not only on account of some cutting down of the service, but owing to the fact that the provincial boards of health in those provinces made the wearing of masks by all passengers compulsory.

The Ontario Appeal Court reserved judgment, Nov. 6, in the matter of the rights of certain bondholders in the Grand Valley Ry. Co. This is an issue to decide the rights of certain different classes of bondholders to rank on the purchase money of the road, which had been paid into court. At the trial it was decided that the holders of the 1902 bonds, who had not exchanged, were entitled to their money, and this has been appealed by the other bondholders, who claim to share.

Suits entered by L. Dubois with respect to the Montreal Tramways Co.'s new franchise were finally disposed of by Justice Dulos, Oct. 31. The injunction proceedings were disposed of prior to the hearing of the fares question by the Quebec Public Utilities Commission, but the

last action was one to quash the contract. This was met by the company entering an inscription of law, which was maintained by the judge, and the action was dismissed with costs, Dubois being declared to have no status in the case.

## Electric Railway Finance, Meetings, Etc.

### British Columbia Electric Ry. and subsidiary companies.—

	Sept. 1918	Sept. 1917	3 months to Sept. 30, 1918	3 months to Sept. 30, 1917
Gross ..	\$575,476	\$457,709	\$1,533,783	\$1,350,512
Expenses	444,928	381,591	1,295,634	1,157,813
Net	130,548	76,118	238,149	192,699

### Cape Breton Electric Company.—

	Sept. 1918	Sept. 1917	12 months to Sept. 30, 1918	12 months to Sept. 30, 1917
Gross	\$46,026.98	\$39,805.36	\$501,334.17	\$443,606.05
Exp.	35,161.83	25,628.29	365,570.16	274,100.50
Net	10,865.15	14,177.07	135,764.01	169,505.54

Levis Tramways Co.—Application will be made to the Quebec Legislature to incorporate a company with this title with the powers generally granted to a railway company, and with power to acquire the Levis County Ry.'s property, rights and franchises. The applicants are Senator R. Dandurand, S. H. Ewing, J. A. Ewing, Montreal; E. A. MacNutt, Westmount, Que.; J. C. Blouin, Levis, Que.

### London Street Railway.—

	Oct. 1918	Oct. 1917
Gross ..	29,848.73	\$34,206.31
Expenses ..	28,075.09	27,624.76
Net ..	1,773.64	6,581.55

New Brunswick Power Co.—Under acts passed by the New Brunswick Legislature relative to the taking over of the St. John Ry. Co. by the New Brunswick Power Co., the holders of St. J. Ry. bonds, maturing 1925 and 1927, can surrender them and receive therefor Dominion War Loan bonds, par for par, with adjustment of interest. The N.B.P. Co. has deposited with the Secretary-Treasurer of New Brunswick, Dominion War Loan bonds maturing 1925, of a face value equal to the St. J. Ry. outstanding bonds, together with a cash deposit for the equalization of the interest. The Montreal Trust Co. and the Royal Bank of Canada, Fredericton, N.B., are receiving the St. J. Ry. bonds for exchange.

### Toronto Ry., Toronto & York Radial Ry. and allied companies.—

	Sept. 1918	Sept. 1917	9 months to Sept. 30, 1918	9 months to Sept. 30, 1917
Gross	\$1,119,925	\$1,023,517	\$9,596,597	\$8,891,112
Expenses	565,069	559,590	5,201,953	4,732,305
Net	554,856	463,927	4,394,644	4,158,807

### Winnipeg Electric Ry. and subsidiary companies.—

	Sept. 1918	Sept. 1917	9 months to Sept. 30, 1918	9 months to Sept. 30, 1917
Gross	\$285,670	\$267,170	\$2,674,137	\$2,431,794
Expenses	207,477	203,744	2,028,450	1,861,667
Net	78,193	63,426	645,687	570,127

The surplus, after deducting fixed charges, for September is \$22,254.58.

New Brunswick Power Co.—J. A. Sullivan, of Boston, Mass., legal adviser of the city council of St. John, N.B., in connection with street railway matters, is reported to have stated, Nov. 10, that after the thorough investigation of the company's status, then going on, had been completed an application would be made to the arbitrators for dates of hearing. He was working with a view to have everything in shape to have the necessary legislation ready for consideration at the next session of the New Brunswick Legislature.

## On the Way to France.

By Ralph M. Reade,

Superintendent City and Quebec Railway Division, Quebec Railway, Light & Power Company.

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- "Cheer up, my friends!" said Uncle Sam,  
"I've just received your telegram—  
A million Yanks are now in France  
To lead the Huns a merry dance:  
Ten million strong are coming 'cross the sea,  
To do the right and keep the jubilee—  
Then, here's to our uncle and here's to his gal-  
lant sons;  
They will teach that right is might with Yankee  
guns!"

### Chorus

"Steaming, steaming, over the ocean blue,  
Chasing the Kaiser's submarines  
And sinking quite a few:  
Steaming, steaming, taking a sporting  
chance,  
Sinking the Huns with Yankee guns—  
On the way to France."

- "Our soldier boys across the sea,  
Will fight the fight for liberty,  
While you and I must do our share  
With plow and hoe to keep them there:  
In Berlin town upon the River Spree,  
Our flag shall wave, the symbol of the free—  
Then, here's to our uncle and here's to his gal-  
lant sons;  
They will teach that right is might with Yankee  
guns."

London St. Ry. Difficulties.—For some time past complaints as to the service given by the London St. Ry. have been considered by committees of the London, Ont., City Council, and have been discussed with C. B. King, Manager, and other officials of the company. Among other matters about which there is a difference of opinion are increased fares, and fines for alleged infractions of a city bylaw affecting time and speed of cars. The fare question was under consideration during the summer, and on the city council failing to come to terms, the company reduced its car schedule to endeavor to meet the increasing cost of operation by effecting a reduction in running expenses. The reduced schedule was put into effect July 1, and this was met by the council calling for the continuance of the old schedule, and passing a bylaw fixing the speed of cars, etc. The penalty fixed for breach of this bylaw is \$10 a day. A bill for \$210, for alleged violations during October, has been sent to the company. It is said that the whole matter will be taken up by the city council before the Ontario Railway and Municipal Board, a motion to that effect having been given notice of, for consideration by the council's no. 1 committee.

Influenza Among Winnipeg Electric Railway Employees.—Winnipeg, in common with other cities, has suffered severely from Spanish influenza, and the Winnipeg Electric Ry.'s staff has not escaped. As soon as the influenza reached the city, the company's medical officer began inoculating the employees, and while this had a very beneficial effect, yet at one time nearly 50% of the office staff were suffering. Early in November, A. W. McLimont, General Manager, established a relief committee, upon which each of the 16 departments in the whole organization was represented. This committee investigates each case in the home of the employee, and then reports back to Mr. McLimont, with recommendations as to the nature of relief which should be given. The various cases receive Mr. McLimont's personal consideration, and relief, either financial or otherwise, was immediately extended.



## Notes on Electric Railway Service at Cost.

That the condition of electric railway companies is decidedly precarious, and that immediate relief is necessary to save the roads from utter collapse, is reflected in the action of the President of the United States, who issued a statement recently in which he laid particular emphasis upon the situation that confronts the companies all over the country. The special purpose of his review of the situation was to impress upon the governing bodies in all municipalities where electric railway service is provided, the necessity for treating the roads liberally, and with the consideration that their condition justifies. He said in part that the roads are confronted with unusual burdens and that they should be permitted to earn sufficient revenue to pay operating expenses and show a fair return upon invested capital. This recommendation comes at a most opportune time, for with very few exceptions electric railways are not earning enough to pay their constantly increasing cost of operation. More than 90% of the electric railways in the United States are financially shaky, while many have collapsed under the strain. The same condition exists in Canada, for there are very few lines anywhere in the Dominion that are securing enough revenue to meet the cost of operation. So many factors have combined to make this condition possible that the wonder is that many of the roads are able to operate at all, for while expenses have increased in some instances 400%, and while nearly everything has about doubled in cost in the past four years, yet the railways in most instances are compelled to operate for the same rate of fare that prevailed when expenses were but a small fraction of what they are now.

The wages of employees are being constantly advanced to help to meet the rising cost of living; the price of equipment is continually soaring to new high levels; requests for more and better service, made necessary in great part by war activities, are making demands upon the companies that are taxing their every resource, improvements are insisted upon, and yet the companies find that they cannot secure additional revenue to meet these demands. Increased fares are denied them, so that their revenue is constantly below the cost of operation, and when this condition arrives the credit of the companies is destroyed, for investors fight shy of an enterprise that is not making enough to pay expenses. In view of this condition, President Wilson's remarks are most timely, and should be carefully considered by those who, while expecting a continuation of street railway service, are loth to admit that the companies are entitled to more revenue to meet the conditions that everyone knows to exist.

The main trouble with the electric railways is that they are selling 1918 service on the basis of 1898 costs. Investigators differ slightly as to the comparative cost of running an electric railway today and 20 years ago, but there is little doubt that in the past four or five years operating costs have increased in the neighborhood of 100%, with the prospect of still further increases. Many of those who use electric cars today can recall the first service of its kind that was installed in the various cities. Horse cars, with their short hauls, cheap equipment and limited service, were the forerunners of our present transportation facilities.

When electric power was substituted for the horse driven vehicles, it was believed that unlimited service could be provided almost anywhere, at almost any time, for the same rate of fare that had prevailed during the days of the horse cars. For a time this theory seemed to be practical; but, with the installation of electric power, the demands made upon the companies by cities in which they operated should have indicated that it would only be a question of time before there would be a limit to the service that could be given at the old fare.

At first, electric cars were small, and light, and covered comparatively short distances, but an ever increasing population drove homeseekers farther from the business centers, and the electric railway companies, in order to keep pace with this growth, extended their tracks, purchased new equipment and added constantly to their working forces. In time the car designers had to make their product larger and larger. Lines were continually lengthened, until interurban companies joined their tracks to city property; gradually old equipment became obsolete and had to be replaced with heavier rails, more expensive road beds, costly poles carrying more and larger feed wires, great power houses and substations became necessities, and within these were installed heavy modern electrical machinery. So quickly did these changes come about that equipment had to be junked before it had outlived its usefulness, and here entered the question of obsolescence, which is such an important factor in modern electric railway operation. One item alone will suffice to show how operating conditions have changed: Cars of the type used when horses were the motive power cost about \$1,000; the modern electric cars cost anywhere from \$15,000 to \$18,000; other items of equipment have been similarly affected, and yet, in the face of the tremendous increase in the cost of operation, the rate of fare has remained practically where it was when street railway transportation was first introduced. When we add to these conditions the farther complication caused by labor shortage, and the inability to procure, at any price, some types of necessary equipment, it is not difficult to realize that the tramway companies are confronted by the most critical period in the history of the industry.

The "service at cost" plan of electric railway operation which is now being advocated in Ontario is, in reality, a co-operative plan under which electric railways must be conducted at the maximum of efficiency and at the minimum of cost. There are co-operative banks and co-operative stores, and it is proposed to operate the electric railways on the same plan. In any co-operative enterprise, the main idea is to do the business without profit and to maintain the lowest possible selling price. As a co-operative bank loans money on the basis of actual cost of doing business, and as the co-operative store sells its commodities at actual cost, so a co-operative street railway plan would provide for the selling of transportation at exactly what it costs to give the service. Co-operative street railway operation has been in force in Cleveland, Ohio, for eight years, and it has given the utmost satisfaction to everyone. The same idea has been applied to the electric railways in Montreal, Boston, Cincinnati, Kansas City, Des Moines, Chicago, Dallas,

Toledo and the entire State of Massachusetts, while a number of other cities, as well as the State of Rhode Island, are about ready to adopt the plan. The complete success of co-operative or service at cost plan, wherever it has been tried, encourages the growing belief that it is just what Ontario needs, because it offers a prompt improvement of service, a more complete public control over the management of the railways, the immediate extension of service where needed, and all at a rate of fare just sufficient to pay the actual cost of good service. One of the most desirable features of the service at cost plan is the fact that it invariably enlists the co-operation of the public and re-establishes confidence in the operation of the railway.

### Electric Railway Projects, Construction, Betterments, Etc.

**Levis County Ry.**—We are officially advised that work on the reconstruction of the company's tracks in Levis, Que., was suspended Nov. 15 on account of winter conditions. It is expected to restart the work next May. (Sept., pg. 403.)

**Quebec Ry., Light & Power Co.**—Considerable damage was done to the Montmorency Division's track by a high tide in the St. Lawrence River, Nov. 19. Damage was done to some extent all along the line, and between Limoilu and Station Monument, the north track was lifted by the tide and landed in the ditch, while the south track was lifted and deposited approximately in the place of the north track.

A press report stated, Nov. 21, that instructions had been given to the City Solicitor of Quebec to take proceedings against the company to compel it to construct additional tracks in the Limoilu district. (Sept., pg. 403.)

Since the foregoing was written we have been officially advised that, under an agreement with the Quebec City Council in 1916, the company agreed, among other things, to extend the line on Beauport Rd. to the end of the city limits, a little over a mile, the work to be completed by Dec. 31, 1917. Owing to the high cost of labor and materials, the work was not started. The district through which the extension would run is not built up, and for at least two years the extension would not be a paying one. The position taken by the company is that the city council should not press for the carrying out of the work until such time as the cost of material, labor, etc., is reduced.

**Toronto & York Radial Ry.**—We are officially advised that plans are being prepared for a car barn on the Kingston Road, Toronto, for the Scarboro Division. It was expected to have everything ready to start work on the building of the barn by Nov. 30. (Nov., pg. 505.)

**Chatham, Wallaceburg & Lake Erie Ry. Traffic.**—Owing to a cave in at its power house smoke stack at Chatham, Ont., Oct. 29, there was a shortage of power and freight traffic was reported to have been suspended for several days. Power to run the passenger cars was temporarily obtained from the Chatham Gas Co., and the local Hydro-Electric Committee. (Feb., pg. 77.)



# Marine Department

## Steel Cargo Building for Dominion Governments.

**Launchings of Vessels.**—The first of the vessels to be built under the Dominion Government's programme, one of 4,300 tons, was launched by Canadian Vickers, Ltd., at Montreal, Nov. 23, and the second one, of 8,100 tons, will be launched at the same yard Dec. 3. Their names are Canadian Voyageur and Canadian Pioneer, respectively.

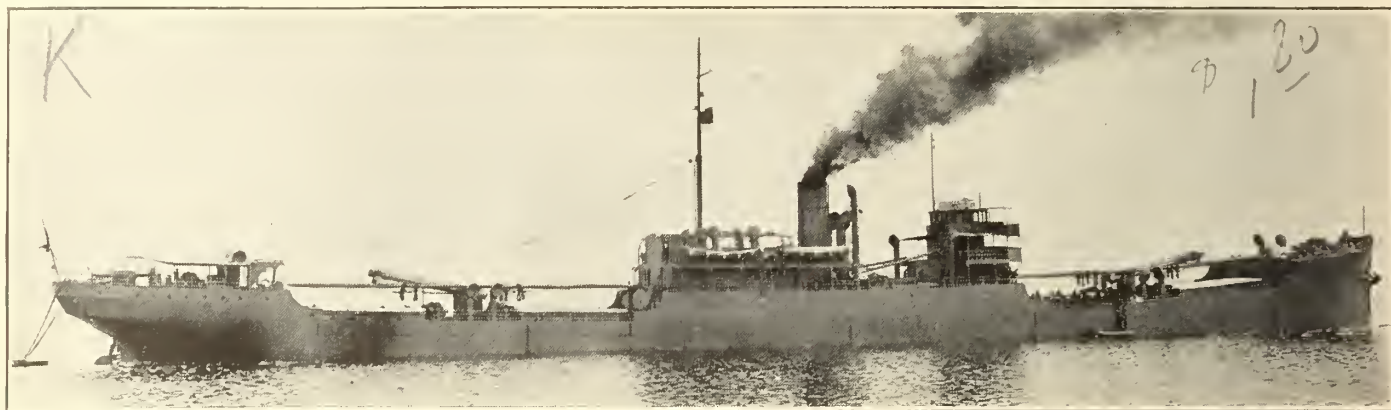
**Operation of Vessels.**—The Minister of Marine has announced that all the vessels ordered, and to be ordered, by his department will be operated under the control of D. B. Hanna, President, Canadian Northern Ry., whose jurisdiction has now been extended over the Canadian Government Rys. The Canadian National Steamships, Ltd., is about to be incorporated, under the Dominion Companies Act, and all its stock will be held on behalf of the Dominion Government. It will be a sub-

Collingwood Shipbuilding Co., Kingston, Ont. ....	1	3,750	3,750
J. Coughlan & Sons, Ltd., Vancouver, B.C. ....	4	8,100	32,400
Davie Shipbuilding & Repairing Co., Lauzon, Que. ....	2	5,100	10,200
Halifax Shipyards, Ltd., Halifax, N.S. ....	2	8,100	16,200
Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	4	3,400	13,600
Port Arthur Shipbuilding Co. ....	2	4,300	8,600
Tidewater Shipbuilders, Ltd., Three Rivers, Que. ....	4	5,100	20,400
Victoria Machinery Depot, Victoria, B.C. ....	2	8,100	16,200
Wallace Shipyards, Ltd., Vancouver, B.C. ....	2	4,300	8,600
Wallace Shipyards, Ltd. ....	2	5,100	10,200
Total .....	37		212,350

The 3,400 and 3,750 ton vessels are of the lake type, with single deck, poop,

to provide vessels suitable for certain trade, it was decided to add an additional deck, and make the vessels of the 3-deck type. For the additional deck an extra price of \$2.50 a ton was fixed.

**Prices for Steamships.**—The Toronto Globe attacked the Minister of Marine recently, for having given orders to J. Coughlan & Sons, of Vancouver, for 4 steel cargo, twin deck steamships of 8,100 tons d.w., at \$198 a ton, and to the Halifax Shipyards, Ltd., Halifax, N.S., for two 8,100-ton vessels at \$197 a ton. The Globe stated that the best previous price paid was reported to have been \$165 a ton, that the placing of contracts at nearly \$200 a ton was gross extravagance and that when the vessels were completed they would not be worth much more than half their cost. The Globe's information as to previous prices was incorrect, the



Steel Cargo Steamship, War Camp, 8,800 tons d.w., for British Government, built by J. Coughlan & Sons, Vancouver. ①

sidary of the Canadian National Railways, which, it is said, will be the name under which both the Canadian Northern Ry. and the Canadian Government Rys. will be operated, when the necessary legislation has been obtained. Separate subsidiary companies will also be incorporated for the ownership of each steamship.

R. C. Vaughan, Assistant to President, C.N.R. and C.G.R., has general charge of the arrangements for the operation, etc., of the steamships, one of which was launched by Canadian Vickers, Ltd., at Montreal, Oct. 23, and the second of which will be launched at the same yard on Dec. 3. It is probable that the appointment of a separate official to take direct charge of the operating of the steamships will be made in the near future. H. Milburne, formerly Wharf Superintendent, Canadian Northern Steamships, Ltd., Montreal, and latterly in charge of the Canadian Red Cross overseas shipments at Montreal, has been appointed Superintendent there for the Canadian National Steamships, Ltd.

**Orders for Steamships.**—We are officially advised that the following orders had been placed by the Dominion Department of Marine, up to Nov. 22:—

	No.	Deadweight tons each	Total d.w. tons
Canadian Vickers, Ltd., Montreal .....	2	4,300	8,600
Canadian Vickers, Ltd. ....	6	8,100	48,600
Collingwood Shipbuilding Co., Collingwood, Ont. ....	4	3,750	15,000

bridge and forecastle; the 4,300 and 5,100 ton vessels are of the single deck type, with poop, bridge and forecastle; and the 8,100 ton vessels are of the two deck type, with poop, bridge and forecastle.

Previous lists published mentioned 2 steamships of 4,300 tons, which we were advised on Aug. 15 had been ordered from the British American Shipbuilding Co., Welland, Ont. This contract is not being gone on with, and it is said that the company may be given a contract for smaller vessels, on account of the difficulty of taking the larger vessels through the Welland and St. Lawrence Canals in two sections to tide water.

An Ottawa press dispatch of Nov. 22 stated that an order in council had been passed authorizing the Minister of Marine to enter into a contract with Halifax Shipyards, Ltd., for the construction of 2 steel cargo steamships, 3-deck type, of approximately 10,500 tons dead weight each, at \$197.50 a ton. The dispatch quoted the order as stating that the company offered last May to build the vessels at \$195 a ton, but that the increased cost of labor and materials had caused an advance of \$2.50 a ton in the price.

Since the above was put in type we have been officially advised that an order in council has been passed as stated. When the first negotiations between the Marine Department and the company took place, and a promise was given of an order for several vessels, the price agreed on was \$195 a ton. As a result of further consideration given the matter, in order

"best," or highest previous price, was not \$165 a ton. That price was paid for two vessels, ordered from J. Coughlan & Sons, by the Imperial Munitions Board, for the British Government, in the spring of 1917, since when both labor and materials have greatly increased. Subsequent contracts were placed by the board at much higher rates, and J. Coughlan & Sons were given orders by the board for 4 more vessels at \$200 a ton. While the prices for all the Marine Department's contracts have not been made public, it is stated that the first two contracts given Canadian Vickers, Limited, were at \$207 a ton for a 4,300-ton steamship, and at \$180 a ton for an 8,100-ton steamship. The Collingwood Shipbuilding Co. is to get \$205 a ton for two 3,750-ton steamships. The Wallace Shipyards, Ltd., Vancouver, has contracts from the department for four vessels of 5,100 tons each at \$210 a ton.

According to figures submitted officially some time ago, it appears that the Imperial Munitions Board ordered 43 steel steamships, aggregating 211,300 tons, for about \$40,000,000, or an average of \$191.42 a ton. These wooden steamships are, of course, inferior in every way to the steel steamships being built for the Marine Department, and it is said that the steel steamships ordered by the Imperial Munitions Board are not of the same standard as those being ordered by the Marine Department. It must also be borne in mind that the Imperial Munitions Board orders were placed early in the war and that conditions have changed



very much since then.

Canadian Railway and Marine World believes that the contracts placed by the Marine Department recently are at the lowest prices at which shipbuilders will undertake the work. Apparently the To-

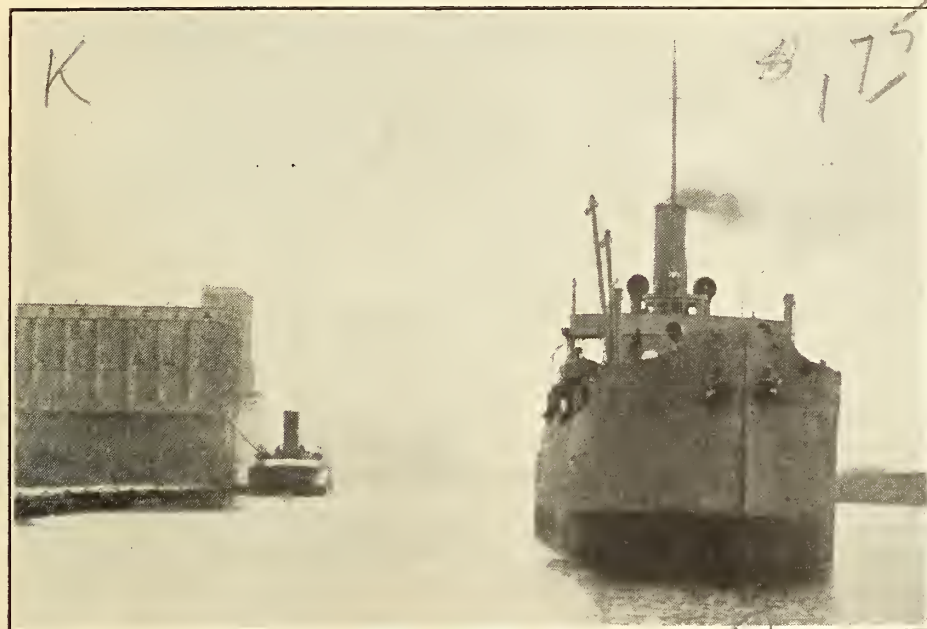
ernment's decision to engage in shipbuilding, private firms for which ships were being built in Canadian yards were paying prices for plates ranging from \$100 to \$180 a ton, and several small lots had to be purchased for upwards of \$200 a

tion in Sydney of a plate mill and the purchase therefrom of 250,000 tons of ship material at a basic price of \$83 a ton. The contract with the Steel Corporation provides that the price of plates will be reduced proportionate with any reduction that may hereafter occur in the cost of producing steel ingots. This cost will be determined at the end of every six months period by auditors selected by the Government for that purpose. While the fixed price seems high, it is from 50 to 100%—and more in many cases—lower than the prices then obtaining in the open market. It was necessary to provide assured supplies of plates for Canadian shipyards and other Canadian industries."

**Halifax Shipyards, Ltd., Halifax, N.S.**—Arrangements are reported to have been made with the city council for the temporary use of the city market building, as a moulding loft, in connection with the preparations for building the 8,100 ton steamships for the Dominion Government. It is expected that the keel of the first vessel will be laid during December.

**Port Arthur Shipbuilding Co., Port Arthur, Ont.**—Having completed its orders for the British Government, received through the Imperial Munitions Board, has commenced work on 2 steel steamships of 3,400 d.w. tons for the Dominion Government.

**What is Low Water Mark?**—The Dominion Iron & Wrecking Co.'s appeal from the judgment against it on a contract for the removal of a part of the wrecked s.s. Bavarian, which has been lying at Indian Cove, Que., for several years, was dismissed by the Supreme Court, Nov. 26. The contract, called for the placing of the wreck "high and dry



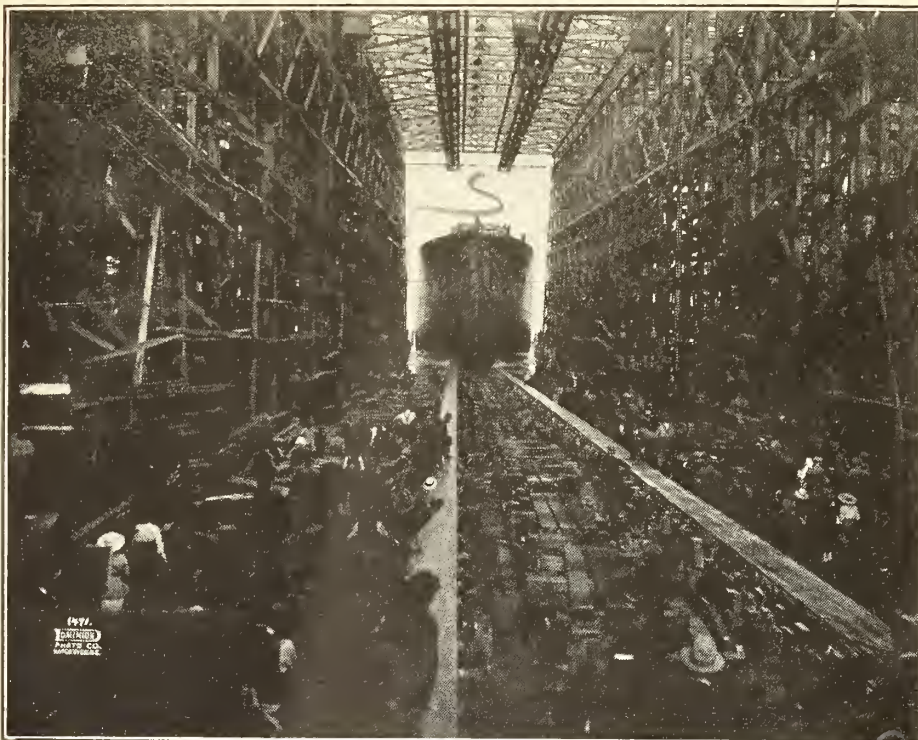
Steel cargo steamship, War Horus, for British Government, built by Port Arthur Shipbuilding Co., Port Arthur, Ont., leaving the head of the lakes for Montreal.

ronto Globe thinks it would be better for no orders to be placed now. But there is urgent need of shipping, and the Dominion Government would be derelict in its duty if it did not continue to place orders to keep all the steel shipbuilding plants in Canada going to their fullest capacity. Foreign governments and private owners are anxious to place orders in Canada at higher prices than the Dominion Government is paying, and as a matter of fact Canadian shipbuilders would be better off if they were allowed to take those orders instead of being confined to Dominion Government work. We have reason to believe that the orders given for the French Government recently, for building 70 wooden steamships in Canada, full particulars of which were published in Canadian Railway and Marine World for November, are at considerably higher prices than the Marine Department is paying for infinitely superior steel vessels.

The Toronto Globe also refers to the price of steel ship plates contracted for by the Dominion Government. The contract which the government has with the Dominion Steel Corporation, Sydney, N. S., for steel ship plates for 5 years is at a base price \$4.15, on a sliding scale; that is to say, the price was fixed on the price of steel ingots at the time the contract was signed, and in no event can it be higher than \$4.25. As the price of steel ingots declines, so will the price of the ships plates for the government during the five years of the contract. Every 6 months the government will send auditors to the Dominion Steel Corporation, to ascertain the costs. It is therefore self evident that the price of \$4.15 is only a base price and that as the cost of steel ingots declines so will the cost of the plates to the Dominion Government decline.

In connection with this matter, the Minister of Marine stated in an interview recently as follows:—"In January last and for some months previous to the gov-

ton. Through the courtesy of the U.S. Government, the department was enabled to obtain an assurance that sufficient plates to meet the requirements up to July or August next would be available from U.S. sources, at the rate fixed by



Launching of steel cargo steamship War Noble, for British Government, by J. Coughlan & Sons, Vancouver.

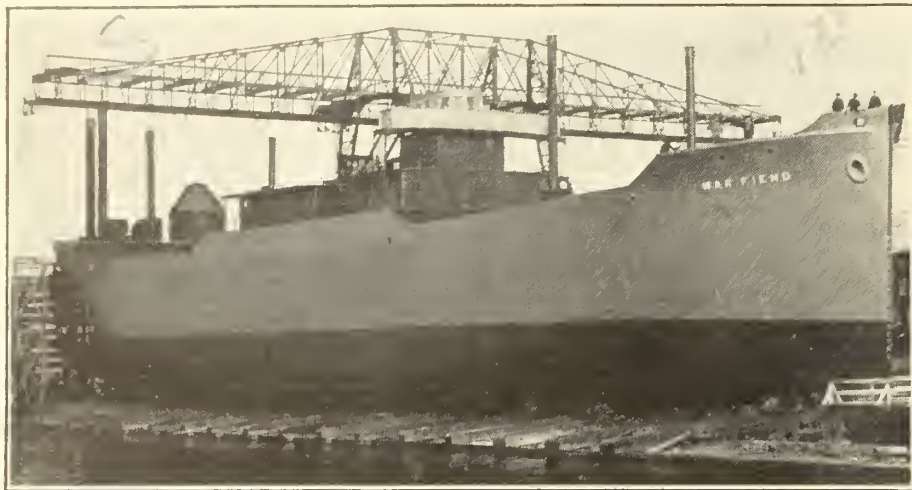
the U.S. Government, viz., \$65 a ton. It was in these circumstances and in pursuance of a policy to make Canada self contained in the matter of shipbuilding that the arrangement was concluded with the Dominion Steel Corporation for the erec-

at low water mark," and the work was to be completed by June 25. The company claimed that that meant low water mark at the time the contract was concluded, but it was held that it meant ordinary low water mark.



## Cargo Steamship Building in Canada for British Government.



**Launchings of Steamships.**—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to Nov. 15, giving in each case the date of the launching, the name



Steel cargo steamship War Fiend, 3,400 tons deadweight, for British Government, just prior to launching by Midland Shipbuilding Co., Midland, Ont.

of the steamship, the name of the builder and the deadweight tonnage:—

### Steel Steamships.

<p>Launchings of Steamships.—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to Nov. 15, giving in each case the date of the launching, the name</p>		<p>Jan. 24, 1918—War Yukon, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. .... 3,080</p> <p>Feb. 16, 1918—War Puget, Wm. Lyall Shipbuilding Co., Vancouver, B.C. .... 3,080</p> <p>Mar. 6, 1918—War Selkirk, Western Canada Shipyards, Vancouver, B.C. .... 3,080</p> <p>Apr. 10, 1918—War Caribou, Wm. Lyall Shipbuilding Co., Vancouver, B.C. .... 3,080</p>
		<p>June 24, 1918—War Nicola, Wm. Lyall Shipbuilding Co., Vancouver, B.C. .... 3,080</p> <p>June 28, 1918—War Quebec, Quebec Shipbuilding &amp; Repairing Co., Quebec, Que. .... 3,080</p> <p>June 29, 1918—War Ontario, Toronto Shipbuilding Co., Toronto. .... 3,080</p> <p>July 5, 1918—War Huron, Fraser, Brace &amp; Co., Montreal. .... 3,080</p> <p>July 5, 1918—War Erie, Fraser, Brace &amp; Co., Montreal. .... 3,080</p> <p>July 6, 1918—War Casco, Western Canada Shipyards, Ltd., Vancouver, B.C. .... 3,080</p> <p>July 12, 1918—War Sumas, Pacific Construction Co., Port Coquitlam, B.C. .... 3,080</p> <p>July 24, 1918—War Suquash, Wm. Lyall Shipbuilding Co., Vancouver, B.C. .... 3,080</p> <p>July 27, 1918—War Gaspe, Quinlan &amp; Robertson, Quebec, Que. .... 3,080</p> <p>July 27, 1918—War Ottawa, Fraser, Brace &amp; Co., Montreal. .... 3,080</p> <p>Aug. 5, 1918—War Chilkat, Western Canada Shipyards, Vancouver, B.C. .... 3,080</p> <p>July 29, 1918—War Stikine, Cameron-Genoa Mills Shipbuilders, Victoria, B.C. .... 3,080</p> <p>Aug. 31, 1918—War Camchin, Foundation Co., Victoria, B.C. .... 3,080</p> <p>Sept. 7, 1918—War Sorel, Quebec Shipbuilding &amp; Repair Co., Quebec. .... 3,080</p> <p>Sept. 8, 1918—War Nanoose, Foundation Co., Victoria, B.C. .... 3,080</p> <p>Sept. 19, 1918—War Niagara, Fraser, Brace &amp; Co., Montreal. .... 3,080</p> <p>Sept. 21, 1918—War Halifax, Southern Salvage Co., Liverpool, N.S. .... 3,080</p> <p>Sept. 22, 1918—War Nipigon, Great Lakes Dredging Co., Port Arthur, Ont. .... 3,080</p> <p>Sept. 23, 1918—War Matane, Quinlan &amp; Robertson, Quebec, Que. .... 3,080</p> <p>Sept. 26, 1918—War Ewen, New Westminster Construction &amp; Engineering Co., New Westminster, B.C. .... 3,080</p> <p>Oct. 15, 1918—War Mingan, Three Rivers Shipyards, Ltd., Three Rivers, Que. .... 3,080</p> <p>Oct. 26, 1918—War Toronto, Toronto Shipbuilding Co., Toronto. .... 3,080</p> <p>Nov. 2, 1918—War Radnor, Three Rivers Shipyards, Ltd., Three Rivers, Que. .... 3,080</p> <p>Total, 45 wooden steamships.....138,600</p>
<p>of the steamship, the name of the builder and the deadweight tonnage:—</p>		<p>Apr. 11, 1918—War Comox, New Westminster Construction &amp; Engineering Co., New Westminster, B.C. .... 3,080</p> <p>Apr. 11, 1918—War Masset, Foundation Co., Victoria, B.C. .... 3,080</p> <p>Apr. 13, 1918—War Tye, Pacific Construction Co., Coquitlam, B.C. .... 3,080</p> <p>Apr. 25, 1918—War Haida, Cameron-Genoa Mills, Victoria, B.C. .... 3,080</p> <p>Apr. 27, 1918—War Cayuse, Wm. Lyall Shipbuilding Co., Vancouver, B.C. .... 3,080</p> <p>May 11, 1918—War Mohawk, Quinlan &amp; Robertson, Ltd., Quebec, Que. .... 3,080</p>
<p>Steel Steamships.</p> <p>May 18, 1917—War Dog, Wallace Shipyards North Vancouver, B.C. .... 4,500</p> <p>July 9, 1917—War Wasp, Nova Scotia Steel &amp; Coal Co., New Glasgow, N. S. .... 1,800</p> <p>Aug. 19, 1917—War Fish, Port Arthur Shipbuilding Co., Port Arthur, Ont. .... 4,300</p> <p>Nov. 3, 1917—War Dance, Port Arthur Shipbuilding Co., Port Arthur, Ont. .... 3,400</p> <p>Mar. 16, 1918—War Camp, J. Coughlan &amp; Sons, Vancouver, B.C. .... 8,800</p> <p>Mar. 23, 1918—War Power, Wallace Shipyards, North Vancouver, B.C. .... 4,600</p> <p>Apr. 3, 1918—War Isis, Port Arthur Shipbuilding Co., Port Arthur, Ont. .... 3,400</p> <p>May 8, 1918—War Wizard, Collingwood Shipbuilding Co., Collingwood, Ont. .... 2,900</p> <p>May 21, 1918—War Bee, Nova Scotia Steel &amp; Coal Co., New Glasgow, N.S. .... 2,400</p> <p>May 27, 1918—War Osiris, Port Arthur Shipbuilding Co., Port Arthur, Ont. .... 3,400</p> <p>June 8, 1918—War Earl, Canadian Vickers Ltd., Montreal. .... 7,000</p> <p>June 29, 1918—War Duchess, Canadian Vickers, Ltd., Montreal. .... 7,000</p> <p>July 20, 1918—War Hathor, Port Arthur Shipbuilding Co., Port Arthur, Ont. .... 3,400</p> <p>July 29, 1918—War Charger, J. Coughlan &amp; Sons, Vancouver, B.C. .... 8,800</p> <p>Aug. 19, 1918—War Chief, J. Coughlin and Sons, Vancouver, B.C. .... 8,800</p> <p>Aug. 21, 1918—War Weasel, British-American Shipbuilding Co., Welland, Ont. .... 3,500</p> <p>Sept. 6, 1918—War Witch, Collingwood Shipbuilding Co., Collingwood, Ont. .... 2,900</p> <p>Sept. 19, 1918—War Taurus, Polson Iron Works, Ltd., Toronto. .... 3,500</p> <p>Sept. 28, 1918—War Faith, Canadian Vickers Ltd., Montreal. .... 7,000</p> <p>Sept. 28, 1918—War Noble, J. Coughlan &amp; Sons, Vancouver, B.C. .... 8,800</p> <p>Sept. 28, 1918—War Storm, Wallace Shipyards, Ltd., Vancouver, B.C. .... 4,600</p> <p>Oct. 5, 1918—War Horus, Port Arthur Shipbuilding Co., Port Arthur, Ont. .... 3,400</p> <p>Oct. 15, 1918—War Hydra, Polson Iron Works, Ltd., Toronto. .... 3,500</p> <p>Oct. 24, 1918—War Fiend, Midland Shipbuilding Co., Midland, Ont. .... 3,400</p> <p>Oct. 26, 1918—War Karma, Port Arthur Shipbuilding Co., Port Arthur, Ont. .... 3,400</p> <p>Oct. 29, 1918—War Joy, Canadian Vickers, Ltd., Montreal. .... 7,000</p> <p>Total, 25 steel steamships.....125,500</p>		 <p>Wooden cargo steamship War Halifax, 2,800 tons deadweight, for British Government. Laying the launch ways at the Southern Salvage Co.'s yard, Liverpool, N.S., Sept. 19, 1918.</p> <p>May 11, 1918—War Sioux, Port Arthur Dredging Co., Port Arthur, Ont. .... 3,080</p> <p>May 21, 1918—War Atlin, Wm. Lyall Shipbuilding Co., Vancouver, B.C. .... 3,080</p> <p>May 23, 1918—War Tatla, Western Canada Shipyards, Ltd., Vancouver, B.C. .... 3,080</p> <p>June 12, 1918—War Skeena, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. .... 3,080</p> <p>June 14, 1918—War Edensaw, New Westminster Construction &amp; Engineering Co., B.C. .... 3,080</p> <p>June 15, 1918—War Babine, Foundation Co., Victoria, B.C. .... 3,080</p> <p>Aggregate deadweight tonnage of 26 steel and 45 wooden steamships launched, 264,100 tons.</p> <p>Port Arthur Shipbuilding Co., Port Arthur, Ont.—With the sailing of the s.s. War Karma from Port Arthur, Nov. 24, for delivery to the Imperial Munitions Board, at Montreal, this company has completed its orders for building steel steamships for the British Government. In all, seven vessels have been built for British service, 6 of 3,400 d.w. tons under direct order from the Imperial Munition</p>
<p>Wooden Steamships.</p> <p>Dec. 28, 1917—War Songhee, Foundation Co., Victoria, B.C. .... 3,080</p> <p>Jan. 4, 1918—War Nootka, Western Canada Shipyards, Vancouver, B.C. .... 3,080</p>		



Wooden cargo steamship War Halifax, 2,800 tons deadweight, for British Government.  
Laying the launch ways at the Southern Salvage Co.'s yard, Liverpool, N.S., Sept. 19, 1918.

Aggregate deadweight tonnage of 26 steel and 45 wooden steamships launched, 264,100 tons.

**Port Arthur Shipbuilding Co., Port Arthur, Ont.**—With the sailing of the s.s. *War Karma* from Port Arthur, Nov. 24, for delivery to the Imperial Munitions Board, at Montreal, this company has completed its orders for building steel steamships for the British Government. In all, seven vessels have been built for British service, 6 of 3,400 d.w. tons under direct order from the Imperial Munitions



Board, and one of 4,300 d.w. tons which was under construction for foreign interests and taken over by the board.

**Quinlan & Robertson, Ltd.,** Quebec, Que.—The s.s. War Seneca, one of the steamships built by this firm for the British Government, had her trial trip in the St. Lawrence River, Nov. 23, but had only gone a short distance when a break occur-

### Steamships Required for Merchant Service.

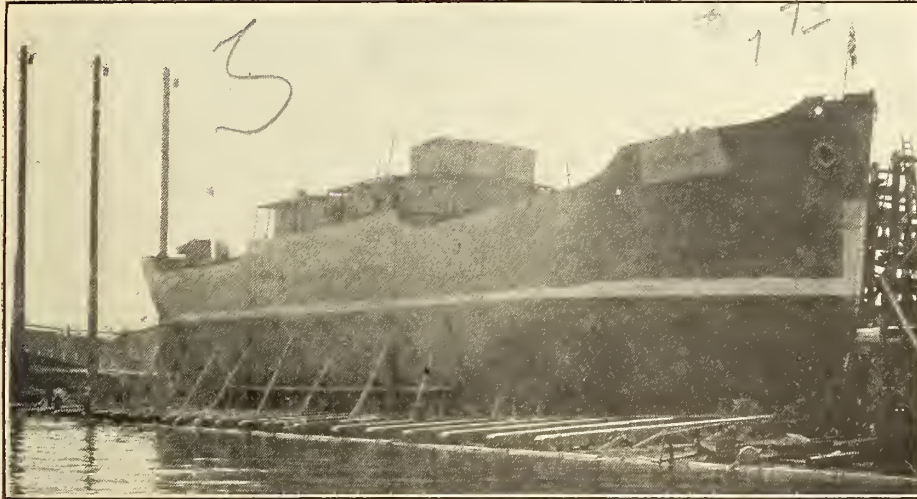
Ottawa press dispatch, Nov. 15:—In a discussion with the government's reconstruction committee today, representatives of the leading steamship companies of Canada, of the Montreal, Quebec, St.

This year there was only one boat to South Africa, and the trans-Pacific service has been entirely cut out. The steamship companies recognize the prior calls of the nations overseas for carrying food, and the necessity of having some sort of regulation to see that those needs are filled, but they asked that the ships should go back into private company management as soon as possible. They would be willing to observe all regulations as to cargoes and voyages. The government was asked to request the British Admiralty to send to Canada enough ships to meet her demands.

### Wotan-Montreal Collision.

An enquiry was held at Montreal recently into the cause of the collision between the s.s. Wotan and the barge Montreal in tow of the tug Weaver, in the Soulanges Canal, July 16. The s.s. David Mills was cited as a contributory cause. The court consisted of Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash and C. Lapierre as nautical assessors.

The judgment delivered, Nov. 25, declared that the court could come to no other conclusion than that the s.s. Wotan was placed in a peculiar situation by the actions of the tug Weaver and the barge Montreal, as well as the s.s. David Mills, and therefore exonerated the s.s. Wotan from all blame, and found that the other vessels named waived aside all rules of prudence in attempting such evolutions as they did, while the Wotan, which had the right of way, was close at hand, in such a narrow channel. The certificate of Joseph Seguin, master of the tug Weaver, was suspended for one month



Steel cargo steamship Karma, built by Port Arthur Shipbuilding Co., for British Government.

red in her machinery and she was compelled to put back.

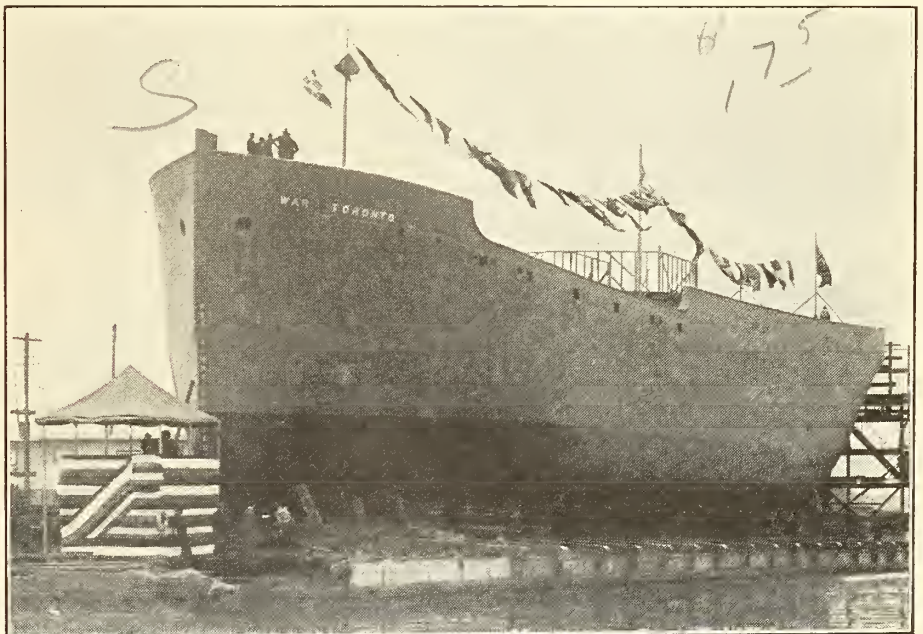
### Lock Gate Accident on Welland Canal.

The Montreal Transportation Co.'s s.s. A. McVittie, while upbound, light, Nov. 15, struck the tow path head gate of lock 12, and carried out both upper gates. The heel path lower gate was damaged somewhat and unstepped, but was not carried out into the level below. It was, however, necessary to replace it was a spare gate. The banks on both sides of the canal at the head of lock 11, were badly washed out by the water released, the estimate of the damage done being \$7,500. The gates were stepped and navigation resumed after a day of about 22 hours. The same three gates were carried out by the s.s. Pawnee, in August, and the filling at the head of lock 11 was practically completed when it was washed out again. The vessel, A. McVittie, was undamaged, and the master and mate seem unable to explain the reason for the accident. The master stated that he gave the signal to reverse, and the engineer stated that he reversed, but the master is convinced that the vessel did not have the usual vibration at the reverse. The mooring wire was making sparks in the compressor, and witnesses agree that the vessel was moving at a moderate speed. We are indebted to L. D. Hara, Superintending Engineer, Welland Canal, for the details of the accident.

**Capt. J. D. S. Phillips**, master of the s.s. Makura, which has been in the mail service between Canada and Australasia for some time, is reported to have been appointed Assistant Marine Superintendent, Union Steamship Co. of New Zealand, at Sydney, N.S.W.

**The Right Hon. Andrew Bonar Law** stated in the British House of Commons recently that the Government did not contemplate the nationalization of British shipbuilding.

John and Halifax boards of trade, and of the Canadian Manufacturers' Association urged on the government the necessity of getting merchant ships released from carrying war supplies of various kinds, in order to renew the trade with South Africa, Australia, New Zealand, the West Indies, China, Japan, Manila and South American ports. Goods ordered for these points are already awaiting shipment,



Wooden cargo steamship War Toronto, built by Toronto Shipbuilding Co., for British Government.

and a brisk traffic would open up immediately if the ships were available. Only about one-sixth of the trade which Canada formerly did has been transacted with Australia and South Africa because of the lack of tonnage in the last two years. The shippers insisted on the necessity of shipping from Canadian ports, saying that the U.S. war trade regulations caused delays because of the necessity of furnishing full information.

from the date of its receipt by the court, for lack of judgment in obeying the orders of the master of the barge Montreal, of which he was the servant. The masters of the barge Montreal and of the s.s. David Mills, having no certificates which could be dealt with by the court, were severely reprimanded for their recklessness in attempting to pass a vessel when she had precedence, and for violating the rules of the road.



## General Shipbuilding Notes Throughout Canada.

Acadia Shipbuilding Co., Saulnierville, N.S., expected to launch the schooner Merriam H. during November. The dimensions are: length 157 ft. overall, 126 ft. keel, 33.4 ft. beam and 12½ ft. depth; tonnage 422 gross, 359 net. She has been sold to A. S. Randell & Co., St. John's, Nfld.

The Anglo-Newfoundland Development Co. launched the schooner Bella Scott at Botwood, Nfld., towards the end of October. A sister vessel is under construction and is expected to be launched shortly. The report of the launching of the Bella Scott, in a St. John's paper, says:—"The whole proceedings were run through without a hitch. The vessel moved slowly, but persistently and steadily, for about an hour, finally taking her plunge into the bay."

Canadian Car & Foundry Co., Fort William, Ont.—The twelfth, and last, of the mine sweepers which this company has been building for the French Government, left Fort William, Nov. 14, for the seaboard.

Dominion Shipbuilding Co., Toronto.—A full canal size steel freight steamship for lake and ocean service was launched

fifth by July 31, and the remaining three by Aug. 30, 1910.

Fraser Brace Shipyards, Ltd., has been incorporated under the Dominion Companies Act, with \$750,000 capital, and office at Montreal, to carry on a general transportation and navigation and towing and wrecking business, and to build and deal in steam and other vessels, marine and railway terminals, wharves, docks, power houses, etc.

Foundation Co., Victoria, B.C.—At the commencement of November, 4 of the keels of the 20 wooden steamships ordered by the French Government, were laid in each of the company's two yards, and 2 more of the vessels were being framed in each yard. The launching of the first 2 vessels of the order is expected to take place during Feb., 1919.

L. E. & A. Graham, Port Greville, N.S., launched the tern schooner Milorene, Nov. 18. She has been sold to A. Moulton & Co., Halifax, N.S., for Newfoundland interests.

Halifax Shipyards, Ltd., has established its head office at 286 St. James Street, Montreal.

D. A. Huntley, Parrsboro, N.S.,

is building for the French Government, as mentioned in our last issue, will be of the following general dimensions: length over all 204 ft. 8 in., length between perpendiculars 195 ft., beam moulded 39 ft. 8 in., beam extreme 40½ ft., depth moulded 17 ft., depth of hold 15 ft., draft loaded 16 ft. They will each be equipped with a Scott water tube boiler having 2,000 sq. ft. of heating surface. It is expected that launchings will take place in December, January, February and March.

Wm. Lyall Shipbuilding Co., Vancouver, B.C.—The six auxiliary powered schooners, which we mentioned some time ago, as under construction by this firm, on its own account, are reported to have been sold to French interests for \$3,000,000. They have a deadweight capacity of 3,000 tons, and as soon as they are completed, it is stated that they are to be handed over to Trenholme & Thorndyke, Inc., Seattle, Wash., operating agents for French Government.

Marine Construction Co., St. John, N.B.—The auxiliary powered schooner Randfontein, under construction at this yard, is expected to be ready for launching early in January. She is reported to have been sold, subject to inspection after completion.

National Shipbuilding Corporation, Three Rivers, Que.—Keels are being laid for all of the 10 full powered steam wooden coal barges, which this company is building for the French Government, and it is expected that the whole of them will be launched within a year. The capacity of the yards has been doubled.

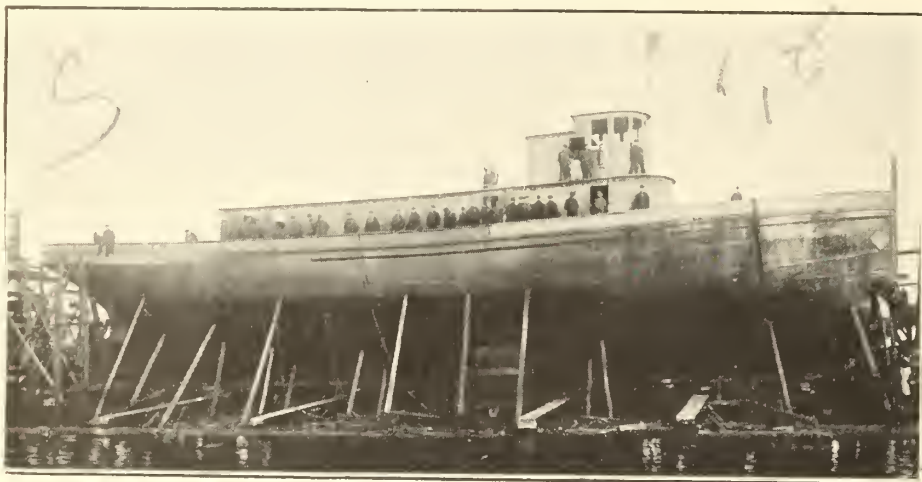
Port Arthur Shipbuilding Co., Port Arthur, Ont., launched an ocean going steam tug, Nov. 8, which was christened Victoria by Mrs. J. T. Emerson. The Victoria is an all steel ocean going tug, built to Lloyd's classification. The general dimensions are: length between perpendiculars 119 ft., breadth moulded 26 ft., depth moulded 26½ ft. The propelling machinery consists of triple expansion, surface condensing engine with three cylinders 15, 29 and 47 in. diam. by 36 in. stroke, developing 800 h.p., and supplied with steam by 2 Scotch boilers 11 ft. long by 11 ft. diam. at 180 lb. working pressure. The vessel is to be delivered before the close of lake navigation.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—The seagoing steam tug Murray Stewart, similar to the tug Victoria, illustrated in this issue, is expected to be delivered before navigation closes.

St. John Dry Dock & Shipbuilding Co., Ltd., St. John, N.B.—The New Brunswick Government is being asked, jointly with the City of St. John, to assist in financing the company to the extent of \$500,000, in view of the large amount of money the company will have to spend owing to the increased cost of machinery. The company does not ask that any portion of any subsidy granted, be paid until the keels of at least two 8,000 ton steel steamships have been laid.

W. D. Sweeny, Yarmouth, N.S.—The wooden steamship mentioned in our last issue as being under construction at this yard, is for the St. John Steamship Co., St. John, N.B. She will have a carrying capacity of about 450 tons.

Taylor Engineering Co., Vancouver, B.C.—The motor ship, designed by this company, and built at the Vancouver Shipyards, and of which some preliminary



Ocean going tug Victoria, just prior to launching by Port Arthur Shipbuilding Co., Port Arthur, Ont., Nov. 8, 1918.

at this yard, Nov. 23, and christened Le Quesnoy, by Mrs. Campbell Reaves, wife of the Secretary-Treasurer of the John Inglis Co., Toronto. The vessel, as with previous ones built by this company, is for class 100 A1 at Lloyd's, for trans-Atlantic service, and has been built on the company's own account. Her dimensions are: length over all 261 ft., breadth moulded 43½ ft., depth moulded 28 ft. 2 in.; deadweight capacity 4,300 tons. She is equipped with triple expansion engines, 1,400 i.h.p., and 2 Scotch boilers, built by John Inglis Co.

Fraser, Brace & Co., Ltd., Montreal.—The 8 wooden steamships which this company has on order for the French Government, as mentioned in our last issue, will be of the following dimensions:—length between perpendiculars 195 ft., beam moulded 39 ft. 8 in., beam extreme 40½ ft., depth moulded 17 ft., depth of hold 15 ft., draft loaded 18 ft., deadweight carrying capacity 1,500 tons of 2,240 lbs. They will be coal burning steam twin screw vessels, and it is anticipated that they will be launched approximately as follows:—first by May 31, second and third by June 30, fourth and

launched the schooner Huntley, Nov. 18. She is 612 tons gross and 480 tons net, class for 13 years with Bureau Veritas. She is to be equipped with auxiliary power, and when ready for sea, will take on cargo for Italy. She is owned in Newfoundland.

W. R. Huntley & Son, Parrsboro, N.S., launched the 4 masted schooner Governor Parr, Nov. 20. Her dimensions are: length 218 ft., breadth 39 ft., depth 18 ft., registered tonnage 912. She is classed for 12 years with Bureau Veritas, and is equipped with a Fairbanks-Morse engine of 15 h.p. for hoisting power. She has been towed to St. John, N.B., to take cargo for South America. Her owners are C. T. White & Son, Sussex, N.B. The same firm is having 2 schooners built at the same yards, of the 3 masted type and about 400 tons each.

The Kingston Shipbuilding Co., Kingston, Ont., which has been owned by the Collingwood Shipbuilding Co., for some time, has changed its name to Collingwood Shipbuilding Co., Ltd.

William Lyall Shipbuilding Co., North Vancouver, B.C.—The 8 wooden steam coal carrying vessels, which this company



details were given in Canadian Railway and Marine World for May, underwent a series of trials Nov. 18. The vessel, which has been named *Teco* temporarily, has a deadweight capacity of 300 tons, and is to be operated between Seattle, Wash., and northern B.C. ports. She is arranged with a large hatch so that gasoline and distillate tanks can be put in and the vessel converted into a 1,200 barrel oil tank vessel. Her dimensions are: length 125 ft., beam 23 ft., and she is equipped with Bolinder heavy oil engine of 160 h.p. for a speed of 8½ knots an hour when loaded. The hull is designed with a straight bow and tallowboat stern with raised forecandle and accommodation for the crew aft. The keel is 10¾ in. sided and 11¾ in. moulded, with scarphs 5¼ ft. long fastened with ¾ in. galvanized bolts. There is a false keel of fir 2¾ x 10¾ in. and the keelson is 11¾ x 11¾ in., with 5¼ ft. scarphs. The mast is 65 ft. with two 37 ft. booms and a 23 ft. boom for handling cargo. A power winch is also supplied, capable of lighting 2,400 lb. The vessel is owned by W. M. Rooke, Vancouver.

**Three Rivers Shipyards, Ltd.** (National Shipbuilding Corporation), Three Rivers, Que., has deposited with the Public Works Department, Ottawa, description of site and plans of the piers to be built in the St. Lawrence River at Three Rivers in front of Lot 9.

**Three Rivers Shipyards, Ltd.**, Three Rivers, Que.—As mentioned previously, the National Shipbuilding Corporation, 42 Broadway, New York, has purchased the entire capital stock of this company, and the plant is being operated as the company's Three Rivers Shipyard Limited Division. Arrangements have been made to double the size of the plant, in order to handle the French Government's contract for 10 wooden steamships of 1,500 tons each.

**Yarmouth Shipbuilding Co.**, Yarmouth, N.S., launched the 3-masted schooner *Marah* Nov. 21. As soon as she is ready for sea, she will load a cargo for Havana, where she will take on another cargo for the west coast of Africa.

### Atlantic and Pacific Ocean Marine.

The Hudson's Bay Co.'s s.s. *Discovery*, it is announced, is to be drydocked at St. John's, Nfld., during the winter, for a general overhaul. The report that she is to be sold is denied.

The s.s. *Afghan Prince*, which was wrecked on the Forchu shoal off the Nova Scotia coast, early in the year, broke up during a storm in November, and the wreckage disappeared. No lives were lost in the casualty, and a portion of the cargo was salvaged.

The Minister of Marine is reported to have stated at Ottawa, Nov. 25, that the British Admiralty will shortly release the Canadian Pacific Ocean Services' ocean steamships *Empress of Asia* and *Empress of Russia*, when they will be overhauled and returned to their usual service.

The Canadian Pacific Ocean Services' s.s. *Lake Manitoba*, which was very badly damaged by fire at Montreal some little time ago, has been purchased by Halifax Shipyards, Ltd., and taken to Halifax, N.S., where she will be examined and repaired. It is stated that a large sum will be spent in overhauling her and making her again fit for ocean service.

Robert Dollar, of the Canadian Robert Dollar Steamship Co., while in Ottawa recently, is reported to have stated that

his company intended to continue the operation of steamships from Vancouver to the Far East, and if business warranted it, to place additional vessels in the service. It is also reported in Vancouver that the company intends placing a through steamship service to India in operation shortly, provided certain arrangements can be made with the Dominion Government regarding a mail service, and that, should such arrangement be made, it would be desirous of entering into a working agreement with a transcontinental railway.

The report is again revived that Canadian Pacific Ocean Services, Ltd., is negotiating for the acquirement of a large steamship company operating between Great Britain and the Orient, and owning about 60 steamships. As we have pointed out before, there is a tendency just now toward a centralization of steamship operation, and control of British steamships, but any statements made at present, may be regarded as mere speculation. It was stated some time ago, that the British Government intended to assume complete control of its steamship lines, but this has been semi-officially denied. From the general trend of events, it would appear that the C.P.R. steamship lines will maintain their independence, but in the present state of political unrest, it is not safe to prognosticate as to how far any government may go in the nationalization of transportation services. The formation of an "all red" line encircling the world has been before the public for years, and as the largest transportation system in the world, it seems to be a settled thing that the C.P.R. lines should be the main constituent. There has, however, of late, been a strengthening of other interests, by amalgamation and otherwise, which would, under independent managements, lead to a duplication of services.

### Maritime Provinces and Newfoundland.

Capt. H. T. LeBlanc, Yarmouth, N.S., is reported to have sold the s.s. *Vera B. Collins* to VanHamelryck & Co., Belgium.

The s.s. *Cascapedia*, owned by Nova Scotia Steamships, Ltd., was wrecked during a severe storm along the Atlantic coast, Nov. 17, whilst en route from Halifax, N.S., to St. John's, Nfld. She was subsequently set on fire and abandoned. The crew were all rescued by a British s.s. *Bellerophon* and landed at Falmouth, England. The *Cascapedia* was built at Dundee, Scotland, in 1895, and named *Fastnet*. Her dimensions were: length 245.2 ft., breadth 35.2 ft., depth 22.5 ft.; tonnage 1,849 gross, 1,185 register, and she was equipped with engine of 260 n.h.p. driving a screw. She was owned formerly by Canada Steamship Lines, Ltd.

### Province of Quebec Marine.

The s.s. *St. Croix*, running between Lotbiniere and Quebec, broke her propeller during a storm, Nov. 19, and was beached at St. Antoine de Tilly.

The St. Charles River at Quebec was closed to navigation Nov. 10, owing to the replacement of the railway swing bridge near the mouth.

The Quebec & Levis Ferry Co.'s s.s. *John S. Thom* is reported to have been sold to New York parties for \$180,000. She was built at Detroit, Mich., in 1890,

and named Henry R. James. Her dimensions are: length 240 ft., breadth 40 ft., depth 14¾ ft.; tonnage 1,440 gross, 911 net, and she is equipped with engine of 110 n.h.p., driving a screw. The company is stated to have declared a bonus of 50% on the stock holding.

Dredging has been completed and the areas swept by the Public Works Department, in the main channel in Lake St. Louis, as follows:—the shoal area north of the axis of the main channel about half a mile above Dixie front range light, to a depth of 16 ft. for a distance of 115 ft. from the axis of the channel, and for 220 ft. a little above red gas buoy 76S; a width of 105 ft. has been dredged off the north extreme of the shoal which extended from the southward to within 35 ft. of the Dixie range lights, and this has been swept to 16 ft. and gives a channel width of 140 ft. south of the axis of the range. The removal of portions of these three shoals gives a clear channel on the alignment of the Dixie lights, with nothing nearer the alignment than 140 ft. on the south and 115 ft. on the north. The department from the alignment at gas buoy 77S, formerly necessary, is not now required.

### Ontario and the Great Lakes.

The Toronto City Council is suing Canada Steamship Lines for income tax for 1917 and 1918, amounting to \$37,406.25, on assessments made in 1916 and 1917.

James Playfair, President and General Manager, Great Lakes Transportation Co., Midland, has denied the report that he had purchased the C.P.R. steamships *Alberta*, *Athabasca* and *Manitoba*.

Insurance in general for vessels on the Great Lakes expired at midnight Nov. 30, but it was stated that arrangements had been made for some extension of time, and that a number of vessels would sail after that time.

The U.S. Lake Survey has given notice that the barge no. 1, formerly a Lake Michigan car ferry, loaded with lumber and in tow of the s.s. *Mathew Wilson*, broke in two during a storm on Nov. 8, and sank near North Point, Thunder Bay, Lake Huron.

The Minister of Public Works was reported to have stated at Ottawa, Nov. 16, that next year's estimates would include a sum sufficient to complete the turning basin in Ashbridge Bay, and the concreting of the crib work on the Sunnyside section of the Toronto harbor. The amount involved is said to be about \$500,000, of which \$150,000 will be a revote.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level for October, as follows: Superior, 602.49; Michigan and Huron, 581.18; St. Clair, 575.50; Erie, 572.29; Ontario, 246. Compared with the average October levels for the past 10 years, Superior, 0.14 ft. below; Michigan and Huron, 0.77 ft. above; Erie, 0.21 ft. above, and Ontario 0.18 ft. above.

The s.s. *Chester A. Congdon*, owned in Duluth, Minn., while en route from Fort William to Port McNicoll, ran ashore at Canoe Rocks, near Passage Island, at the head of Lake Superior, Nov. 6, and became a total loss. The crew were all safely removed before the vessel broke during heavy weather following a strong southeast gale on Nov. 8. The cargo consisted of 380,000 bush. of wheat for the Wheat Export Co., and, together with the hull, is valued at \$1,500,000, which is said



to be the largest individual loss on the Great Lakes.

### British Columbia and Pacific Coast.

The C.P.R. s.s. Island Princess was withdrawn from the Gulf Islands service Nov. 19, for general overhaul. The ser-

vice is being performed by the company's s.s. Otter.

The C.P.R. resumed its Alaska steamship service, Nov. 17, with the sailing of the s.s. Princess Mary from Vancouver. This is the first of the company's vessels to be placed on that route since the loss of the s.s. Princess Sophia at Vanderbilt Reef.

The Naval Service Department's patrol steamship Galiano, foundered off the Danger Rocks, Queen Charlotte Islands, during a gale, about Nov. 18, all hands being lost. She was built at Dublin, Ireland, in 1913, and was screw driven by engine of 161 n.h.p. Her dimensions were: length 162.3 ft., breadth 27.1 ft., depth 13.1 ft.; tonnage, 393 gross, 129 register.

## The Harbor of St. John, New Brunswick.

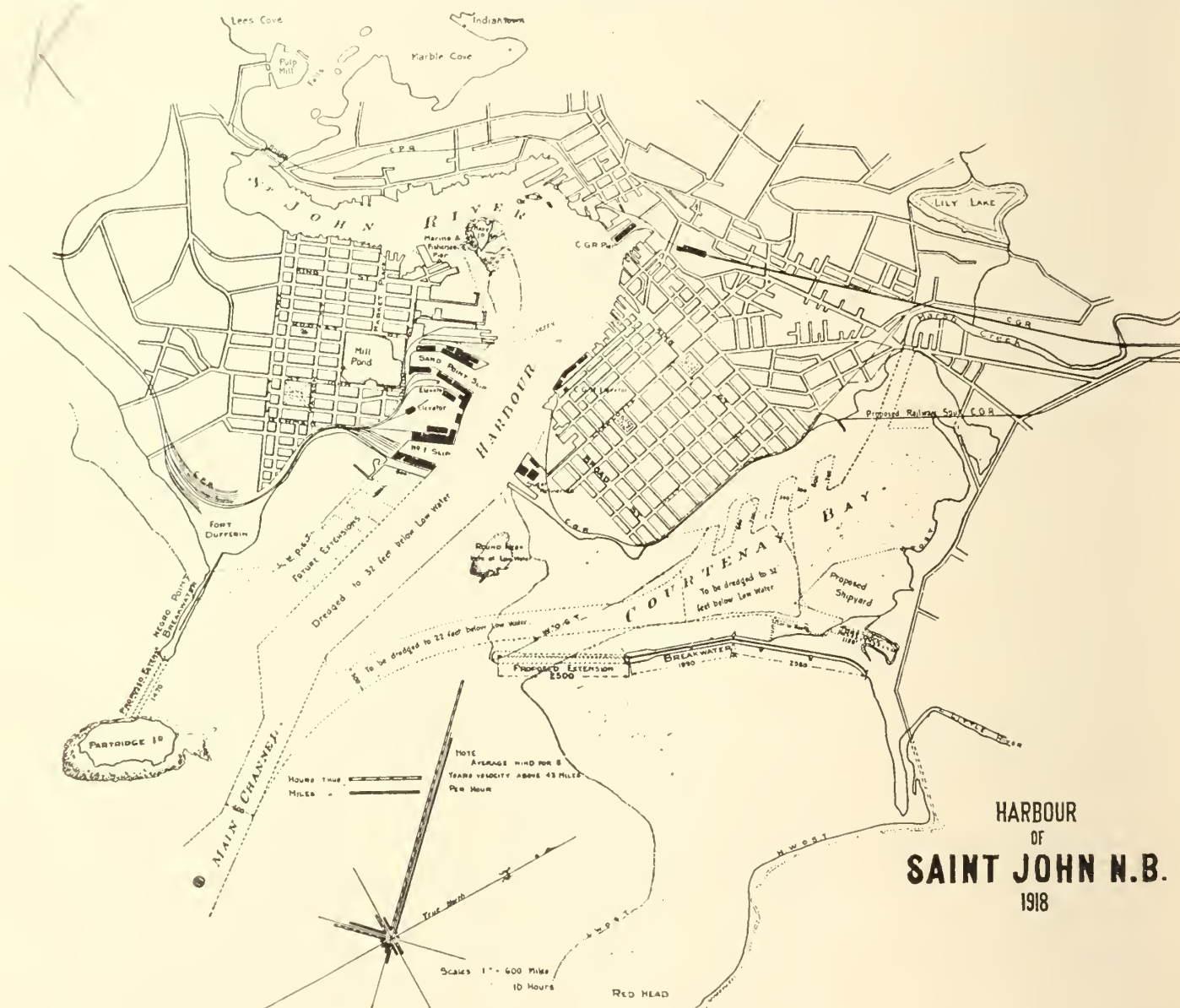
By Alex. Gray, Harbor Engineer, Dominion Public Works Department, St. John, N.B.

St. John harbor is situated at the estuary of the River St. John, which is about 460 miles long, with a drainage area of 26,000 square miles, and an average flow of about 20,000 c.f.s. Numerous articles have been published on the tidal phenomena in the Bay of Fundy, and St. John River, but it is unnecessary to deal with these in this paper, further than in

the water surface of the river is 15.0 ft. above low water datum of harbor, and the tidal range in the harbor is 13 to 30 ft. The variation of the sea level, therefore, at high water is from 2 to 14 ft. higher than the river, thus forming at every tide the Reversing Falls. The extreme high water of the river during spring freshet rises from 10 to 18 ft.

later than high and low water in the harbor. The average tidal rise at Indian-town, about half a mile above the falls, is about 1.3 ft.

The gorge at the head of the harbor, with its merged reef, forms a slack water reach, which is navigable for small craft from St. John to Fredericton, about 84 miles, and for a total of about 90 miles



so far as they affect the engineering features of harbor development.

The river discharges into the head of the harbor, through a rock gorge about 1,200 ft. long and 400 ft. wide. The small cross sectional area of the channel does not admit the flood as fast as it rises, or discharge the ebb as fast as it falls into the bay. The minimum summer level of

above the minimum. Navigation between the harbor and the river is only possible for a period of from half an hour to an hour, occurring before and after high water—the time generally being about 2½ hours ebb and 3½ hours flood. At Indian-town, about a mile above the falls, high water occurs about 1 hour 6 minutes, and low water occurs 2 hours 20 minutes,

on several tributaries of the river. This slack water reach acts as a settling basin, in which the heavier silt is precipitated.

The exposure of the harbor is from the southeast to the southwest. The prevailing winds are from the northwest, from which quarter the severe storms generally originate, and afterwards change to the south, causing considerable inconvenience



in the harbor. The height of the maximum waves during these storms is about 10 ft.

The Negro Point Breakwater, 2,250 ft. long, is of the rubble mound type, with stones placed at random on the outer slope, weighing 2 to 8 tons, with concrete superstructure for about 940 ft. It was originally designed with a cribwork core, commenced in the spring of 1875 and completed in Sept., 1877. A heavy storm, however, on Feb. 11 and 12, 1879, carried away 1,300 ft. of the cribwork, to from 10 to 19 ft. below high water. From that date to about 1887, work was carried on annually in placing stone to bring the seaward side to a uniform slope of 3 to 1. There is now a concrete superstructure 15 ft. wide for a length of 946 ft. The seaward slope at concrete superstructure is 2 to 1. The portion of breakwater, without concrete superstructure, has been raked down by storms to a slope of about 6 to 1, and the crest has been moved towards the harbor about 35 ft. off center line. Around the lighthouse, are placed concrete blocks, weighing 60 to 80 tons each; they are founded a little above low water level. Mr. Shewen, who designed these blocks and the method of construction, arranged the work so that the pouring of concrete was begun as soon as the foundation was dry, and proceeded with at such speed so as to keep the top of the block above the rising tide, the covering of the casing being pressed down upon a cushion of jute, stuffed with oakum, before the tide rose to the top of the block. After extreme storms, marks on the stones, the disappearance of seaweed from the surface, and the displacement of the larger stones indicate the considerable forces exerted. The concrete work in the breakwater is in first class condition, and offers encouragement for concrete in salt water, providing sufficient care is exercised in mixing and placing.

Observations with a marine dynamometer give the force of waves at breakwater a pressure of upwards of 4,000 lb. per sq. ft. Part of the concrete work and the dynamometer observations were carried out under the direction of Major E. T. P. Shewen, who was for a number of years District Engineer for the Public Works Department.

Through the opening of about 1,500 ft. between the end of the breakwater and Partridge Island, heavy southerly waves break and expand, following the ragged face inside the shore, and continue to roll toward the harbor, causing such extensive erosion of the coast line that protective measures had to be taken in building a revetment wall along the foot of Fort Dufferin.

The principal development in the harbor to date has been on the west side, on which there are 10 berths, with 32 ft. draft, and room for 15 additional berths as soon as Negro Point breakwater is extended to Partridge Island, and railway facilities re-arranged. On account of the limited frontage, and the railway terminal situation, however, the harbor is being developed from both sides.

The entrance channel is 12,000 ft. long, 600 ft. wide, and 32 ft. clear depth at low water is maintained by annual dredging. The annual siltation varies, but generally amounts to about 2 ft.

When the Negro Point Breakwater is extended to Partridge Island (about 1,500 ft.) the littoral drift from the southwest will be arrested and the flow, more concentrated in the channel, will increase the scour and assist in maintaining the channel depth.

The materials dredged in the harbor are principally clay, sand, gravel and silt.

There is a considerable quantity of submarine rock to be removed in order to straighten the channel, but on account of the extreme cost, this work is being delayed.

During the year, there are generally only 2 to 8 tides below zero, forty 0.5 tides, and 60 tides 1.5 ft. above zero, the remainder of the tides range from 2.3 to 6.7 ft. above zero. Boats generally prefer to berth at slack water; it is, therefore, evident that the channel is navigable for the largest steamships.

The wharves are built to provide 32 ft. at low water. The harbor fortunately is free from the teredo, limnora and other sea worms. The type of construction has been timber cribwork and concrete with cribwork substructure. On account of the scarcity and high cost of timber and the necessary extreme height of the wharves, about 65 ft., other types of structure are being investigated.

The outstanding features in St. John harbor are the extreme range of tide and the consequent currents. The inward mean tidal flow is about 20,000 c.f.s. and the outward is about 40,000 c.f.s. The maximum surface current velocity at the minimum section in the harbor is about four miles an hour.

Unfortunately, no systematic meterings have been made of the river, and consequently its flow is only an estimate. A series of float observations have been taken at various stages of the tide, and at various depths below surface. These show very erratic current conditions. The fresh water from the river flows out while underneath the tide rises and falls regularly.

The principal wharves are of cribwork, with concrete superstructure, the cribs being placed on a prepared dredged bed, covered to an average depth of 5 ft. with broken rock. Behind the cribs, selected dredged material is filled in, on which the necessary railway sidings and sheds are built. The sheds are one story, of timber construction. At a number of the wharves, grain conveyors are built, from which boats can be loaded with grain at any stage of the tide. In addition to vertical fenders of 12 x 12 in. hard pine, floating fenders about 36 in. diameter and 33 ft. long, are placed about 80 ft. centers. In berths 15 and 16, which are more exposed to wave action, the life of these floating fenders does not exceed two years.

The Courtenay Bay development, on the east side of the harbor, comprises the building of a dry dock 1,150 ft. long and 125 ft. wide, with 40 ft. of water on sill at high water, ordinary spring tides, and elevation of sill 14 ft. below low water, spring tides; the building of a breakwater 7,070 ft. long, of which 4,570 ft. has been completed; the dredging of a basin 32 ft. below zero, and channel 22 ft. below zero (zero being extreme mean low water). The details and layout of the wharves have not been decided. The breakwater is of the rubble mound type, top width 20 ft., seaward slope varying from 2 to 1 to 3 to 1, according to location.

The breakwater does not have the exposure of Negro Point breakwater and it is therefore not expected that the slopes will suffer the raking down experienced at the latter place. The stones at the outer end, weighing upwards of 10 tons, were lifted from their beds and moved about 50 ft. during a storm in October, 1917. The rock from the breakwater is obtained from the dry dock site, loaded by steam shovels and hauled by a locomotive on standard track on trestle, and dumped in the work. At the outer end of the breakwater, where the embankment is wide on account of the slopes and depth,

two trestles will be used to ensure the larger stones being placed outside.

St. John, on account of geographic situation and consequent long railway haul, is principally a winter port. The traffic in 1895 amounted to \$3,333,000 imports, and \$3,000,000 exports, whereas during 1917, it was \$16,750,000 imports, and \$200,000,000 exports.

### Mainly About Marine People.

Sir H. Montagu Allan, formerly of the Allan Line Steamships, who has been in England for some time in connection with war work, has resigned the Royal Trust Co.'s vice presidency, in Montreal, but remains on the board.

Frank McDonnell, heretofore Assistant to Chairman, Board of Steamship Inspection, Marine Department, Ottawa, who has been appointed Chairman, Board of Steamship Inspection, to succeed T. R. Ferguson, deceased, was born Oct. 18, 1878, and first entered government service Mar. 6, 1905, receiving a permanent appointment Sept. 1, 1908, and being appointed Assistant to Chairman, Board of Steamship Inspection, April 1, 1917.

J. W. Norcross, Vice President and Managing Director; F. S. Isard, Comptroller, and M. J. Haney, another of the directors, Canada Steamship Lines, Ltd., left Montreal, Nov. 22, for London, Eng., for consultation with the company's advisory board there, concerning the company's future policy respecting ocean trade.

E. W. Holton, whose appointment as General Freight Agent, Northern Navigation Co., Sarnia, Ont., was announced in our last issue, was born at Belleville, Ont., Dec. 15, 1872, and entered transportation service as junior clerk in the local freight office at Belleville, Ont., and, until Mar., 1904, was chief clerk to General Freight and Passenger Agent, Bay of Quinte Ry., Deseronto, Ont.; Mar., 1904, to Feb. 1, 1910, chief clerk to Traffic Manager, Northern Navigation Co., Sarnia, Ont.; Feb. 1, 1910, to Mar. 12, 1913, Eastern Passenger Agent, same company, Sarnia, Ont.; Mar. 12, 1913, to Oct., 1918, General Passenger Agent, same company, Sarnia, Ont.

Alfred Erwin McMaster was presented with a set of gold cuff links and a diamond stick pin, at Port Arthur, Ont., Oct. 16, on his resigning the position of Secretary-Treasurer, Port Arthur Shipbuilding Co., having been appointed Treasurer, Whalen Pulp & Paper Mills, Ltd., Vancouver, B.C. He was born at Perth, Ont., Oct. 22, 1885, and entered transportation service in 1902, since when he has been, to May, 1903, clerk in Freight Department, C.P.R., Keewatin, Ont.; May, 1903, to 1905, clerk, C.P.R., Port Arthur, Ont.; 1905 to Aug., 1907, chief clerk, C.P.R., Port Arthur, Ont.; Aug., 1907, to Aug., 1908, agent and chief clerk to Superintendent, Grand Trunk Pacific Ry., Fort William, Ont.; Aug., 1908, to July 15, 1913, agent and General Agent, G.T.R., G.T.P.R. and G.T.P. Coast Steamship Co., Prince Rupert, B.C.; July 15, 1913, to Sept. 30, 1916, Commercial Agent, G.T.P.R., Regina, Sask.; Sept. 30 to Dec. 21, 1916, Division Freight Agent, G.T.P.R., Edmonton, Alta.; on Dec. 21, 1916, he was appointed Assistant Secretary for British Columbia, Canadian Manufacturers' Association, with office at Vancouver, and resigned in Aug., 1917, on his appointment as Secretary-Treasurer, Port Arthur Shipbuilding Co., Port Arthur, Ont.



## Wooden Steamship Building in Canada for French Government.

Canadian Railway and Marine World for November contained information, with some details, as to the twenty 3,000 ton and fifty 1,500 ton wooden steamships which have been ordered in Canada for the French Government.

### The 3,000 Ton Wooden Steamships.

Following are the general dimensions, etc., of the twenty 3,000 ton d.w. wooden steamships:—

Length over all .....	293 ft.
Length between perpendiculars .....	276 ft.
Beam extreme, about .....	47½ ft.
Beam moulded, about .....	46½ ft.
Depth moulded .....	23½ ft.
Draft over keel, about .....	21¾ ft.
Deadweight carrying capacity .....	3,000 tons
Tons displacement .....	5655.5
Block co-efficient used .....	718

The vessel to be of single deck cargo type, built principally of Oregon and Washington pine, with hold beams, wood deck houses and rails. The vessel to have a cruiser or elliptical stern, with long poop deck aft and raised forecastle forward. The vessel to have 5 hatches, to have 4 watertight bulkheads, 1 bunker bulkhead which is to be non-watertight, and 1 screen bulkhead. One watertight door between engine and shaft tunnel to be furnished. Accommodations for officers will be in deck houses erected in the poop deck. Accommodations for the crews will be located in the forecastle. A bridge and bridge house will be erected at the forward end of the poop. Accommodations for gun crew of men to be arranged in the wheel house aft. Eight cargo winches, one of which is to be a warping winch, are to be installed. The windlass on forecastle head suited to handle anchors and full scope of chain, and also arranged for warping as usual practice.

Feed water tanks of full capacity to be located aft of engine room, top of tanks to be on level with all of deck forming shaft tunnels. Culinary water will be distributed from two separate steel tanks. The vessel is to be driven by twin screws, with engines located abaft amidships.

The vessel is to be built to the requirements of the Bureau Veritas for highest classification, as far as necessary for a cargo steamer. All lumber used in the construction of the vessel to be of Oregon or Washington pine and fir, unless otherwise specified. All materials to be to the satisfaction of the Bureau Veritas for highest classification. As long lengths as practically can be obtained without delay for the completion of the vessel are to be used in the keel keelsons, planking and ceilings, to be clear of shakes, loose knots and other defects and faults, and as far as possible free from sap. All decking to be edge grain, fastenings to be treenails, screw and drift bolts of galvanized and black iron as per best practice.

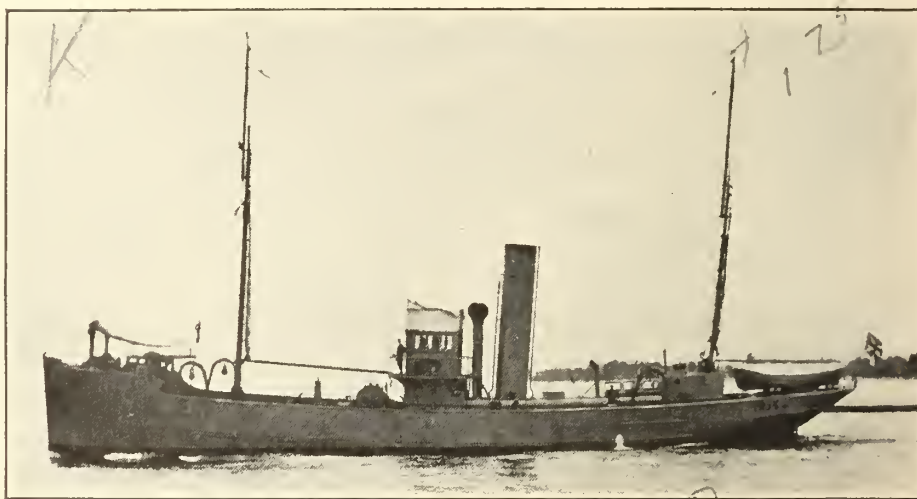
It is the intent of these outline specifications to describe the vessel complete and ready for sea, except for water, fuel and stores. Detail specification will be furnished later giving full description of materials and machinery entering into the construction of the vessel. The contractors are to supply the owner with vessel constructed in a workmanlike manner, satisfactory for ocean service except for water, fuel and stores. The work to be to the satisfaction of the owner, his representative, or Bureau Veritas inspectors and surveyors. The contractors are to furnish all necessary lines, offsets, construction drawings and all detail plans for the successful construction and completion of the vessel.

When completed and ready for trial, the owner will fill the bunkers with coal and water tanks with fresh water. Then a series of progressive trials will be run on a measured mile course, at which a speed of 11 knots is to be obtained. The vessels are to be delivered by the contractors at the yard at Victoria, B.C., or if the owner decides on delivery elsewhere, the contractors are to be compensated for any such delivery as per arrangement agreed upon. The contractors are to keep the vessel, including all outfit and material entering into the construction of the vessel, fully insured, both ashore and afloat, until delivered to the owner.

All scantlings to be shown in midship section and as approved by Bureau Veritas. Should any difficulty be found in obtaining the size of scantlings as shown on drawings, and as specified in detail specifications to be submitted when signing contract, it is understood that the

projecting ends of fastenings and visible iron work, including iron work on rider keelson, to be painted with red oxide paint.

The propelling machinery is to be built to conform to and meet with requirements of Bureau Veritas for highest classification. The machinery will consist of two 550 h.p. vertical, inverted, direct-acting, three-crank, triple expansion marine engines, each to develop not less than 550 i.h.p. when working under full boiler pressure. The boilers will consist of two coal-burning Scotch boilers with a heating surface of about 3,500 sq. ft., built for a steam working pressure of 225 lb. a sq. in. There will be one each: main surface condenser, auxiliary condenser with combined air and circulating pump, steam driven centrifugal circulating pump, independent air pump, main feed pump, auxiliary feed pump, fire and bilge pump, sanitary pump, general service pump, bilge pump, fresh water pump, injector, feed



Steel steam trawler 15, built for Naval Service Department, by Polson Iron Works, Toronto.

contractors are to use a different sized scantling, as long as the same is approved by Bureau Veritas for highest classification.

On top of wood keelsons, rider keelson is to be installed, to be of lattice girder construction of approved design, to the satisfaction of Bureau Veritas. All necessary davits, life boats, anchors and cable, steering engine, ladders, storerooms, and wireless apparatus are to be furnished and installed. Heating, plumbing to be furnished and installed to the approval of Bureau Veritas.

Electric lighting plant is to be installed, consisting of two 7½ k.w. engine or turbine driven generator sets complete, all wiring to be furnished and installed; one switchboard with double pole switches, ammeter, voltmeter and short circuit indicator. Entire installation to conform to the requirements of Bureau Veritas. Complete pumping arrangements to be fitted. Hand pump scuppers, fire service, etc., to be installed to the satisfaction of Bureau Veritas.

Outside planking below load waterline to be painted with 2 coats of copper paint. All above to have 3 coats of lead and finished with color as selected by owner. All interior work to have 3 coats of lead paint. Interior accommodations to be finished with color as selected by owner. All deck work, fittings, etc., to be finished in color as selected by owner. Inside of decks, clamps, etc., to be oiled and all

water heater, evaporator feed pump, oil filter, induced draft fan, electric generating set and switchboard, ice machine, and evaporators, distiller, waste and soda tanks, engineer's storeroom, workshop, together with such other machinery and outfit as is necessary for the proper operation of the ship.

The Foundation Co. of British Columbia, Ltd., has the contract for these vessels and has commenced building them at Victoria, where it has two yards, the one at which it built five 2,800 ton wooden steamship hulls ordered by the Imperial Munitions Board for the British Government, the other yard adjoining, which it has leased from the Cameron-Genoa Shipbuilders, Ltd. These two yards have 8 ways. It is expected to launch the first 8 hulls before April 1, 1919; the second 8 before Aug. 1, 1919, and the last 4 before Nov. 1, 1919. The contract calls for the delivery of the 20 completed steamships before Jan. 1, 1920. The vessels have been designed by Cox & Stevens, New York, N.Y.

### The 1,500 Ton Wooden Steamships.

The vessels, which are described as first class full powered barges, will have the following general dimensions:—

Length over all .....	204 ft. 6 in.
Length between perpendiculars .....	195 ft.
Beam, moulded .....	39 ft. 8 in.
Beam, extreme .....	40 ft. 6 in.
Depth, moulded .....	17 ft.
Depth of hold .....	15 ft.
Draft, loaded .....	16 ft.



They are to be built of Douglas fir, all timber in keel, keelsons, stem, apron, stern post, frames, deadwoods, ceiling, deck beams, stanchions, pointers, breast hooks, etc., to be no. 1 merchantable; planking, bulwarks, rails and rail stringers, waterways, coamings and all timber above deck, to be no. 1 select, and the deck is to be clear vertical grain, no. 2 grade. The ceiling from floor to clamps to average 40 ft. lengths, also the clamps, planking above the bilge to deck, and waterways, while the rail is to be in lengths of not less than 40 ft, and the planking and bottom on bilges to average 35 ft. Keel, sided 18 in., moulded 12 in. net; shoe, sided 12 in., moulded 3 in. net; frames, half sided 8 in., moulded 20 in. at keel, 14 in. at bilge, 8 in. at head, spaced 27 in. centers. From the break of the bridge deck aft, and the forecastle deck forward, the frames to run up to rail double, and between these points the frames to be single from deck to rail. Stem, sided 18 in., moulded about 24 in., and connected to keel with a natural crook fir knee, or in other approved manner. Apron, sided 18 in., moulded 18 in.; deadwood, sided 18 in.; stern post, sided 18 in. at keel, moulded 24 in., and connected to keel with fir knee. Rudder trunk to be bolted securely to stern post. The main and sister keelsons to be sided 16 in. and moulded 14 in.; first and second rider keelsons to be sided 16 in. and moulded 14 in.; first and second rider sister keelsons to be sided 14 in. and moulded 14 in. From sister keelsons to main deckhouse, the ceiling to be 8 by 11 in.; the 'tween deck ceiling to be 4 in. thick, butted and spike fastened; main ceiling to be scarphed from the turn of the bilge to the main deck beams, and edge bolted in each frame space. No scarphs allowed on the same frame without at least 3 strakes between. Beams at the hatches to be moulded 12 in. and sided 14 in.; sided 12 in. and crowned 6 in. Chocks to be fitted between deck beams, securely fastened to frames, leaving proper air space, and beams to be spaced 36 in. center to center. There is to be one 12 x 14

in. beam in the lower hold, placed directly over every other main deck beam; these, however, to be omitted in the way of machinery, and compensating fore and aft members added. There are to be 3 sets of pointers at each end of vessel, to be sided 12 in. and moulded 10 in. at top and at least 14 in. at bottom, and run diagonally from the center of deadwoods, aprons, etc., well up to the upper deck beams. These pointers to be connected at the lower ends across the deadwood with fir knees 12 in. thick and at least 4 ft. arms. There are to be stanchions 12 x 12 in. under every beam and under the hatch corners, and at each side of the stanchion heads there is to be a 5 x 10 in. plate; chocks to be fitted between the stanchions on top of rider keelson, and top of stanchion to have hardwood cap; rods 1½ in. upset to 2 in. turnbuckle to be placed between the beams, with ¾ x 6 in. plate washer on the outer ends let into the frame. The rudder stock to be in one piece of iron bark, 18 in. diar., the balance of the rudder to be fir. The bulkheads, as may be required in peaks and forward and aft machinery spaces, to be of two thicknesses of 3 x 6 in. tongued and grooved stock, finished down to about 2¼ x 5½ in. face laid diagonally in opposite directions, and canvas laid in white lead paint to be laid between the two thicknesses. Beams so arranged that one m.d. and one t.d. beam are secured to face of bulkhead.

The 2 masts and 6 cargo booms are to be of Oregon pine, of suitable diameter and strength for handling cargo equal to about a 3 ton lift. The general accommodation and quarters, include wheel house and chart room, berths, mess rooms, pantry, galley, store rooms and ice house, lavatories, etc. Each vessel is to be equipped with two lifeboats 20 x 6 x 2½ ft., with swinging davits. All anchors to be of the stockless type.

The propelling machinery to consist of 2 vertical inverted direct acting compound surface condensing engines, with cylinders 12 x 24 in. diar. by about 16 in. stroke, turning outboard when going

ahead, capable of developing 275 i.h.p. with no live steam in the receivers, at not more than 175 r.p.m. Steam is to be supplied by either one return tube, 3 furnace, single ended Scotch boiler, with a total heating surface of 1,800 sq. ft., or one water tube boiler with heating surface of not less than 2,000 sq. ft. The propellers are to be solid, 3 bladed cast iron. There is to be one main condenser independent of the main engine, one main circulating pump of centrifugal pump with 6 in. suction and discharge; main air pump, vertical single acting beam type, 7½ x 14 x 10 in.; 2 main and auxiliary feed pumps of vertical simplex type, 7½ x 4 x 10 in.; general service pump, horizontal duplex type, 7½ x 4½ x 10 in.; fire, bilge and general service pump, horizontal duplex type, 7½ x 4½ x 10 in.; sanitary pump, 5¼ x 4¾ x 5 in., and evaporator feed pump or centrifugal pump with 6 in. suction ejector is to be provided, operated by water from fire, bilge and general service pump. Feed water heater of approved type to be of sufficient capacity to heat 12,000 lb. feed water an hour from 80 to 212 deg., using exhaust steam at 5 lb. a sq. in. Feed and filter tank of 325 gal. to be placed in convenient location in the engine room.

The deck machinery is to include a spur geared windlass with horizontal engine and 2 gypsy heads aft, 12 in. diar.; vertical steam winches; steam and hand steering gear of approved type with about 6 x 6 in. double cylinder engine; steam capstan with engine in the base. The electric lighting system to consist of 10 k.w. marine type generating set, driven by vertical self oiling engine of approved make for 150 lb. steam pressure; dynamo to be compound wound of the multipolar type. There are also to be provided, mechanical telegraphs, water tanks, donkey boiler, etc.

When completed, the vessels are to have endurance trials, under conditions and with results satisfactory to the owners. The propelling machinery and auxiliaries are to be designed for a speed of 9½ knots under light load.

## The Deputy Minister of Marine's Report on Shipbuilding, Etc.

The Deputy Minister of Marine, Alex. Johnston, in his report to the minister for the year ended Mar. 31, 1918, issued recently, says that "the question of supreme moment, not only in the shipbuilding world, but in the world at large, is the relation of shipbuilding to ship sinking, for on this may hinge the issue of the war." Considerable space is devoted to weekly particulars of British sinkings, sailings and arrivals, from April 1, 1917, to April 1, 1918, the totals being as follows:—

Sinkings over 1,600 tons.....	896
Sinkings under 1,600 tons.....	334
Sailings and arrivals.....	289,127

The total number of ships sailing to and from British ports during the fiscal year 1917-1918, exclusive of fishing vessels, was, as above stated, 289,127, and the total losses due to war causes were 2,230, or 1.425%.

Details are given of the losses and building of allied and neutral shipping from Aug., 1914, to June 1, 1918, but as these are, of course, now out of date, it would not be of interest to reproduce them. Following are extracts from the report:—

**Canada and Sea Transport.**—Prior to the war, and for sometime after, there

were 10 large ship companies operating between Canadian and British and continental ports; owing, however, to the increasing toll of British, Allied and neutral shipping taken by mine and submarine and the shortage resulting, the demand for ships grew more insistent, and a number of vessels were taken from the Canadian and transferred to the Mediterranean and other routes wherever the need was most pressing; so that the conditions facing Canada today are, that whereas a few years ago there were 10 companies operating at full capacity between Canadian and British and foreign ports, there are now only about half that number, with less than half the previous number of ships, operating intermittently.

In the reconstruction period after the war there will be an increased demand for Canadian raw material and foodstuffs, and very possibly for manufactured articles as well, Canada being now a very much better known and more widely advertised country, and as British shipping to this country has been cut down by half and is not likely to be re-established for some years, owing to the lack of shipping everywhere and the need of shipping on all routes, it is apparent that if Canada is to have the required transportation,

she must acquire the necessary ships.

### Government Shipbuilding Programme.

—There are three ways of establishing a merchant marine: by purchase outright, by placing orders with foreign shipyards for delivery at a stated time, or by building in home shipyards. Australia during the first years of the war, feeling the pinch of lack of transport, bought 16 cargo steamships, which not only relieved the congestion of her own export trade, but were of service in the general carrying trade of the Empire.

The great advantage of outright purchase is that the earning power of the ships, and payment of dividends on their outlay, begin at once; the deadweight price of freighters just now for immediate or prompt delivery is abnormally high, about \$200 a ton, and indeed it is doubtful if any considerable number could now be obtainable at that or almost any price, as shipyards all over the world, including the Japanese, are being worked to their full capacity to supply ships for their own merchant marine, in anticipation of the tremendous demands that will be made on ocean tonnage in the period following the war. Taking these factors into account, the Canadian Government has decided to build annually 200,000 tons



of merchant shipping at an estimated cost of between \$40,000,000 and \$50,000,000. The annual output of 200,000 tons contemplated is only the beginning of the Canadian merchant marine fleet, and the probability is that in 1919 or thereabouts the government project will be considerably extended. The ships will be at the disposal of the British Admiralty during the war period, and at its close will revert to Canada to be operated either by the government itself or by Canadian shipowners under charter from the government. (Editorial note.—Since the report was written it has been decided that the vessels will be operated by the Canadian National Railways.)

**Merits of Plan.**—There are a number of advantages accruing from the plan adopted by the government for the building of a merchant fleet. In the first place the cost per ton deadweight will be less than if the contracts were given to foreign yards for prompt delivery. The money involved, instead of going out of, will be spent in the country in aiding an industry the growth of which is important to the future welfare and development of Canadian trade and commerce. It will be the means of providing, when its scope is extended, for a number of munition workers who will be thrown out of employment after the war, particularly if rolling mills on a more or less extended scale are started in connection with the Canadian shipbuilding industry; and finally, it will mean the augmenting of a class of men invaluable to any country—the merchant mariners.

In order to hasten the construction of the vessels, it was deemed advisable to utilize to the utmost the present Canadian yards, and to work at full pressure, rather than to multiply the number of shipyards, some of which would in all probability be undermanned for some time owing to lack of skilled workmen.

**Standardizing the Ships.**—Three principal types of vessels will be built under the government plan. The first type will consist of vessels of about 3,750 tons d.w. capacity, length over all 260 ft., speed 9 knots; these vessels will be of the tramp type, and will be built principally in the Great Lakes shipyards, to avoid difficulty with canal locks. An intermediate type will include ships of 4,300 tons deadweight capacity, length b.p. 320 ft., speed 12 knots. The second type will comprise vessels of 5,000 to 7,000 tons d.w., cargo liners, length over all 331 ft., speed 11½ knots. The third will consist of combination liners, as provision will be made for carrying passengers as well as cargo; they will be of 8,000 to 10,000 tons d.w. capacity, length over all 400 ft., speed 12 knots.

These ships will be all built to a standard set of plans and specifications prepared for each type by the department's Chief Naval Constructor and his staff to ensure uniformity and speed in construction, and the work of supervising the vessels while actually under construction in the different Canadian shipyards will also be undertaken by this body.

It is found by actual experience that the cargo vessel which gives the best return on outlay is one ranging between 7,000 and 10,000 tons d.w. capacity; below 7,000 tons and over 10,000 the ratio of wage-earning capacity to the cost of building is not so favorable. This last type will fulfil this very essential condition, and will be the one which will perform the bulk of the work of Canadian sea transport.

**Personnel.**—The work of providing

suitable crews for the new Canadian merchant marine fleet will be of the first importance. The Marine Department issues all certificates for masters, mates, and engineers of sea going vessels, and is keeping an exact monthly register of all the men who are qualified for these positions, and of their whereabouts in order that their services may be requisitioned when required. Every encouragement is also being given to seamen to induce them to attend the navigation schools at Halifax, Yarmouth, St. John, N.B., Kingston, North Sydney, and Vancouver, to take courses in navigation before qualifying for their certificates. The Canadian Naval League is aiding in the formation of naval brigades for the training of the young, and is carrying on an educational campaign emphasizing the importance to Canada of the building up of a merchant marine. It is important that the personnel of the officers and crews of Canadian merchant ships should be confined as far as possible to Canadians, failing these to British or Americans, to ensure a common language. The employment of alien crews should be avoided at all costs.

The principal shipyards for the building of steel cargo vessels in Canada are as follows:—

	Berths
British American Shipbuilding Co., Welland, Ont.; shipyard only.....	3
Canadian Vickers, Ltd., Montreal; shipyard, engine and boiler shops and floating dock...	5
Canadian Allis Chalmers, Ltd., Bridgeburg, Ont.; shipyard, engine and boiler shops....	3
Collingwood Shipbuilding Co., Collingwood, Ont.; shipyard, engine and boiler shops....	4
Davie Shipbuilding & Repairing Co., Lauzon, Que.; shipyard and drydock.....	4
Midland Shipbuilding Co., Midland, Ont.; shipyard only .....	2
Nova Scotia Steel & Coal Co., New Glasgow, N.S.; shipyard only.....	2
Polson Iron Works, Ltd.; shipyard, engine and boiler shops .....	4
Port Arthur Shipbuilding Co., Port Arthur, Ont.; shipyard, engine and boiler shops....	4
Thor Iron Works, Ltd., Toronto; shipyard only	5
Tidewater Shipbuilders, Ltd., Three Rivers, Que.; shipyard only.....	2
Wallace Shipyards, Ltd., Vancouver, B.C.; shipyard, engine and boiler shops.....	3
	45

**Canadian Shipbuilding Disabilities.**—In last year's report allusion was made to certain drawbacks attending the initial stages of Canadian shipbuilding; there is no reason why these should not be overcome in the course of a few years, with the exception of that of the climate, which in certain localities will not permit the launching of ships at all seasons. At present the greatest obstacle to the rapid and cheap production of steel ships in Canada is the lack of rolling mills capable of making steel plates and structural steel shapes for the larger cargo ships, in quantity; all the other parts of the ships, including the engines, can be made in Canada, but in order to carry its programme of building merchant ships to a successful completion, it was necessary for the government to enter into negotiations with United States firms for the supply of the needed plates and shapes; although the Americans at present are very much occupied with their own shipbuilding problems, these negotiations have fortunately been successful, and the necessary supplies for the Canadian merchant fleet have been assured. It will, however, be of great advantage to the industry if, after the war, every effort is made to establish rolling mills on an extensive scale in suitable localities, in order that all the demands made on Canadian shipbuilding may be met by Canadian firms.

**Insurance Rates and the St. Lawrence**

**Route.**—The formation of a Canadian merchant marine brings into greater prominence the question of the restrictions placed on the trade of this route by insurance underwriters, as compared with Atlantic port routes; restrictions which, in the opinion of a number of men qualified to judge, are somewhat unfair. This high rate of insurance means an additional overhead charge on all vessels using this route. The discrimination against the St. Lawrence route has been carried out despite the constant work of improvement done in the widening and deepening, and the lighting and buoying of the ship channel between Montreal and Father Point. The expenditure on this work has exceeded \$1,000,000 annually for the last three years, and the total cost of the channel since its inception in 1851 to the end of the fiscal year 1917 has been \$21,520,371.

From Montreal to Quebec is 160 statute miles, and from Quebec to Father Point 181, and it is doubtful if any other waterway in the world of equal extent is more thoroughly safeguarded. In the department's report for 1916-17, the Superintendent Engineer of the St. Lawrence ship channel drew attention to a communication received from Henry Fry & Co., Lloyds agents at Quebec, emphasizing the fact that no accident had occurred to any sea-going vessel between Father Point and Quebec in the course of the year, and he attributes this not only to the improved lighting and buoying of the channel, but also to the increased efficiency of the Pilotage Service. If the continued improvement and additional safety of this route from year to year have not the desired effect of inducing Lloyds to lower the insurance rates for vessels trading on it, it may be necessary, in the interests of Canadian shipping, for the government itself to take some steps to equalize the difference between the rates to Quebec and Montreal and those to the Atlantic ports.

**British Merchant Vessel Losses.**—It was announced in the British House of Commons, Nov. 6, that 8,946,000 tons of British merchant ships had been lost during the war, to Sept. 30, through enemy action. Of this tonnage, 5,443,000 tons had been replaced by new construction, by the purchase of vessels abroad, and by utilizing captured enemy vessels. The output of tonnage throughout the world for three months ended Sept. 30, exceeded the losses from all causes during the same period, by nearly 500,000 gross tons. During this period, the United Kingdom's new construction was 411,395 tons, and that for allied and neutral countries, 972,735 tons. For October, the tonnage of merchant vessels completed in the United Kingdom, and entered into service, was 136,100 tons.

**The St. John Dry Dock & Shipbuilding Co.**, the general contractor for the harbor improvements being carried out in Courtenay Bay, St. John, N.B., advises that work has been commenced on the 2,500 ft. breakwater extension, by placing the rock excavated from the dry dock site. This will be continued for about two years, and the construction of the dry dock will be commenced in about 18 months, when sufficient progress has been made with the excavation. Dredging will not be started until next year. The subcontractor on this work is the Bedford Construction Co., and the engineer in charge for the contractors is E. G. Cameron, formerly engineer in charge of sec. 3, Welland Ship Canal, for the Railways and Canals Department.



## The Halifax Drydock's Expropriation Criticised by the Halifax Graving Dock Company's Chairman.

S. M. Brookfield, Chairman, Halifax Graving Dock Co., Ltd., Halifax, N.S., wrote Canadian Railway and Marine World, Nov. 6, as follows:—"Your August issue, which I have only just seen, contains an article upon the expropriation of the Halifax drydock and the establishment of a shipbuilding plant, which is not only misleading, but contains statements which are at variance with the truth. If this confiscation can be legalized, it will be a disgrace and a blot upon the escutcheon of Canada forever.

"The Minister of Public Works is reported as saying he had informed the Privy Council on May 24, 1918, that the drydock was badly damaged and practically destroyed. He mentions the importance of the dock, and says an agreement was entered into whereby the dock company was to furnish \$111,000 of insurance and the Dominion Government was to reconstruct the dock. He also says, at this late date, that the progress made by the drydock company had not been satisfactory and from reliable information he valued the dock at \$1,100,000, and recommended that this offer be made to the company. Then on June 4 he reported to the Privy Council that, according to the order in council of May 27, the drydock had been expropriated, and recommended that it be leased to the Halifax Shipyards, Ltd., for one year for \$62,500, that company to have an option on the property for one year at \$1,250,000. The article further states that after the dock was wrecked by the explosion on Dec. 6, 1917, the Public Works Department, under its superintendence, took over the work of reconstructing it, but as soon as arrangements were made to expropriate the property it discontinued the work.

"You will note the Minister says we did not make sufficient progress, and the article states that the work was done by the Public Works Department. The explosion was a terrible calamity for us, chiefly on account of the loss of life, which was irreparable, and was quite sufficient to knock us all down for a time; in fact, some of the men have not yet recovered. However, we could not forget that the war was on, and that transports, the hire of each amounting to several thousand dollars a day, were waiting for repairs, and to have guns mounted upon them. We did not ask any government assistance, but lost no time in getting our Dartmouth shop in commission for work, and started the dock two days after the explosion, working continuously night and day and Sundays, putting up temporary buildings, installing boilers and pumps, building flues, chimneys, etc., so that we were able to begin repairs to the ship in the dock on Jan. 11. Considering our difficulties and the weather we had to contend with, it was something to do.

"You will notice that the Minister reported to the Privy Council on May 24—169 days after the explosion—that we did not make sufficient progress. Surely if he had the slightest fault to find with us, it was up to him to state it long before that date. I now call upon him to publish wherein we failed to make progress, because it is not true, and until refuted or proved it is a reflection upon our management. We can easily prove that every energy was made to get the dock and plant ready; in fact, before the explosion we had ordered extra machinery to ex-

pedite transport work, never thinking for a moment that it would be for the benefit of other people who had never put one dollar into the company and who had done nothing for the benefit of our port. We had great difficulty in getting this machinery, but succeeded.

"On Dec. 29 the Minister agreed to reinstate the dock, which would add \$400,000 to \$500,000 to its value to the company. It was a national loss, so why should not the Government reinstate it, especially as the Government was reinstating our citizens who had suffered by the explosion. We were to give the Government the benefit of our insurance. On Feb. 8, the Deputy Minister and two men from the department came and told us how they wanted the accounts kept. Bills were to be rendered monthly, but up to date, 11 months, the Minister has declined to authorize payment of one cent expended on account of the contract he made with us to reinstate the dock, which has cost us approximately \$185,000, so his agreement is simply a 'scrap of paper.' We then asked for a payment of account of the purchase price of the dock, but this also was declined, on account of the title not having been reported upon. We have had the property for over 33 years, and the title was not sufficiently good for the government to pay an installment upon, but was quite good enough to hand over to another company to continue our business.

"In order to improve the dock and its plant we employed the best engineers we knew, consulted them as to electrifying our plant and followed their recommendations. In connection with this account, which we call 'improvement,' we have spent over \$35,000 in equipment, which the new company has installed. On Sept. 25, we wrote the Halifax Shipyards, Ltd., asking it to pay this account, but so far we have received nothing but an acknowledgment of our letter. So you see that the drydock property which has been taken away from us is being operated with our machinery.

"Our dock was the pioneer dock in Canada, and look what a benefit it has been to the nation, especially since the war. We went through hard times, but some time ago we turned the corner and it was paying well. It certainly was not the time for the Government to deprive us of it. The Minister states the rental is to be \$62,500 (about half of what it should have been), which is 5% upon \$1,250,000, and  $\frac{1}{2}\%$  less than the government is paying for money today. Upon this valuation the dock would easily pay 30%. On May 18 in Ottawa the Minister offered us \$1,250,000, and the same offer was made on June 12 when he was in Halifax, but we refused it. He now offers us \$1,100,000, which, less our expenditure of \$220,000, would only net us \$880,000, which is simply absurd, as it is not more than sufficient to buy the real estate, build the shops and furnish the plant today, leaving the dock itself entirely out of the question.

"No Canadian came forward to put one dollar into this undertaking, but when they find out it is a paying venture, having an up to date shipbuilding plant and a profitable business, they do not hesitate to ask the Government to expropriate it under the guise of a shipbuilding scheme, which saves them asking for provincial

and city subsidies which they might not have been able to obtain. The last offer our shipbuilding committee had was in July, 1917, from an English company, which wanted \$400,000 from the province of Nova Scotia, \$200,000 from Halifax, and \$200,000 from Dartmouth. St. John, N.B., is asking \$500,000, so anyone can see the value of the Halifax drydock to the new company, and yet the Minister of Marine is reported as saying that the Halifax Shipyards, Ltd., is getting no financial assistance from the government.

"There is no precedent for such a high handed act, that is, for a minister of the crown to commandeer a property and business, and lease it to another company for one year, with the option of purchasing it at his fixed price any time within that period. It may be German practice, but certainly not the English method of doing things. Compare what we did with what the government accomplished, as regards erecting buildings after the explosion and getting the dock ready. We took the west side of the dock, where practically the work is, and proceeded to erect temporary pumps, boilers, roof over pump house and boiler house, iron stack for chimney, large ironworkers' shop, offices and stores, as well as repairing flues and putting the plant in order, all of which was done in two months. The government undertook the do the east side. One month was lost waiting for the Railways Department and the Public Works Department to decide which was to do this work, which delay was a serious matter to us. On Feb. 11 the government undertook the building of the wharf and the erection of the large emergency shop. It made such slow headway that I repeatedly wired Ottawa to see if it would expedite the work. Finally, when its representative would not carry out the plans, I was obliged to call in an architect and two surveyors, who met the resident government engineer, with the result that all the work done by the department was condemned. I wired Ottawa and it sent the Assistant Deputy Minister and government engineer down, and they also condemned the work, and on May 23, three and a half months afterwards, the wharf was not ready to take a vessel, whereas, if the government had not interfered with us, we would have had it ready for transports on April 10. Consequently we were obliged to repair transports in the harbor and basin, using motor boats, which was a delay to the transports and a great loss to us, so you will see that although the government stated this was important work it gave it no attention and utterly failed to be of any assistance to us whatever; so it must invent some other excuse for taking away our property. The wharf has since settled and the only building put up by the government has been taken down, and yet the minister complains of our lack of progress.

"A further reason advanced by the Government for taking the dock away is that it is a war measure. This excuse will not stand either, as the Halifax Shipyards, Ltd., is doing no more work than we did, although we have provided it with machinery, which we had ordered before the explosion, in order to expedite transport work. This shows that there was no delay on our part to meet emergencies. We had a large stock of plates, angles, etc.,



so that we were able to repair any ship expeditiously, and we had no complaints; on the contrary, the Admiralty gave us great praise for the expeditious manner in which we got the dock and plant ready to do repair work. The building of a few ships in the future will not affect the war in the slightest degree. The war will be over long before the keels are laid, and yet our company, of over 30 years standing, is to be sacrificed, to take the place of large cash subsidies for starting ship-building, and given to Montreal men.

"The dock received from the Dominion Government only \$10,000 a year subsidy for 20 years, a total of \$200,000. St. John, N.B., is to receive \$247,500 a year for 35 years, or \$8,662,520. Our dock is a fine one, cut out of the solid rock, and can compare with any dock, but the subsidy given us will not compare in any particular with the largely increased subsidies now given by the government.

"As regards shipbuilding, our citizens have all looked forward for years with the idea that the government would do something in the way of a policy to have this industry located here. At the request of the mayor, I went to England to see what I could do in the way of getting a large firm to locate here. A representative from one of the largest firms in Britain came here and selected the site. The citizens paid for it and it is standing idle today.

"When the government stopped the reinstatement of the dock, on account of some difficulty I would like the Minister of Public Works to explain, I went to Ottawa with one of our directors from London. We saw the minister, and he informed us that the government was going to expropriate the dock. We asked him to kindly tell us what it was going to do with it, as we thought our company should know. He declined to inform us. Had he been frank, and told us the government was framing a policy for building ships, and would give \$190 a ton and supply plates from a subsidized mill at a low rate, I think he need not have gone out of Halifax for the capital. Our men are away from their homes, fighting for fair play and for the protection of small nations, and yet our patriotic government is treating this progressive English company according to the doctrine of might being right, which has been the German practice. Surely our citizens will be interested in seeing that a precedent of this kind is not made; otherwise private property would never be safe if speculators wanted it. This matter will probably go to England, where contracts are held sacred and where justice will be dispensed."

The P. Q. Towing Co., Ltd., has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital and office at Dalhousie, N.B., to carry on a general towing, wrecking and salvage business, and to own and operate G. C. Scott, Boston, Mass.; C. J. Paine, steam and other vessels, ferry boats, etc. Weston, Mass.; F. Rackemann, Milton, Mass.; P. R. Hussey, Dalhousie, N.B., and F. J. Allard, Carleton, Que., are the incorporators.

The St. John Steamship Co., Ltd., the incorporation of which, with office at St. John, N.B., was mentioned in our last issue, is having a wooden steamship built at Yarmouth, N.S., by W. D. Sweeny, for service between St. John and Bay of Fundy ports. The company intends to put other steamships in this service as the business develops. A. L. Fowler, President, Fowler Milling Co., Ltd., St. John West, N.B., is Secretary-Treasurer.

## St. Lawrence River Navigation and Power Development.

Ottawa press dispatch, Nov. 14:—With the return to a peace basis, the Dominion Government will, it is said, take up the question of joint development with the U.S. of St. Lawrence water powers. A large scheme has been tentatively submitted in its broad outlines. While regarding increased navigation facilities as paramount in the St. Lawrence, the scheme, it is estimated, would result in the development of enormous additional water power. Surplus power generated under the scheme, and not needed in Canada, it is suggested, could be exported to the U.S. under treaty arrangements which would permit of its return when required on this side of the international boundary. One phase of the scheme would entail the practical abandonment of the present canal system of the St. Lawrence, as the result of the creation of a deeper waterway by means of dams.

International development of St. Lawrence waterpowers was urged on the U.S. Government when the application of the St. Lawrence Power Co. was before the International Waterways Commission. It was represented to Washington that the endeavor should be to design at the outset a complete scheme into which successive developments might be fitted from time to time, when occasion might demand. But in such a scheme, it was pointed out, there always was present the great danger that the ultimate possibilities of St. Lawrence navigation might be neglected or irreparably injured. "On the other hand," reads an order in council passed at the time, "it is certain that the subordinate and incidental, but important, use of these international boundary waters for power purposes can never be rendered as efficient and productive through a policy of simply permitting a haphazard series of unrelated private enterprises as through a carefully considered and comprehensive scheme of development carried out under public auspices by the two countries, and obviously it is only by agreement and concerted action between the two countries that such development can be undertaken."

## Reconstructed U.S. Ships Being Finished in Canada

Seven of the 12 vessels under reconstruction on the Great Lakes for the United States Shipping Board, have been sent to Montreal to be rejoined for coast-wise service. They were cut in two for passage through the Welland Canal locks. Work on the remaining 5 vessels in the Great Lakes yards is being rushed, and they will be taken to Montreal before the St. Lawrence River freezes. Men have been sent to Montreal, from the lakes, for work on vessels to be rejoined.

About 3,500,000 rivets were driven in the vessels under reconstruction on the lakes, and there was keen competition between the different yards in rivet work. The reconstructed vessels are practically new throughout, the hull being the only part of the original ship. When the vessels are rejoined and completed at Montreal, they are turned over to the U.S. Navy by the Shipping Board. The Navy then takes the vessels to the Atlantic Coast, where they are put into service.

**Swedish Steamship Confiscated.**—Judgment was delivered in the Admiralty Court at Halifax, N.S., Nov. 22, against the Swedish s.s. Svithold, which was seized in the early days of the war and taken to Halifax. The judgment confiscated the vessel and her cargo of rubber, and it was held that the master of the vessel acted in collusion with people in Pernambuco, in attempting to smuggle the third officer of a German inland steamship to Germany, that he lied when he protested that he was unaware he had the man on board, and that this alone was justification for the confiscation of the vessel and cargo. Permission to appeal to the Imperial Privy Council has been asked.

Halifax Shipyards, Ltd., has increased its authorized capital from \$6,000,000 to \$10,000,000, and the number of its directors from seven to nine, the additional two being selected by the present board from among the qualified shareholders, for the balance of the term of the existing board.

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie canals during October, 1918.

Eastbound.		Can. Canal.	U. S. Canal.	Total.
ARTICLES.				
Lumber . . . . .	m. ft. b. m.	580	30,101	30,681
Flour . . . . .	Barrels	224,390	847,940	1,072,330
Wheat . . . . .	Bushels	13,205,291	15,943,689	29,148,980
Grain, other than wheat . . . . .	Bushels	1,121,931	3,157,985	4,279,916
Copper . . . . .	Short tons	913	8,385	9,298
Iron Ore . . . . .	Short tons	1,675,217	6,753,426	8,428,643
Pig Iron . . . . .	Short tons	.....	.....	.....
Stone . . . . .	Short tons	750	.....	750
General Merchandise . . . . .	Short tons	2,558	6,208	8,766
Passengers . . . . .	Number	212	31	243
Westbound.				
Coal, soft . . . . .	Short tons	105,650	3,087,728	3,193,378
Coal, hard . . . . .	Short tons	.....	403,510	403,510
Iron Ore . . . . .	Short tons	.....	30,898	30,898
Mfgd. Iron and Steel . . . . .	Short tons	293	1,352	5,762
Salt . . . . .	Short tons	3,200	2,562	5,762
Oil . . . . .	Short tons	.....	53,412	53,412
Stone . . . . .	Short tons	.....	32,033	32,033
General Merchandise . . . . .	Short tons	21,023	31,321	52,344
Passengers . . . . .	Number	222	10	232
Summary.				
Vessel passages . . . . .	Number	737	2,271	3,008
Registered tonnage . . . . .	Net	1,512,967	7,327,899	8,840,866
Freight—				
Eastbound . . . . .	Short tons	2,127,867	7,462,438	9,590,305
Westbound . . . . .	Short tons	130,166	3,642,816	3,772,982
Total Freight . . . . .	Short tons	2,258,033	11,105,254	13,363,287



## Loss of Auxiliary Powered Schooner Dornfontein.

Judgment was delivered recently, following an investigation into the loss of the auxiliary powered schooner Dornfontein off Brier Island, Bay of Fundy, Aug. 2. The enquiry was held at St. John, N.B., by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. A. J. Mulcahy and Jas. Hayes, nautical assessors.

The master, Capt. C. E. Dagwell, testified that he left St. John, N.B., July 26, with a crew of mixed nationalities, Norwegian, Swedish, Danish and Russian Finn, and with a cargo of lumber for Durban, South Africa. He had received clearance from the customs, and secret instructions from the transport officer, the day before. He did not know any of the crew and had no reason to suspect anyone on board. After anchoring off Partridge Island, for the adjustment of compasses, etc., he again sailed, July 31, but the flood tide carried him back, and on Aug. 2 he was off Brier Island, steering west. On that day, the man at the wheel reported a vessel to the south, but he could not make her out after scanning her with the glass. He knew that there were submarines in the vicinity, but kept on his course. He kept looking at the vessel, but she did not appear to be coming any closer. He had seen submarines before, but could not detect anything strange about the construction of the vessel in sight. He looked occasionally until dinner time, when the vessel had been in sight about an hour and still approaching, and at noon he did not detect anything suspicious, but while at dinner a shot was fired. He then knew that there was a submarine and came on deck and ordered the helm up. Another shot was fired and a piece of shell pierced the spanker. His vessel was then hove up, and signals were hoisted on the submarine, which came up fast after the first shot was fired. After the boats were lowered he went below to get the papers which were in a tin box. The letter of instructions had not been opened. He had all his papers in his pocket when clearing at St. John, also his certificate, later placing everything in the box, except his certificate. He did not remember that instructions were given to him to destroy the secret orders in case of meeting with the enemy. He later saw the papers in the hands of the commander of the submarine. About four hours later, the schooner was in flames. He noticed that the submarine had two guns, but did not notice any other matters. The crew were very decent with him. The Dornfontein was burning when they left the submarine to row ashore, where they landed the following morning. There was no special lookout kept on his vessel. He kept his certificate in his pocket, not as a matter of precaution, but merely because he forgot to take it out. This was his second vessel lost through enemy action. He knew the papers given him by the naval authorities were to be destroyed, but he forgot to do so. He had conferred with the transport officer and had read the document in his office, but did not remember signing it. This was later disproved by the production of a copy duly signed by the master and acknowledged by him. When his other vessel, the Sunlight, was torpedoed, he saved his certificate, all other papers being lost.

The mate, C. Olsen, a Dane, stated he had been three years in Canada, and held a Danish certificate, and in general, cor-

roborated the master's evidence.

The judgment was as follows:—The court finds in the master's evidence some contradiction with respect to his knowledge of the contents of the documents containing the sailing orders, he saying at one time that he was not aware that his instructions were to destroy such instructions upon the appearance of an enemy ship, or when capture was imminent, and his subsequent admission of having read such instructions, and signed the form upon which they were printed and written, the original being before the court; thereby giving the impression that he considered those papers of secondary importance. He had placed these instructions in a box which held other ship's papers, but retained in his pocket his certificate, for which, after clearing at St. John, he had no further use until he again reached a British port. His plea is that his certificate was forgotten in his pocket, while he locked away in a box the document of great importance, which the court assumes he was obliged to consult frequently. However, on his own admission, he did not remember what those instructions were, therefore showing that he made light of his duties to his country and his flag, and of his responsibility to his owners, by handing over his orders to the enemy, although he claims that he was cool and collected. An interval of five minutes elapsed from the time he obeyed the submarine's signals to bring his papers, and rowing away from the ship's side. In military and naval circles, during war time, such neglect would bring upon the individual the odium of disloyalty, with a possible verdict advising capital punishment. In civil life, since war has begun, many persons have received long terms of imprisonment, with heavy fines, for utterances made on the spur of the moment, and which did not carry with them the importance of this unheard of neglect, to follow and execute such peremptory orders as Capt. Dagwell had received. He had been torpedoed before, he had heard that submarines were frequenting, and had created havoc, on the coast, and yet in the face of his former experience, and his knowledge of existing conditions, that danger was lurking in the western Atlantic, where many victims had already been sacrificed, he did not even give special orders to his officers or crew to be vigilant in keeping extraordinary lookout. An object was seen by him at 11 a.m. on Aug. 2. With the glasses he watched the object, but could not define it. It was still in sight at noon. He nevertheless went to his lunch, and according to the mate's evidence, did not whilst both were at table, mention what he had seen. A shot was fired which drew his attention, on the hearing of which he came on deck. A second shot was fired, at an interval of a couple of minutes, and yet on hearing and seeing this second shot, no thought was given to the secret orders he possessed. Before the second shot was fired he had ordered the helm up, with the intention of running away; but brought his ship to the wind when the second shot struck the water a few yards from him.

The court is of opinion that the master had ample time to reflect, and to destroy the document had he attached any importance to it, and the only conclusion which can be arrived at is, that he was gravely negligent; but not with criminal intent. Whilst it has been ascertained

that the crew was of mixed nationalities and that two of its members spoke German, the court has failed to connect this disaster with any preconceived, prearranged signals, or notification to the enemy. In view of the fact that no evidence has been obtained pointing to criminal intent on the part of the master, or his crew; but finding only a total disregard of the importance of his instructions, the court feels that in this instance a suspension of certificate will be a fit punishment to meet this neglect. Therefore, it suspends Capt. Charles Ephraim Dagwell, Board of Trade Certificate 99236, for the duration of the war, until such a time when ships will be permitted to sail from any port or ports without special admiralty or governmental restrictions, other than those which regulate the departure of ships in normal times, and trusts that this finding will prove a deterrent to such masters in whose minds may lurk an idea that orders and instructions, issued by established authority, are of no, or little, importance, and that the non fulfillment of such orders cannot be overlooked with impunity.

## Navigation Aids on the Great Lakes and St. Lawrence River.

All Canadian lights and fog alarms on Lake Superior will be kept in operation this autumn until the close of navigation, with the exception of Caribou Island, Quebec harbor, Davieaux Island and Michipicoten Island east end, which will be closed Dec. 15, and with the exception of Gargantua, Michipicoten harbor, Corbeil Point and Ile Parisienne, which will be closed Dec. 20; also Slate Island, Battle Island, Lamb Island, Shaganash, Point Porphyry, Thunder Cape, Welcome Island, Pie Island and Victoria Island, which will be closed after the last sailing to or from Port Arthur and Fort William.

All Canadian lights and fog alarms on Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie, Lake Ontario and connecting waters, will be maintained in operation until the close of navigation, excepting the Southeast Shoal lightship, Lake Erie, which may be removed after Dec. 1, and also Lonely Island light, Georgian Bay, which may be closed before the general close of navigation.

All Canadian lights on the River St. Lawrence will be maintained in operation until the close of navigation. All gas buoys and other floating aids to navigation will be maintained in position as long as ice conditions will permit, and in cases where it is necessary to remove gas buoys before the close of navigation, the more important points will be marked by spars.

**Engines for War Time Vessels.**—The U.S. shipbuilding programme is being interfered with to some extent, owing to the fact that hulls have been launched rather faster than engines can be supplied for them. It is stated that about one-third of the hulls launched since the U.S. Shipping Board took hold of the situation in Aug., 1917, have not been completed owing to the non-delivery of the necessary engines. A similar condition arose in Canada in connection with the vessels being built for Great Britain under Imperial Munitions Board orders, and is one of the effects of an abnormal situation. In the U.S., naval demands on engine production have been dealt with first, and it is announced that with the general increase in production, recently launched vessels will be engined speedily.



## Wooden Shipbuilding in Canada for Foreign Countries.

Following is a complete list of licenses granted by the Dominion Marine Depart-

ment up to Nov. 16 for building wooden steamships for export:—

Date.	Builder.	Vessels.	D.W. Tons.	For
Mar. 14	British American Shipbuilding & Engineering Co., Vancouver, B.C.	20 steamships	3,000	Norway
June 3	LeClaire Shipbuilding Co., Sorel, Que.	4 aux. schooners	1,200	Norway
July 18	Three Rivers Shipyards, Ltd., Three Rivers, Que.	25 vessels	3,000	France
July 18	LeClaire Shipbuilding Co., Sorel, Que.	3 motor vessels	1,000	Norway
Sept. 6	LeClaire Shipbuilding Co., Sorel, Que.	2 aux. schooners	1,200	Norway
Sept. 12	Davie Shipbuilding & Repairing Co., Lauzon, Que.	12 steam barges	1,500	France
Sept. 12	Fraser, Brace & Co., Montreal.	8 steam barges	1,500	France
Sept. 12	New Westminster Engineering & Construction Co., New Westminster, B.C.	5 steam barges	1,500	France
Sept. 12	Wm. Lyall Shipbuilding Co., Vancouver, B.C.	8 steam barges	1,500	France
Sept. 12	Pacific Construction Co., Port Coquitlam, B.C.	2 steam barges	1,500	France
Sept. 12	Northern Construction Co., Vancouver, B.C.	5 steam barges	1,500	France
Sept. 12	National Shipbuilding Corporation, Three Rivers, Que.	10 steam barges	1,500	France
Oct. 12	Foundation Co., Victoria, B.C.	20 steamships	3,000	France
Oct. 12	Davie Shipbuilding & Repairing Co., Lauzon, Que.	1 steamship	1,500	Greece
Nov. 2	New Westminster Engineering & Construction Co., New Westminster, B.C.	3 steamships	3,200	Belgium
Nov. 2	Northern Construction Co., Vancouver, B.C.	4 steamships	3,200	Belgium
Nov. 2	Pacific Construction Co., Port Coquitlam, B.C.	3 steamships	3,200	Belgium
Total, 135 vessels; 313,700 tons d.w. capacity.				

### Increase in Express Rates in the United States.

The Interstate Commerce Commission, in its decision announced recently with reference to proposed increase in express rates, indicates that the plan proposed constitutes a justifiable method of dealing with the necessities of the situation unless the Director General of U. S. Railroads should reduce the percentage basis of compensation which the express company is to pay the Director General or unless he should make what is in effect a similar change in the contract by providing that only half of the proposed increase in rates shall be made and that the entire increase thus made shall inure to the benefit of the American Railroad Express Co. These alternatives had already been carefully considered by the Director General, and the conclusion was reached that neither alternative was justifiable in the circumstances.

The contract between the Director General and the express company provides that the company shall pay to the government for the express privileges accorded to it by the Director General 50.25% of the gross revenues from the express business. This percentage represents the average which has been paid for 10 years by the express companies to the railways, and it is fair to assume that this percentage represents what is required for the performance of that part of the total service which has been performed by railways in the past. Moreover, the heavy increases in operating costs on the railways have necessitated substantial increases in freight and passenger rates averaging probably 25% or more, and averaging in the case of many passenger rates as much as 50%. In such circumstances it is clearly unwise to make an actual reduction in the basis of the government's compensation for the express privileges accorded to the express company for services on passenger trains. By the preservation of the present established basis of compensation for the express privileges, the increase in revenue of the U. S. Railroad Adminis-

tration from the carrying of express business on passenger trains will be no greater than the increased revenue paid for transportation of passengers and their baggage, and such increase from the express business is just as appropriate and necessary as the increase from the passenger business.

Another consideration of first importance is that the relatively low rates for freight rates. The result of this undue transportation of express matter have had the effect of transferring to passenger trains the transportation, as express, of many article and commodities which ought normally to go by freight. This tendency has been accentuated by the substantial increases recently made in transfer of freight matter to passenger trains has been to congest and delay the passenger train service. The proposed increase in express rates will probably fall short of establishing a proper relation between express rates and freight rates, and certainly on this account no less increase in express rates than is proposed would be advisable.

The entire amount of this increase which will inure to the express company is to be used for making necessary increases in wages of express employees. The portion of the increase which will inure to the U.S. Railroad Administration will be no more than is needed to provide for heavy increases in operating cost fairly chargeable to the express business.

### Among the Express Companies.

P. H. Findlay has been appointed Agent, Dominion Ex. Co., Cobalt, Ont., vice A. F. Robertson, transferred.

A. F. Robertson, heretofore Agent, Dominion Ex. Co., Cobalt, Ont., has been appointed agent, Sault Ste. Marie, Ont., vice J. M. Boivin, resigned.

J. W. Proulx, heretofore in General Agent's office, Canadian Ex. Co., Montreal, has been appointed route agent, vice W. G. Everett, who was appointed agent at St. John, N.B., in June.

The U.S. Railroad Administration has

announced that the American Railway Ex. Co., under a new agreement, will receive 49% of all express operating revenue, the railways receiving the balance.

Edward Allen, Superintendent, Canadian Ex. Co., Toronto, whose death was announced in our last issue, left an estate of \$16,091, including \$5,000 insurance, which, with the residue of the estate, was left to his widow, the rest being divided equally between three daughters.

The Express Traffic Association of Canada, as representing the Canadian express companies, has applied to the Board of Railway Commissioners for permission to increase express rates by 25% over the present rates per 100 lb. for points west of Sudbury, Ont., and by 37% for points east thereof.

The litigation between the British Columbia Express Co., and the Grand Trunk Pacific Ry., in connection with the construction of certain bridges across the Fraser River by the latter, and which the express company claims interfere with its business, has been ended, with the decision of the judicial committee of the Imperial Privy Council, in favor of the G.T.P.R. This matter has been before the courts for over four years, the judgment in the original trial being against the B.C. Ex. Co.'s contentions. This was reversed on appeal, and a further appeal restored the original judgment, which has been upheld in the final judgment. The bridges in question are all across the Fraser River, one just below the junction of the Nechaco River, and one each at mileage 142 and 189 on the G.T.P.R.

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Independent Pneumatic Tool Co., Chicago, Ill.**, has issued circular 28 describing and illustrating the Thor pneumatic and electric tools in detail, with complete specifications.

**Independent Pneumatic Tool Co., Chicago.**—Roger C. Sullivan has been elected a director, chairman of the board, and also a member of the executive committee, to fill vacancies caused by the death of John P. Hopkins.

**Prest-O-Lite Co. of Canada, Ltd.**—The storage battery and compressed acetylene gas manufacturing business, carried on hitherto in Canada by Prest-O-Lite Co., Inc., has been transferred to Prest-O-Lite Co. of Canada, Ltd., which has been incorporated under Canadian law, with an authorized capital of \$800,000. The company's headquarters is in its own building, Elm St. and Centre Ave., Toronto, where its welding and cutting equipment is made and marketed. It has plants for manufacturing Prest-O-Lite compound acetylene at Shawinigan Falls, Que., Merriton, Ont., and St. Boniface, Man., and has an office and warehouse in Montreal and a sales office in Winnipeg. R. H. Combs, who has been with the Prest-O-Lite Co., Inc., since 1908, in various capacities, has been appointed Manager of the new Canadian company.



## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 305 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Railway War Board—W. M. Neal, Montreal.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.

## NEW RAILS FOR SALE FOR IMMEDIATE SHIPMENT

65 tons 7 in. x 70 lbs. T. Rails,  
27 tons 6 in. x 65 lbs. T. Rails, with  
two complete 6 in. switches, three  
diamond point sidings and one "Y,"  
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Marine World every issue of  
the year because you obtain  
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## THE KASLO AND SLOCAN RAILWAY COMPANY.

### Notice to Shareholders.

The annual general meeting of the shareholders of the Kaslo and Slocan Railway Company for the election of directors and for the transaction of other business connected with or incidental to the undertaking will be held at the head office of the company, in the City of Montreal, on Friday, the 27th day of December, A.D. 1918, at the hour of twelve o'clock noon.

### Special Meeting.

The meeting will be made special for the following purposes:

1. To consider and if deemed advisable to approve the terms and conditions of a proposed agreement to lease to the Canadian Pacific Railway Company, the railway and undertaking of the company.

2. To consider the advisability of empowering the directors to issue bonds for the purposes of the company, and if so decided to fix the amounts and terms thereof and to approve the form of mortgage, if any, to be given to secure the same.

Montreal, November 20, 1918.

GEORGE A. WALKER,  
Secretary.

## FOR SALE

# Locomotive

2-4-2 Type Saddle Tank Locomotive, built new 1916, by Canadian Locomotive Co., weight 40,000 lbs., good condition, spare set of tyres, reasonable price.

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15 ton, 8 wheel, M.C.B. Standard Steam Locomotive Crane, manufactured by Industrial Works, Bay City. Complete with generator and magnet, good condition, very reasonable price.

*Above may be inspected in operation.*

## Dominion Foundries & Steel

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## CANADIAN NORTHERN RAILWAY SYSTEM.

### Eastern Lines.

Sealed tenders addressed to the undersigned and endorsed, "Tenders for Concrete Piers, Quinte Division," will be received at this office until twelve o'clock noon, Saturday, December 14th, for the removal of the present substructure and the construction of seven concrete piers at the Trent River Crossing, Mileage 43.5 on the Maynooth Subdivision, being situated at Glen Ross, about thirteen miles north of Trenton, Ontario.

Drawings and form of contract may be seen and specification and forms of tender obtained at the office of the Engineer, Maintenance of Way, 68 King St. E., Toronto.

Tenders will not be considered unless made on the forms supplied by the railway company and in accordance with the conditions contained therein.

NOTE: Blue print copies of the drawings may be obtained at the office of the Engineer, Maintenance of Way, by depositing the accepted bank cheque for the sum of \$10.00, payable to the order of the Treasurer of the Canadian Northern Railway Company, the said cheque to be returned if the intending tenderer submits a regular tender.

The lowest or any tender not necessarily accepted.

A. F. STEWART,  
Chief Engineer,  
Eastern Lines.

Canadian Northern Railway,  
68 King St. E.,  
Toronto, Ont.

## CANADIAN NORTHERN RAILWAY SYSTEM.

### Eastern Lines.

Sealed tenders addressed to the undersigned and endorsed, "Tenders for Concrete Abutments, Pembroke Subdivision," will be received at this office until twelve o'clock noon, Saturday, December 14th, for the construction of two concrete abutments at the crossing of the Little Madawaska River at Mileage 147.4, Pembroke Subdivision, being situated approximately sixty-seven miles west of Pembroke, Ontario.

Drawings and form of contract may be seen and specifications and forms of tender obtained at the office of the Engineer, Maintenance of Way, 68 King St. E., Toronto.

Tenders will not be considered unless made on the forms supplied by the railway company and in accordance with the conditions contained therein.

NOTE: Blue print copies of the drawings may be obtained at the office of the Engineer, Maintenance of Way, by depositing the accepted bank cheque for the sum of \$10.00, payable to the order of the Treasurer of the Canadian Northern Railway, the said cheque to be returned if the intending tenderer submits a regular tender.

The lowest or any tender not necessarily accepted.

A. F. STEWART,  
Chief Engineer,  
Eastern Lines.

Canadian Northern Railway,  
68 King Street East,  
Toronto, Ont.



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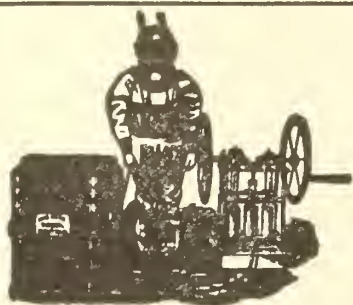
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Grinders in the World.

## CANADIAN PACIFIC RAILWAY COM- PANY DIVIDEND NOTICE.

At a meeting of the Board of Directors, held to-day a dividend of two and one-half per cent. on the Common Stock for the quarter ended 30th September last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account, was declared payable on 31st December next, to shareholders of record, at 1 p.m. on 30th November instant.

ERNEST ALEXANDER,  
Secretary.

Montreal, 13th November, 1918.

NOTICE is hereby given that the Grand Trunk Railway Company of Canada will apply to the Parliament of Canada, at its next session, for an Act authorizing the creation and issue for the general purposes of the company of additional Grand Trunk Consolidated Debenture Stock, bearing interest at four per cent. per annum, to an aggregate amount the annual interest upon which shall not exceed £100,000 sterling, and for other purposes.

DATED at Montreal this 19th day of November, A.D. 1918.

W. H. BIGGAR,  
Solicitor for Applicants.

## THE VICTORIA ROLLING STOCK & REALTY CO., OF ONTARIO, LIMITED.

Notice is hereby given that a dividend of four per cent. on the paid-up capital stock of the Company for the half-year ended Nov. 30th, 1918, has been declared payable Dec. 2nd, 1918, to the shareholders on record as of the 30th of Nov., 1918.

H. F. MARRIOTT, Secretary.  
Toronto, Nov. 22th, 1918.

## Rails, Cars, Locomotives

and Contractors' Equipment

IMMEDIATE  
SHIPMENT

**John J. Gartshore**

58 Front Street West  
TORONTO

## NOTICE.

The General Railway Signal Company of the United States of America, the owner of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signalling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents to the facts that it is prepared to sell and furnish, at short notice, all such devices and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to The General Railway Signal Company of Canada, Limited, Lachine, Province of Quebec, Canada.



## Small Cars

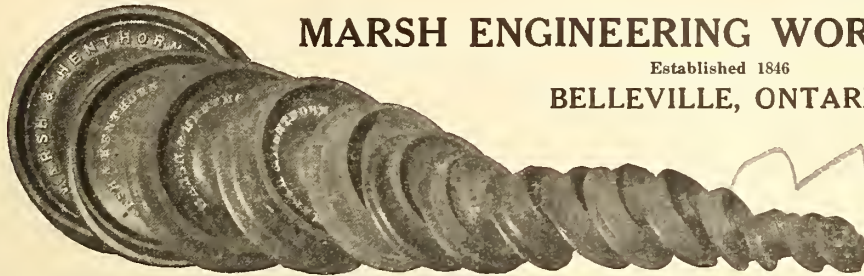
**All Kinds For All Purposes**

We make all styles of Small Cars, wood body, or steel body, Side or end dump, or rotary dump, or small platform or push cars, for any kind of work.

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One of our many types of Small Cars. We make these any size or weight to suit the load.



Chilled Car Wheels, any required diameter, for repair work, or for building new cars. Properly chilled and annealed to give long life and satisfactory service.

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**For Building Your Own Cars**

Hundreds and hundreds of cars have been built by the user from car irons supplied by us. It is the cheapest way to get your cars, and they give just as good service.

Let us quote you when you are next in the market.

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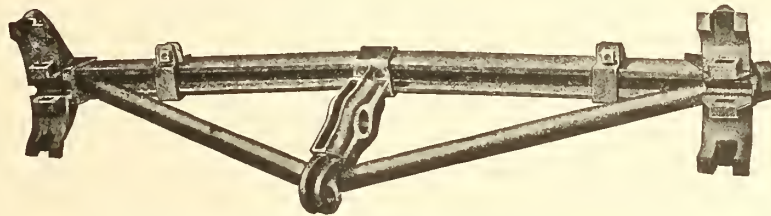
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NATHAN MANUFACTURING COMPANY, NEW YORK CITY  
Locomotive Lubricators, Injectors, Safety  
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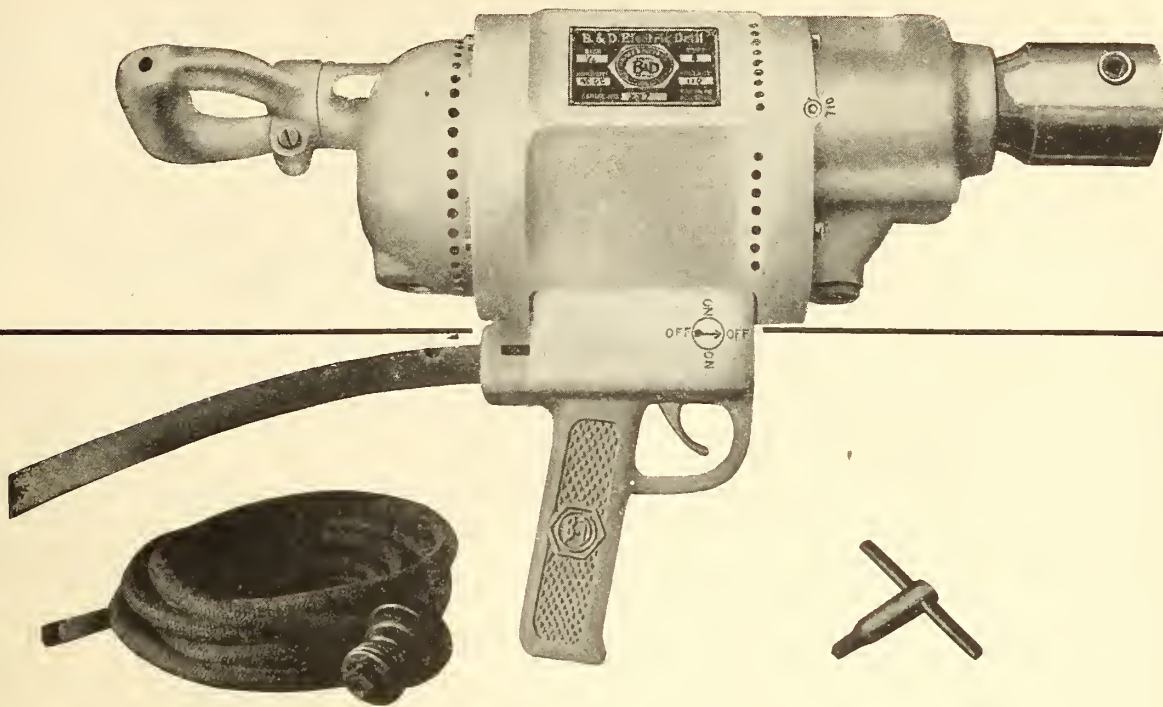
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Holding a Portable Drill steadily, hour after hour, is a wrist straining, drill breaking job; to make it worse, with some drills you have to let go with one hand to reach the switch—and snap go the little drills when the weight falls on them. There's none of that with the compact, light

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You can keep both hands on the machine, hold it steady all the time, right up to the time it stops. When it breaks through, you simply pull the trigger and that cuts off the current. The Pistol Grip makes this tool as easy to hold and aim as an automatic pistol, and the Trigger Control adds to its convenience. Light yet strong, with a powerful, cool-running, universal motor, hardened chrome vanadium steel gears and ball thrust bearings, it is an ideal "odd-job" or manufacturing "portable."

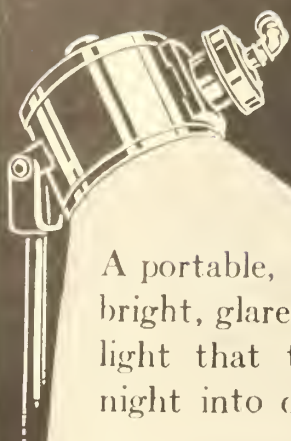
All B & D Portable Electric Tools are guaranteed to develop rated capacity and to be free from imperfections in workmanship or material. Any tool proving defective within one year from date of shipment will be repaired at the factory free of charge to the purchaser, provided the tool has been used within its rated capacity and properly applied.

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It can be diffused over large  
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Leave Toronto 7 p.m.

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Arrive Vancouver 10.05 p.m. (Fourth Day)

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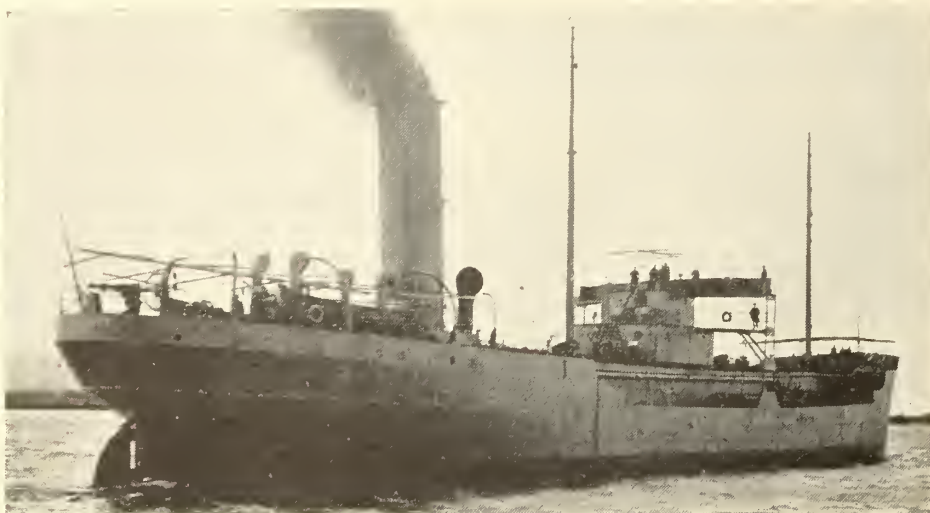


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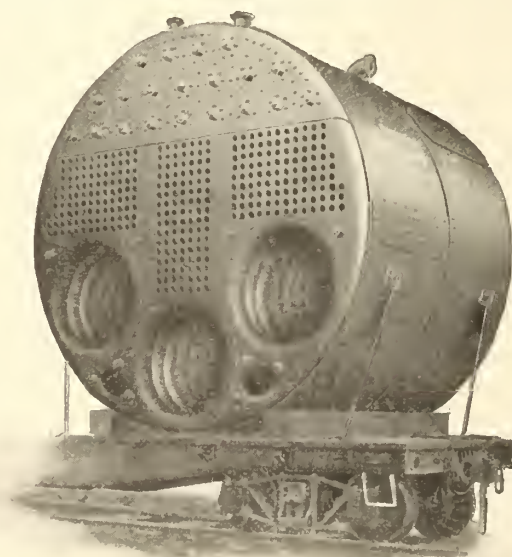


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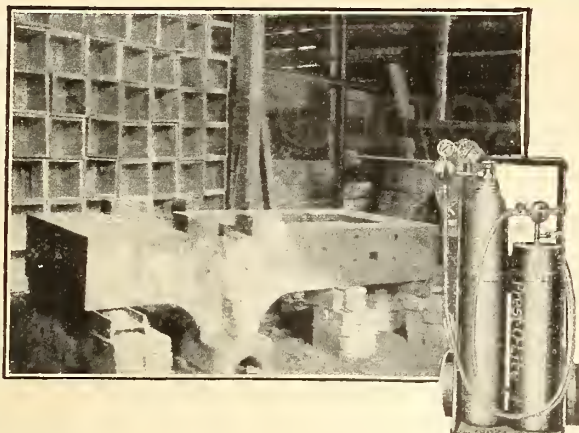
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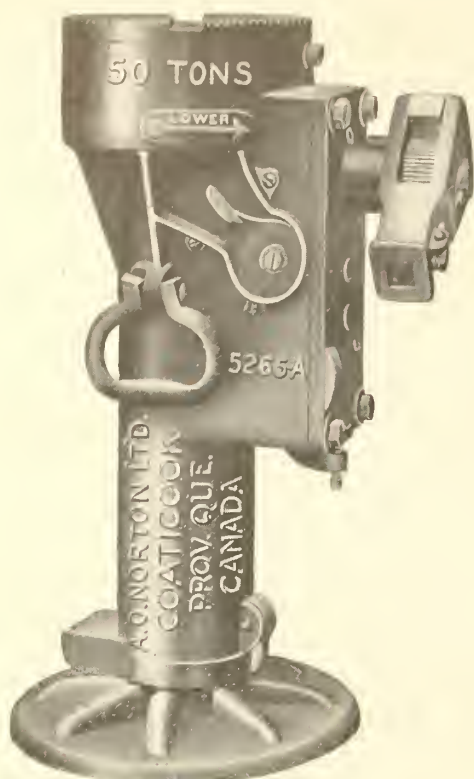
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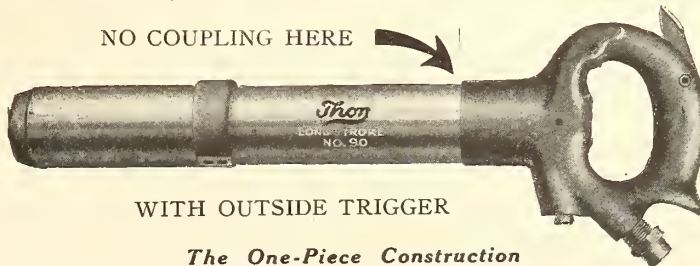
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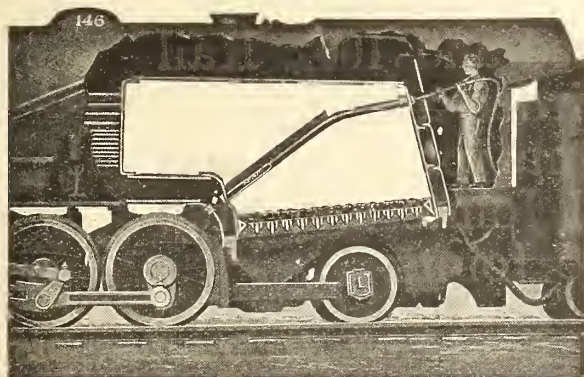
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Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

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Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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All internal connections permanently soldered.

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A vessel equipped with a superheater should have certain advantages over a similar vessel not so equipped.

A substantial reduction in fuel consumption.

A greater steaming radius from a given amount of fuel.

A reserve capacity which will provide increased sustained power and, therefore, increased speed when it is needed.

Fire-tube superheaters meet all these requirements.

### Locomotive Superheater Co. MARINE SUPERHEATERS

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Locomotive and Car Wheel Tyres  
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These Reinforced Brake Shoes weighed approximately twenty pounds each when put in service. When ready for the scrap heap, after long and satisfactory use, they weighed about six pounds each.

Just compare this record with that of ordinary unreinforced brake shoes. Almost invariably they go to pieces before being half worn out, and their average scrap weight is about fifteen pounds.

No argument for ordinary shoes can meet the demonstrated facts that stand behind Reinforced Brake Shoes.

*Manufactured in Canada,*

**Dominion Brake Shoe Company, Limited**

The HOLDEN CO., Limited, Agents,  
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**S**TEEL RAILS  
PLICE BARS  
STEEL TIE PLATES

PIG IRON  
BASIC & BESSEMER

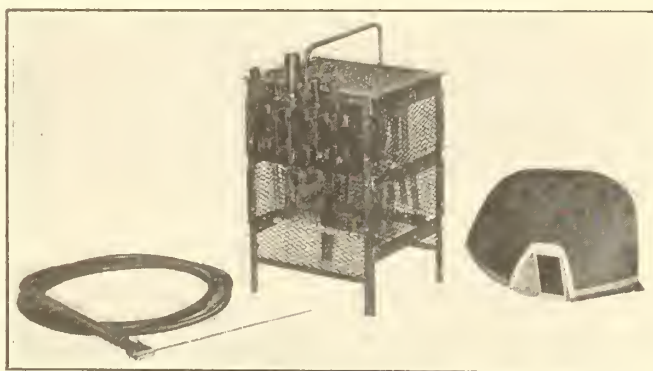


**S**TRUCTURAL SHAPES  
STANDARD MERCHANT  
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BLOOMS BILLETS  
& SLABS

SAULT STE. MARIE, ONT. CANADA.

## Erico Arc Welding Outfit



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It eliminates an enormous waste by reclaiming many parts that otherwise are discarded as being unrepairable. The entire weight of this equipment totals only 16½ pounds and 22 pounds for 110 and 220 Voltage respectively. We can furnish this outfit to be used successfully on any voltage and current capacity.

Let us send you full particulars.

**The Electric Railway Improvement Company**  
Cleveland, Ohio.

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Vertical and Horizontal

Boiler Feed Pumps  
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Sanitary Pumps  
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MADE of first-class Materials

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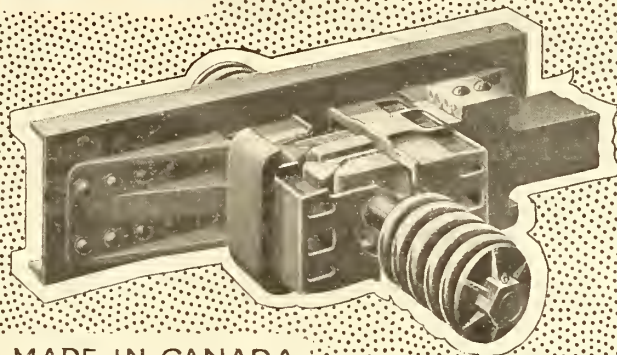
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## AIR BRAKES AND FITTINGS

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## ALCOHOL

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## ANCHOR RODS

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## ASBESTOS

Can. H. W. Johns-Manville Co.

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## AXLES

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Marsh Engineering Works

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Pennsylvania Steel Export Co.

Steel Co. of Canada

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Canadian National Carbon Co.

## BATTERIES, SIGNAL

Canadian National Carbon Co.

## BATTERIES, STORAGE

Canadian National Carbon Co.

T. A. Edison Co.

## BATTERIES, TRACK

Canadian National Carbon Co.

## BATTERY SUPPLIES

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M. Beatty & Sons

F. H. Hopkins & Co.

John Inglis Co.

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Polson Iron Works

## BOILERS, PORTABLE

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John Inglis Co.

Polson Iron Works

## BOILERS, MARINE & STATIONARY

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Polson Iron Works

## BOILERS, STEAM

Babcock & Wilcox

John Inglis Co.

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## BOILERS, WATER TUBE

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DRIVER

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Dominion Copper Products Co.

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Dominion Bridge Co.

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Brown Hoisting Machinery Co.

F. H. Hopkins & Co.

Marsh Engineering Works

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Marsh Engineering Works

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Dominion Bridge Co.

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Hull Iron & Steel Foundries, Ltd.

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Taylor & Arnold

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## CASTINGS, STEEL

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Dominion Copper Products Co.

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Taylor & Arnold

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Steam and Gas Coals

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Flexible Armored Hose  
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Expander Ring  
Packing Cup  
Steel Car Insulation  
Refrigerator Car Insulation  
Asbestos Cements  
Underground Conduit

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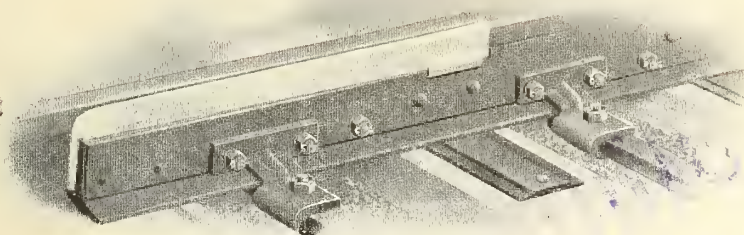
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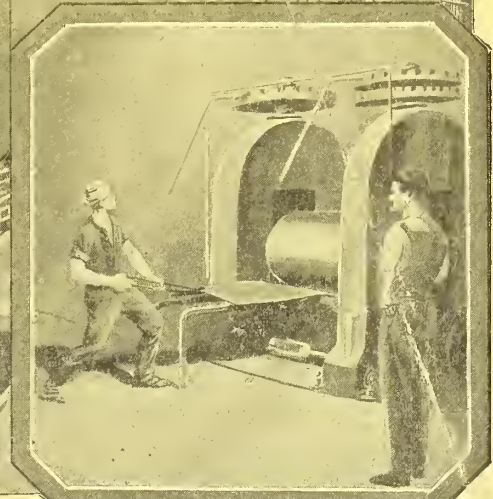
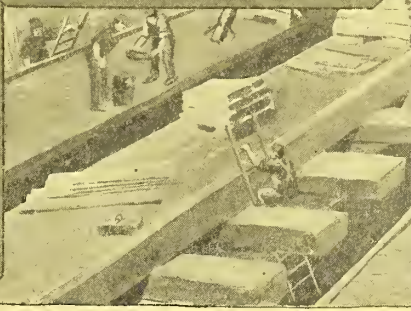
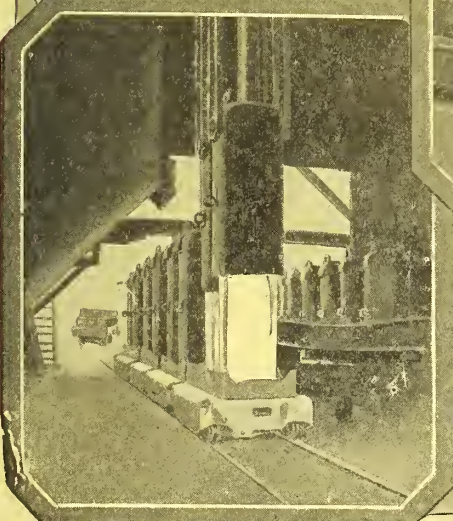
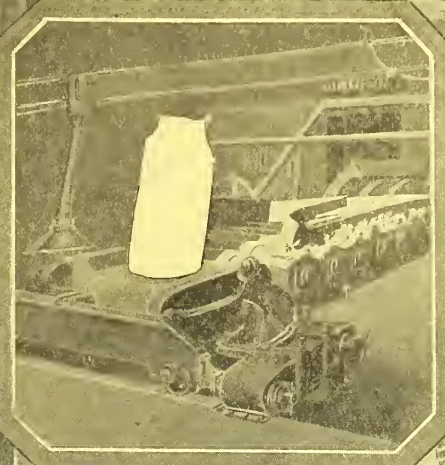
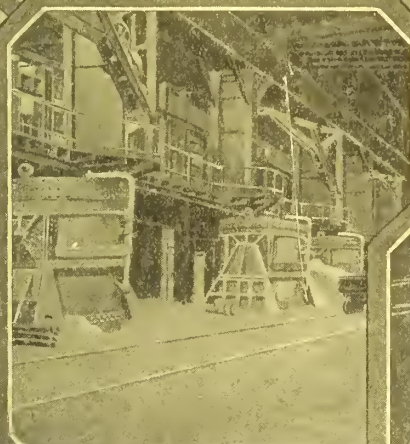
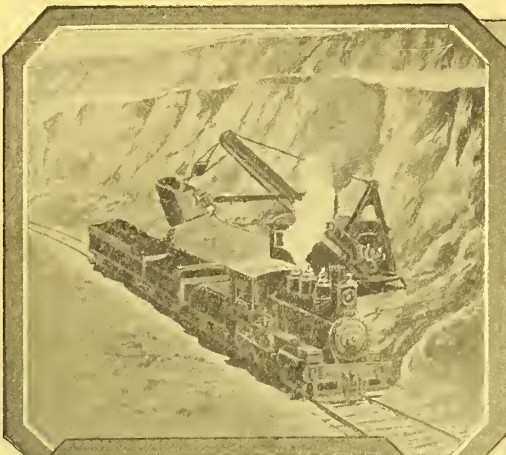
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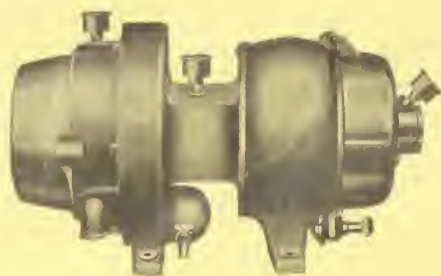
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